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# COLLEGE OF ARTS AND LETTERS

## Undergraduate Catalog

University Hall  
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### Mission

The College of Arts and Letters leads liberal arts education and research at The University of Toledo. Its rich array of general education courses comprises an essential part of the curriculum for all students at the University. Through its numerous majors and professional programs, the college prepares undergraduate and graduate students to engage with complex challenges as adaptable, creative and active global citizens. Respecting tradition and fostering innovation, the college promotes diversity and inclusion, academic freedom, and collaborative work within the University and with community and global partners.

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### Programs

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### **Urban Studies**

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  - Minor in Applied German (<https://catalog.utoledo.edu/undergraduate/arts-letters/world-languages-cultures/minor-applied-german>)
  - Minor in Arabic (<https://catalog.utoledo.edu/undergraduate/arts-letters/world-languages-cultures/minor-arabic>)
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## Admission Policies

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### NEW FIRST-YEAR STUDENTS

New first-year students must:

1. submit a college test score (ACT or SAT) and
2. have either a 2.5 high school GPA or ACT composite of 20 (or SAT combined reading and math score of 1030)

to be admitted to the College of Arts and Letters. Applicants not meeting these standards will be admitted to the Department of Exploratory Studies in University College.

To be considered for admission to the pre-med, pre-dent and pre-vet programs, students will need a minimum high school cumulative GPA of 3.2 and an ACT composite score of 25 (or minimum SAT combined reading and math score of 1150). Students should also have successfully completed a minimum of three years of high school mathematics (algebra I, algebra II and geometry) and high school chemistry. Applicants not meeting these standards but meeting the Arts and Letters college admission standards will be admitted to the College of Arts and Letters degree program of their choice as BA (undecided) majors.

## CHANGE OF COLLEGE

Students in good standing (i.e., with a cumulative UT GPA of 2.0 or higher) who wish to change from another college of The University of Toledo to the College of Arts and Letters should make an appointment with a college Advisor in the College Student Services Office to discuss their transfer and have their academic records reviewed. External transfer course work previously evaluated by other UT colleges that could apply to the new major may be reevaluated. All college requirements, including core, distributive, major and related requirements, must be fulfilled as specified in the catalog for the year in which the student enters the College of Arts and Letters. Credit restrictions and level requirements for College of Arts and Letters students will apply. Continuing UT students seeking admission to pre-medical, pre-dental and pre-veterinary programs must have a 3.0 cumulative college GPA and have completed CHEM 1090 or CHEM 1230 and MATH 1320 or higher with a B or better.

## ADMISSION WITH TRANSFER CREDIT FROM ANOTHER INSTITUTION

Course work from other institutions is accepted at the level of the UT course equivalent. All Study Abroad credit is accepted as transfer credit. Students with transfer credit are generally expected to fulfill all University and college course requirements for a degree in the College of Arts and Letters as specified in the catalog for the year in which they enter the College of Arts and Letters. In some cases, not all the credits that transfer into The University of Toledo will apply toward a degree in the College of Arts and Letters, e.g., developmental courses and excess credits in the major and in technical subjects. Transfer students from other institutions must take at least 30 semester hours at The University of Toledo, including 12 semester hours of work in their major field (22 semester hours in Psychology) and 9 semester hours in their minor field, regardless of the number of hours transferred.

Students transferring to the University of Toledo in Spring 2007 or later, including transfer readmits, must meet minimum GPA requirements in their Arts and Letters majors and minors with both

1. the grades of all courses attempted at UT and
2. in a second calculation, the grades of all courses attempted at all institutions (including UT).

The grades of all courses (from all institutions) that are used by students to satisfy the core curriculum must be used in the calculation of the UT core curriculum GPA.

UT students who attend other institutions as guests or transient students in Fall 2008 or later must also meet minimum GPA requirements in their Arts and Letters majors and minors with

1. the grades of all courses attempted at UT and
2. in a second calculation, the grades of all courses attempted at all institutions (including UT).

The grades of all courses (from all institutions) that are used by students to satisfy the core curriculum must be used in the calculation of the UT core curriculum GPA. For the purposes of meeting minimum cumulative GPAs in a student's major(s) and/or minor(s) and the core curriculum, the

grades of all courses attempted at all institutions will be included in the GPA calculation(s).

Transfer students should note that The University of Toledo will include all course work taken at all institutions of higher education in the calculation to determine if a student will graduate with honors. All college course work ever taken is computed in determining eligibility for graduation with honors, although no student will be awarded a level of honors above that indicated by The University of Toledo cumulative grade point average (GPA). Note: The University of Toledo requires a minimum of 30 semester hours of standard letter graded courses from UT in order to qualify for graduation with honors.

An applicant who has undertaken courses at a regionally accredited college or university and who submits through the Office of Undergraduate Admission for Adult, Transfer and International Students an official transcript listing courses and grades and giving evidence of good standing will be admitted to the College of Arts and Letters, provided the student has maintained a minimum GPA of 2.0 on a 4.0 scale.

Exceptions to this minimum admission requirement for academic majors are rarely made and require the applicant to demonstrate, in a written petition, that there are special circumstances that warrant waiver of the requirement. The undergraduate associate dean will consult with the appropriate academic offices and render a decision. Approval of the petition is not automatic, and those students who are admitted by petition will be placed on special probationary status and must meet certain conditions to remain enrolled.

If the college from which the applicant transfers lacks proper accreditation, the student may be denied transfer credit on the basis of the transcript, but may be allowed to obtain credit by passing advanced standing examinations with at least a C grade. Official transcripts of records from all schools previously attended must be on file with the Office of Undergraduate Admission for Adult, Transfer and International Students before the student will be permitted to register.

## A SECOND DEGREE OR MAJOR AT THE UNIVERSITY OF TOLEDO

A student earning a first degree at The University of Toledo in a college other than Arts and Letters may earn a second bachelor's degree in the College of Arts and Letters by satisfying all requirements for both degrees. An undergraduate with a degree from another institution is considered a transfer student. Note that students who readmit subsequent to earning their first degree may earn a second bachelor's degree as long as it is not concurrent with their residency for the first degree and does not duplicate the initial credential. In these cases, such a student is then considered a candidate for a second degree. See requirements for admission with transfer credit from another institution. See also sections on majors and minors for restrictions.

A student earning a degree at The University of Toledo in the College of Arts and Letters may earn a second degree in the college by completing the requirements of both degrees. General education courses that meet the requirements of both degrees will count for both. The two degrees must be of a different type (BFA and BM, BFA and BA, or BA and BM), and both must be offered by the College of Arts and Letters.

A student earning a Bachelor of Arts in the College of Arts and Letters may concurrently earn a second major in the same degree by completing the requirements of both majors. The second major may serve as a replacement for the "Related Area" requirement in the Bachelor of Arts degree. It is important to understand that completing this pathway will result in the achievement of a single degree but with dual majors, from the College of Arts and Letters.

## REQUIREMENTS FOR STUDENTS WITH AN ASSOCIATE'S DEGREE

Students holding an Associate of Arts or Associate of Science degree from an accredited college are encouraged to enroll in the College of Arts and Letters and, in many instances, may expect to earn an appropriate baccalaureate upon completion of two years of full-time study. Students with an Associate's degree in a technical program will likely require more time to complete a bachelor's degree. The following regulations apply:

- Students must complete the equivalent of the specified University and college core curriculum and distributive requirements for a bachelor's degree. In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 to 4000 levels; of these, a minimum of 32 hours must be taken at the 3000 to 4000 levels in baccalaureate degree-granting colleges. Course work from other institutions is accepted at the level of the UT course equivalent.
- Students may enroll in any departmental, interdepartmental or interdisciplinary program for which they meet the admission criteria. All of the usual major and related area requirements must be fulfilled as specified in the catalog for the year in which the student entered the College of Arts and Letters.

## READMISSION OF FORMER STUDENTS

Students who have withdrawn from the College of Arts and Letters (or a previously-existing college containing a major currently offered in the College of Arts and Letters) and The University of Toledo and have not attended any other institution in the interim may be readmitted, provided they were eligible to continue enrollment in the college at the time they discontinued attendance. Such students should readmit at the Student Services Office. Students who have been suspended from any University of Toledo college must submit a written letter of petition. Students who readmit after more than 12 consecutive months' absence must also comply with existing college requirements at the time of readmission.

## Academic Policies

Refer to UT Policy website (<http://www.utoledo.edu/policies/>) for academic policies that apply to all students.

## ACADEMIC ADVISING

Academic advising is a process intended to help students derive as many benefits as possible from their education. This occurs when Advisors help students develop and reach academic and career goals. While the ultimate responsibility for making personal and educational decisions rests with the student, Advisors assist by helping to identify and assess alternatives and the consequences of decisions. Advising can be much more than selecting courses. The more frequently students arrange to meet with their Advisors, the better their needs can be served. New students, transfer students, students changing colleges, and continuing

general studies students are advised in the Student Services Office, University Hall Room 3000, by college staff Advisors. They:

- provide essential information;
- help students select courses to meet university general education and college requirements;
- suggest courses for the exploration of majors and minors; and
- help students evaluate academic progress and adjustment to university life.

Students with declared majors and/or minors are advised by departmental major or program Advisors, faculty who provide general information as well as more specialized information about majors and minor programs, departmental course offerings, and career and graduate opportunities. They help students select courses for core, major, related, and other requirements. Students seeking more than one major or degree, a minor, or admission to professional school should meet periodically with one or more additional Advisors. Departmental major advisors will be assigned within the department; contact the department chair for assignments.

## STUDENT RESPONSIBILITIES

Students are responsible for correctly selecting courses for their programs of study each semester and for fulfilling all degree requirements. Although Advisors will assist wherever possible, the final responsibility rests with the student. Students are expected to make sure that they are fulfilling all degree requirements, as published in the issue of the catalog under which they entered. Students who have been out of the College of Arts and Letters for 12 consecutive months are responsible for the requirements in the University catalog under which they reenter.

## TRANSCRIPTS AND DEGREE AUDIT REPORTS

A transcript is a complete chronological list of a student's academic course work (including all courses attempted and grades earned). It does not show how specific courses apply or do not apply to University and college requirements as stipulated in this catalog. For example, developmental, non-repeatable and certain other courses are not counted toward minimum credits for degrees, but appear on transcripts.

The Degree Audit Report (DAR) details all requirements applicable to a student's academic program (degree, major, minor) and applies the student's courses on the transcript (including transfer credit) to those requirements. The DAR should be used to identify requirements remaining when all registered courses are completed. Students may view their transcript and DAR through the myUT portal with Student Self-Service.

## DECLARING OR CHANGING A MAJOR OR MINOR

To declare a College of Arts and Letters major or minor or change a College of Arts and Letters major or minor previously declared, students must fill out a form that is available in the College Student Services Office, UH 3000.

## SEQUENCE OF COURSES

There is no single prescribed sequence of courses, except that all first-year students should take AR 1000 Orientation, College Composition I and II, and math. Students should consult the later sections of the catalog devoted to programs of study and course offerings, and they should review their programs with their academic advisors to ensure they complete courses in the proper sequences. In addition, students should use their Degree Audit Reports to track their progress.

Outside the major, during the first two years, they should be sure to take those courses in the core requirements that are prerequisite to courses they wish to take as juniors and seniors.

## STUDY ABROAD OR STUDY AWAY

Students who plan to study abroad or away must be sure that their proposed course of study is properly accredited. Its academic acceptability should be verified by the college before departure. Students also should ascertain in advance from their Advisors whether the course work will count toward their core curriculum requirements, majors, or related areas or only be regarded as elective. Credit for foreign language study is subject to the approval and recommendation of the department of foreign languages.

Information about study abroad programs is available from the Center for International Studies and Programs, Snyder Memorial, suite 1000: <http://www.utoledo.edu/cisp/>. Your Advisor will also have general information about study abroad.

## TRANSIENT (GUEST) ENROLLMENT AT ANOTHER INSTITUTION

College of Arts and Letters students must have advance permission both to enroll elsewhere as a guest and to take specific courses. The Transient Student form for this purpose is available in the College Student Services Office and on the website: [http://www.utoledo.edu/offices/student-services/facultystaff/faculty\\_forms.html](http://www.utoledo.edu/offices/student-services/facultystaff/faculty_forms.html).

Students enrolling without permission will be considered transfer readmits upon their return to UT. Arts and Letters students enrolled as transients or guests at another institution must submit an official transcript to the UT Office of Admission at the conclusion of the enrolled term after final grades have posted. Grades of all courses attempted in the major, minor, and the UT core curriculum will be used in cumulative GPA calculations.

## GPA RECALCULATION FOR REPEATED COURSES

The College of Arts and Letters permits a maximum of 12 semester hours or the equivalent of 18 quarter hours of course work to be deleted from the GPA calculation. Students who have had their GPAs recomputed under the Academic Forgiveness Policy are not eligible for grade deletions. Criteria governing GPA recalculation are given in the undergraduate policy 3364 71 07: *GPA recalculation* at <http://www.utoledo.edu/policies/academic/>

Students should check with the College Student Services Office for more specific information on this policy. Students may not use repeat courses taken at other institutions to qualify for a GPA recalculation.

## WITHDRAWAL POLICY (W, IW, DR GRADES)

A student who wants to withdraw from a course must withdraw online or file a petition in the Registrar's Office by the deadline in the term of enrollment - <https://www.utoledo.edu/offices/registrar/forms.html>. The number of credit hours of W (or the former grades of IW or DR) is limited to 22 hours for all undergraduate students in degree programs in the College of Arts and Letters. Once a student has accumulated 22 hours of W, IW or DR, further withdrawals will be counted as F's in computation of the student's GPA for purposes of probation or suspension. In addition, students who receive financial aid risk the loss of financial aid if they accumulate excessive withdrawal hours.

Students who transfer into the College of Arts and Letters from another college at The University of Toledo will bring with them the number of W's, IW's and DR's accumulated in their previous work.

**Note:** Assignment of the IW and DR grades has been discontinued.

## ACADEMIC PROBATION

A student whose cumulative GPA is less than 2.0 is automatically placed on probation until a 2.0 cumulative GPA is achieved (See Withdrawal Policy above). It is recommended that a student on probation not enroll for more than 12 to 14 credits.

## ACADEMIC SUSPENSION

Academic suspension means that a student is prohibited from registering at The University of Toledo for a period of at least one semester. Students are subject to academic suspension if their GPA falls below the minimum GPA listed below or if they fail to make sufficient progress toward attainment of the degree. (See Withdrawal Policy). Students may remove Incompletes while under suspension.

A student is subject to academic suspension if the cumulative GPA is less than:

- 1.0 for 10 to 19 hours attempted
- 1.5 for 20 to 29 hours attempted
- 1.7 for 30 to 39 hours attempted
- 1.8 for 40 to 49 hours attempted
- 1.9 for 50 to 59 hours attempted
- 2.0 for 60 or more hours attempted
- After accumulating 60 credit hours without suspension, a student may be suspended if the cumulative GPA falls below 2.0 for two consecutive semesters.

## Trial Readmission Policy

After the required suspension period, a student may petition for readmission to the College of Arts and Letters through the Student Services Office. Full details including procedures, deadlines, and how to file a petition for reinstatement can be found on the Student Services website (<https://www.utoledo.edu/offices/student-services/>)



reinstatementpolicy1.html). If the petition is accepted, the college committee will determine the terms of the conditional registration agreement, under which the student will be permitted to re-enroll. Suspended students who are granted readmission must maintain the designated GPA for each semester thereafter and meet the conditions of their readmission agreement.

Students failing to meet these conditions are subject to a one-year suspension.

## Dismissal Policy

Students who fail to meet the conditions for readmission after their second suspension are subject to dismissal and are not eligible for readmission to the College of Arts and Letters for at least three years. Criteria governing this policy are detailed in the undergraduate policy 336571 06: Academic Forgiveness - <http://www.utoledo.edu/policies/academic/>

## ACADEMIC GRIEVANCE

A student has the responsibility and right to call to the attention of an instructor any grade that the student believes to be in error or unfair. A student may appeal the decision of the instructor, in order, to the department Chair, then to the college appeals committee, and then the Dean if the problem is not resolved. If the problem is not resolved at the college level, the student may appeal to the student grievance council (See also *The University of Toledo Student Handbook on the Student Affairs webpage*: <http://www.utoledo.edu/studentaffairs/index.html>). A student must begin the appeals process no later than the end of the semester following the one in which the grievance arose.

## STATEMENT ON ACADEMIC DISHONESTY

A student found to be academically dishonest by a faculty member may appeal, in order, to the department Chair, the college appeals committee, the Dean and the University student grievance council. The procedures for making an appeal to the student grievance council may be found in *The University of Toledo Student Handbook on the Student Affairs website* at <http://www.utoledo.edu/studentaffairs/index.html>.

Criteria governing this policy are detailed in the undergraduate policy 33647104: Academic Dishonesty: <http://www.utoledo.edu/policies/academic/undergraduate/>

## COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

The College of Arts and Letters will accept a maximum of 21 semester hours of CLEP through successful completion of the four general examinations. Additional credit may be earned through satisfactory scores on individual subject examinations. Specific information about general examination scores and credit can be found in the general section of the catalog: <https://nextcatalog.utoledo.edu/general-section/earning-alternative-college-credit/>.

## ADVANCED PLACEMENT PROGRAM

Refer to the University of Toledo Office of the Registrar webpage at [http://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](http://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and

credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## PASS/NO CREDIT OPTION

Refer to the individual programs of study in the undergraduate section of this catalog for the limitations on pass/no credit grading in effect for different majors. Undecided students, as a general rule, should not elect pass/no credit grading in major-level courses.

## GRADUATION EVALUATION REQUIREMENTS

Detailed instructions on planning for graduation and ensuring the completion of requirements are available on the College Student Services website: [https://www.utoledo.edu/offices/student-services/faq/grad\\_steps.html](https://www.utoledo.edu/offices/student-services/faq/grad_steps.html)

## FIELD EXPERIENCE/INTERNSHIP

Policies and procedures for incorporating field experiences or internships in academic programs vary from major to major. Some majors require a field experience or internship; for other majors, they are optional. Students should seek information from their major departments and obtain advance approval for all field experiences or internships.

## Student Services

The Office of Student Services supports Arts & Letters students throughout their academic careers, helping them derive as many benefits as possible from their education. The office's academic advisors are vital links to successful degree completion, providing students with services and resources to help them accomplish their goals.

Advisors assist students in understanding degree requirements, assessing progress toward degree completion, selecting courses and prerequisites, monitoring academic performance, discussing plans for the future, as well as one-on-one academic mentoring to students with academic issues or on academic probation.

For more information, go to <http://www.utoledo.edu/offices/student-services/>.

Adam Hintz, Director of Student Services  
University Hall Room 3000  
[adam.hintz2@utoledo.edu](mailto:adam.hintz2@utoledo.edu) (Adam.hintz2@utoledo.edu)  
Phone: 419.530.2671

## Degree Requirements

### Grade Point Averages

A cumulative grade point average (GPA) reflects all grades earned, including grades of F and grades in repeated courses. Candidates must earn a minimum overall cumulative GPA of C (that is, a 2.0 GPA on a 4.0 scale) for all UT course work. In addition, candidates must earn a minimum cumulative GPA of C in the major, minor (optional) and UT core curriculum requirements with the grades of all courses attempted at all institutions included in the GPA calculation. Some programs require a higher GPA in the major. Criteria governing this policy are detailed under 3364 71 07: GPA recalculation (<http://www.utoledo.edu/policies/>

academic/undergraduate/pdfs/3364-71-07%20%20Repeating%20a%20course%20and%20recalculation%20of%20GPA.pdf).

## Residency Requirement

Students transferring from other institutions must earn at least 30 hours of credit at The University of Toledo; at least 12 of these must be in the major area, and for students pursuing a minor, at least 9 hours must be earned at The University of Toledo. Full-time students must take their last semester, and part-time students their last 12 hours, in residence, unless alternative arrangements have been made in advance with the Dean of the College of Arts and Letters.

## Credit Hours and Levels

1. Students must complete 120-127 credit hours of course work that must include the University and college core curriculum requirements, and either an area of concentration (major) and course work related to the major, or an interdisciplinary program. The exact number of hours is determined by the program.
2. In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 to 4000 levels; of these a minimum of 32 hours must be taken at the 3000 to 4000 levels. (Courses transferred from community, junior or technical colleges offering Associate degrees will count at the levels of their UT equivalents.)
3. Students are cautioned to make use of their degree audit and review remaining requirements with their Advisor before every registration in order to make progress toward completion of their requirements in an orderly, timely manner.
4. Insofar as a student can complete the basic courses and the courses required for a chosen major in fewer than the hours required for a degree, the student must choose elective courses to complete the total of hours, subject to the restrictions outlined below.

## Credit Restrictions

Total earned hours shown on a student's transcript may not all be applicable to the 120-127 credits required for a degree, as follows:

1. Students with entrance deficiencies in mathematics and other students who are required or choose to take developmental course work will not be able to count those hours toward the degree.
2. No more than four hours of credit in performing ensembles (MUS 3010 to MUS 3190) will apply toward the degree.
3. No courses in typing, shorthand or keyboarding will apply toward the degree.
4. No more than two hours in Student Leadership Development I and II will apply toward the degree.
5. Duplicate credit - except for courses identified as repeatable courses, students will not receive credit for repeated courses (taking the same course twice), whether taken at The University of Toledo or elsewhere.
6. The college reserves the right to deny credit for other specific courses (including most SKLS and some UC courses) and for blanket technical credit not applicable to a student's specific program.
7. A maximum of 2 credits of sport and physical courses are applicable toward a degree.

## University General Education/Core Requirements

Students earning baccalaureates in all colleges and programs are required to complete between 36 and 42 credit hours of courses that comprise the university core curriculum. Those courses are distributed in the areas of English composition, humanities/fine arts, social sciences, natural sciences and mathematics, and multicultural studies. Some colleges and programs require courses in these areas above those required to fulfill University core curriculum requirements. Students should consult their degree audit or their advisor for specific details.

## Departmental Major

Every student must complete either a departmental major or an interdepartmental or interdisciplinary major. Courses given in other colleges of the University may be credited to the major only with the approval of the Dean of the College of Arts and Letters upon recommendation of the Department Chair. Waiver of a required course or the substitution of a course from another department does not necessarily reduce the minimum credits required in the major.

**See the complete list of departmental majors under "Degrees Offered" in the College of Arts and Letters section of this catalog.**

The minimum number of semester hours a student must complete for a departmental major is prescribed by the department. The maximum number of hours a student may elect for the major varies by degree program. A student may have two majors from two different departments within the College of Arts and Letters, provided the requirements of both programs are satisfied. Work in the second major may be accepted as fulfilling the related course requirement, but requires the approval of the Advisors in both departments. A student cannot use courses from the first major to satisfy the second and vice-versa. See section on "Earning a Second Degree" for statement on requirements when two or more desired major programs are offered as different degrees.

## Interdisciplinary Majors

A student may complete one of the interdisciplinary majors if accepted into that particular program. A student completing a departmental major and a second major in an interdisciplinary or interdepartmental major cannot use courses from the first major to satisfy the second or vice-versa. See the complete list of interdisciplinary majors under "Degrees Offered" in the College of Arts and Letters section of this catalog.

## Interdepartmental Major

A student who chooses an interdepartmental major must complete at least 60 hours divided approximately equally among three related departments. These 60 hours are in lieu of the prescribed hours in a departmental major and the 18 hours in related courses (see Related Courses).

The student must have at least a C average in all courses attempted in each of the three departments of the interdepartmental major. In planning a program, the student must consult with the interdepartmental Advisor of the college to select courses in each area that have the approval of the appropriate department Chair.

The three departments selected from the list of departmental majors (found under "Degrees Offered" in the College of Arts and Letters section of this catalog) are subject to the approval of the Dean and the department Chairs concerned. A student completing a departmental major and second major in an interdisciplinary or interdepartmental major cannot use courses from the first major to satisfy the second or vice-versa.

## Minors

Many College of Arts and Letters departments and interdisciplinary programs offer minors. In addition, non-program minors are offered in the college. Specific minor requirements are listed under Programs of Study. Students wishing to pursue minors should consult with their primary program Advisors and then with an Advisor in the Arts and Letters college office. Not all minors can be added to all degree programs. Courses selected for the minor must be chosen from courses acceptable for credit toward a major in the college. In meeting requirements for some majors, work in the minor may be accepted as fulfilling the 18 hours of related courses, but only with the approval of the student's major Advisor. Students completing a minor cannot use courses from their minor to satisfy requirements in the major.

No more than six hours of courses taken for minor credit may be applied to the total College of Arts and Letters general education requirements. A minimum GPA of 2.0 is required in the minor. Credit hours for a minor contained in the College of Arts and Letters vary from 18 to 22 hours, depending on the minor. At least nine of those hours must be completed at The University of Toledo. All minors must be declared and completed prior to graduation.

## Orientation

All new first-year students are required to take AR 1000 Orientation. The course is optional for transfer students.

## Related Courses

Every student who chooses a departmental major and students in some interdisciplinary majors also must complete a minimum of 18 hours in courses related to the major. These 18 hours must be in addition to courses taken to fulfill the basic requirements listed above. Each department defines the areas from which courses may be chosen by its majors, and these listings are given in other sections of this catalog under Programs of Study or in the student's online degree audit. Related courses must be chosen from courses acceptable for credit in a College of Arts and Letters major. Generally, these are upper-level courses.

Courses offered by other colleges of the University may be credited to the major or to related courses only with the approval of the department Chair.

## Writing Across the Curriculum

Students must pass both Composition I and II with a C or better. The College of Arts and Letters recommends that these requirements be met before completing 45 hours of course work.

After completing Composition I and II with a C or better, students must pass two writing intensive courses approved by their Advisor. The College of Arts and Letters recommends that the first of these writing courses

be completed within the first 65 hours of course work, and the second within the first 90 hours. One of these courses must be taken within the student's major. Students with dual majors must take a writing intensive course in each major. Students with interdisciplinary majors will meet this requirement by selecting courses in consultation with their Advisors, who will monitor students' progress to help them complete these requirements in a timely fashion.

Transfer students from institutions that have required writing intensive courses should have their former institution certify that they have completed writing intensive courses comparable to those required in the College of Arts and Letters. Transfer students who have not taken writing intensive courses must meet the College of Arts and Letters Writing Across the Curriculum requirements.

## Pre-Medical, Pre-Dental and Pre-Veterinary Program

Students interested in professional medical, dental or veterinary careers may choose to apply for the pre-medical, pre-dental or pre-veterinary programs. **Students choosing this option must also complete the requirements for a major in a specific discipline or in an interdisciplinary baccalaureate program.**

Because admission to a professional school is very competitive, students need to maintain high GPAs, both cumulative and in the sciences. The premedical/predental advisor will continually monitor a student's academic performance and make recommendations as to whether this program should be continued. If at any time a student's GPA drops below a 3.0, the student will be dropped from the program, unless extenuating circumstances exist, in which case the student will be placed on a probationary status until the grades improve.

The premedical/predental advisor will assist the student in determining the entrance requirements of the professional school being considered, since these requirements vary among schools. In general, these professional schools specify for entrance a core set of science courses that include one year (two semesters) each of biology, general chemistry, organic chemistry, physics and mathematics. Most schools recommend that candidates plan a broad course of study leading to either a B.A. or a B.S. degree in any discipline.

## Arts and Letters Requirements

Students should consult with their Advisors in selecting courses that will meet college requirements. With careful planning, students will be able to satisfy both the UT Core Curriculum and the College of Arts and Letters requirements by taking the minimum required hours. A student may take no more than two courses (or two courses and one lab for natural sciences) under each departmental code in satisfying the Core requirements.

Code	Title	Hours
<b>1. English Composition (University of Toledo Core Curriculum and College of Arts and Letters requirement) <sup>1</sup></b>		
<i>Select one of the following tracks:</i>		
A. Native speakers track (for students for whom English is a first language)		
ENGL 1110	College Composition I	

or ENGL 101 College Composition 1 Co-Requisite	
ENGL 1130	College Composition II: Academic Disciplines And Discourse
B. Non-native speakers track (for students for whom English is a second language) <sup>2</sup>	
ENGL 1020	Writing And Grammar For Students Of English As A Second Language <sup>2</sup>
ENGL 1110	College Composition I <sup>3</sup>
ENGL 1130	College Composition II: Academic Disciplines And Discourse
<b>2. Mathematics (UT Core Curriculum and College of Arts and Letters requirement)<sup>4</sup></b>	
MATH 1180	Reasoning With Mathematics <sup>5</sup>

**Code Title Hours**

### 3. Humanities and Fine Arts (University of Toledo Core Curriculum and College of Arts and Letters requirement)

UT Core requirement is two courses for six hours. To complete the Humanities and Fine Arts core, College of Arts and Letters students should select one history course and one literature course from the following:

#### A. English Literature

ENGL 2710	Reading Fiction
ENGL 2720	Reading Drama
ENGL 2730	Reading Poetry
ENGL 2800	Writing About Literature (WAC)

#### B. History

HIST 1010	Europe To 1600
HIST 1020	Europe From 1600
HIST 1050	World History To 1500
HIST 1060	World History From 1500
HIST 1070	The Contemporary World
HIST 1080	East Asia To 1800
HIST 1090	East Asia From 1800
HIST 1100	Latin American Civilizations
HIST 1110	African Civilization
HIST 1120	Middle East Civilization
HIST 1130	Introduction To Historical Thinking (WAC)
HIST 1200	Main Themes In American History
HIST 2040	Ancient Near East
HIST 2050	Ancient Greece
HIST 2060	Ancient Rome

Students in Art, Art History, Communication, Media Communication, Film, Music, and Theatre have these additional history choices. They must choose a course from a discipline other than the student's own major, and Art Majors may not select ARTH courses. Note: ONLY the courses marked as fulfilling Core Curriculum requirements can be counted as core courses.

ARTH 1500	Art In History <sup>6</sup>
ARTH 2050	History of Western Art
ARTH 2060	History of Western Art II
ARTH 2080	History Of Modern Art <sup>6</sup>

FILM 2350	Cinema History
MUS 2220	History Of Jazz (also US Diversity course) <sup>6</sup>
MUS 2240	History Of Rock And Roll <sup>6</sup>

C. Students may choose any other core Arts and Humanities courses to complete additional Core Curriculum requirements, including courses that fulfill a Multicultural requirement, with the following restrictions:

1. Students majoring in the Social Sciences and Interdisciplinary Studies will take two courses (6 hours) in the Arts and Humanities in addition to those taken to meet the English composition, literature and history requirements listed above. For Communication students, one of the courses must be a Fine Arts course (see list below.)

*Arts and Humanities electives (for students majoring in Social Sciences and Interdisciplinary Studies):*

Students may select courses from art, art history, communication, English, film, foreign languages, history, humanities, music, philosophy, religious studies and theatre. The complete list of Arts and Humanities core courses can be found in the General part of the undergraduate catalog, in the Core Curriculum section.

Fine Arts (Communication majors requirement) Note: ONLY the courses marked as fulfilling Core Curriculum requirements can be counted as core courses.

ART 1050	Foundations of 2D Design <sup>6</sup>
ART 1060	Fundamentals of Form <sup>6</sup>
ART 1070	Foundations of Digital Media
ART 1080	Foundations of Drawing I <sup>6</sup>
ART 1110	Art Journey <sup>6</sup>
ARTH 2100	Asian Art (also Non-western multicultural course)
ARTH 2200	Ethnographic Art (also Non-western multicultural course)
ARTH 2300	Introduction To Architecture
ARTH 2700	Women Artists In History
FILM 1310	Introduction To Film <sup>6</sup>
FILM 2330	Critical Approaches to Cinema
MUS 2200	Music Theory For The Non-Major <sup>6</sup>
MUS 2210	Introduction To Music <sup>6</sup>
MUS 2250	Musical Diversity In The United States (also US Diversity course) <sup>6</sup>
MUS 2420	Cultures And Music Of Non-Western Styles (also Non-western multicultural course) <sup>6</sup>
THR 1010	Acting for Non Majors
THR 1100	Introduction To Theatre <sup>6</sup>
THR 2200	Script Analysis

2. Students majoring in the Humanities (rather than the Arts) are required to complete one Fine Arts course.

#### Fine Arts (for Humanities majors)

Select 3 hours (course must be an appreciation or theory course, not a studio or skills course.)

### 4. Natural Sciences (University of Toledo Core Curriculum and College of Arts and Letters requirement)



UT Core Curriculum requirement is two courses for a minimum of 6 hours and must include one laboratory course. Students must take two courses from two different departments. The complete list of Natural Science core courses can be found in the General part of the undergraduate catalog, in the Core Curriculum section.

#### 5. Social Sciences (University of Toledo Core Curriculum and College of Arts and Letters requirement)

UT Core Curriculum requirement is two courses for six hours in two different disciplines; Students majoring in Arts and Humanities will take nine hours of courses in Social Sciences. Students may select Social Science courses that also will meet a multicultural requirement. Students may select courses from anthropology, economics, geography, political science, psychology, and sociology. The complete list of Social Science core courses can be found in the General part of the undergraduate catalog, in the Core Curriculum section.

Visual Art, Art History, Film, Music and Theatre majors must select one of their three courses from the following list. Note - ONLY the courses marked as fulfilling Core Curriculum requirements can be counted as core courses:

COMM 1010 Comm Principles And Practices <sup>7</sup>

COMM 2000 Mass Communication And Society <sup>7</sup>

COMM 2210 Audio Production I

COMM 2160 Single Camera Production

COMM 2300 Photojournalism

COMM 2400 Information Analysis

COMM 2600 Public Presentations

COMM 2810-COMM 2890 (various) <sup>6, 7</sup>

Code	Title	Hours
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#### 6. Foreign Language (College of Arts and Letters requirement)

Select one of the following options: <sup>8</sup>

*Option 1 - Demonstrate proficiency in a single foreign language through the intermediate level.* <sup>9, 10</sup>

ARBC 2150 Intermediate Arabic II

CHIN 2150 Intermediate Chinese II

FREN 2150 Intermediate French II

GERM 2150 Intermediate German II

JAPN 2150 Intermediate Japanese II

SPAN 2150 Intermediate Spanish II

*Option 2 - Complete study in a single language through 1120 or demonstrate competency to that level, AND complete either 6 additional hours of culture courses, or complete one semester in a study abroad program. Refer to the degree audit for a complete list of approved culture courses.* <sup>11</sup>

<sup>1</sup> Students must pass Composition I and Composition II with a grade of C or better.

<sup>2</sup> Non-native speakers will take an English placement test to determine appropriate level.

<sup>3</sup> Non-Native speakers of English should choose an ESL designated section of ENGL 1110.

<sup>4</sup> Students are placed into mathematics courses by ACT scores or placement tests.

<sup>5</sup> May replace with any mathematics course greater than MATH 1180. Some majors require different Math courses - check with your Advisor.

<sup>6</sup> Courses that also fulfill core curriculum requirements.

<sup>7</sup> COMM 1010, 2000 and 2840 fulfill Humanities core requirements rather than Social Science core requirements.

<sup>8</sup> Students pursuing the BM in Music or the BFA in Studio Art are exempt from this requirement.

<sup>9</sup> Students are placed into foreign language courses through placement testing (see footnote 10.) Every student is required to demonstrate proficiency in a single foreign language (Arabic, Chinese, French, German, Japanese, Latin or Spanish) through the intermediate level (foreign language 2150) in option 1, or through the Elementary level (1120) in option 2, by successfully completing the foreign language course at this level, or by achieving an appropriate score on a proficiency/placement test administered by the Department of World Languages and Cultures that reflects the equivalent. Students may, alternatively, complete the sequence of SPED to fulfill this requirement.

<sup>10</sup> Students beginning a foreign language should enroll in their chosen language at the elementary I level (1110) and take four semesters of foreign language if pursuing option 1, and two semesters if pursuing option 2. Those continuing a foreign language or attempting to demonstrate competency by examination should take a proficiency/placement test. Students with two or more years of French, German or Spanish in high school who place below an intermediate course may enroll in an intensive review course (1500) that covers the material in the first two semesters (1110 and 1120), and then complete the intermediate level courses (2140 and 2150.)

<sup>11</sup> Culture courses selected to fulfill this requirement will not simultaneously satisfy core curriculum US Diversity or Non-US Diversity requirements.

## Honors

- Departmental Honors in Arts and Letters
- Student Selection and Admission for the Jesup Scott Honors College
- Requirements for the Jesup Scott Honors College
- Honors Courses (HON)

Honors work in the College of Arts and Letters is available to academically talented and highly motivated students. Students may pursue Departmental Honors only, offered by individual departments within the college, or they may pursue College Honors, which is offered in conjunction with the Jesup Scott Honors College (p. 467) and requires students to complete both Departmental Honors and the full JSHC requirements.

## DEPARTMENTAL HONORS IN ARTS AND LETTERS

All departments in the College of Arts and Letters offer Departmental Honors, which requires the successful completion of an honors thesis, creative activity, or original research project in the student's major that is supervised by a faculty member in that department. Each College of Arts and Letters department sets its own specific requirements for Departmental Honors, and those requirements are described under the departmental entries in this catalog. Students who meet the criteria for

Departmental Honors in their major can pursue Departmental Honors without being enrolled in the Jesup Scott Honors College.

## STUDENT SELECTION AND ADMISSION FOR THE JESUP SCOTT HONORS COLLEGE

Students majoring within the College of Arts and Letters may apply to the Jesup Scott Honors College in order to receive College Honors. Students entering directly from high school are admitted based on a review of application materials, which include a high school transcript, references, an essay, an extracurricular resume, and ACT or SAT scores. Students with an ACT composite score of 28 or higher (SAT composite of 1240 or higher) and a high school GPA of 3.75 or higher are encouraged to apply. Highly motivated students with an ACT composite of at least 25 (SAT composite of at least 1140) and a minimum high school GPA of 3.5 also are considered for admission to the program.

Currently enrolled University of Toledo students and transfer students may apply for admission to the College Honors Program if they have completed at least 15, but not more than 60, graded semester hours of college work, and earned a minimum GPA of 3.3 (4.0 scale).

Students are admitted to the College Honors program on a space-available basis. For further details on the Jesup Scott Honors College, please see: <http://www.utoledo.edu/honors/>.

## REQUIREMENTS FOR THE JESUP SCOTT HONORS COLLEGE

Please see the Jesup Scott Honors College requirements here for a full overview: <https://catalog.utoledo.edu/undergraduate/jesup-scott-honors/jesup-scott-honors-college-program/>

Note that College of Arts and Letters students enrolled in the Jesup Scott Honors College are required to take Departmental Honors as part of the JSHC curriculum. Double majors in JSHC need fulfill Departmental Honors in only one of their majors.

## HONORS COURSES (HON)

Honors courses are of two kinds - those offered by the Jesup Scott Honors College and those offered by various departments and colleges. Consult the appropriate portion of this catalog for a listing.

# Department of Art

## ACCREDITING BODY: National Association of Schools of Arts and Design (NASAD)

Barbara WF Miner, Chair

The Department of Art, housed in the Center for the Visual Arts, and the Center for Sculptural Studies on the museum campus, features new instructional facilities with state-of-the-art studios and classrooms. With the exception of some introductory courses in art and art history, all instruction takes place at the museum campus, where day and evening courses are regularly scheduled. The museum campus is connected with the Main Campus by regularly scheduled student shuttle buses. Parking at the museum campus is available to students and faculty who have valid UT I.D.s.

## Advanced Placement

Please see Registrar's website for information on Advanced Placement ([http://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](http://www.utoledo.edu/offices/registrar/student_records/advan_credits.html)).

## Degrees Offered

The Department of Art is a fully accredited member of the National Association of Schools of Art and Design, and its degree requirements are in accordance with the latest published regulations of that association.

The Department of Art, located on the Toledo Museum of Art campus, offers courses of study leading to four undergraduate degrees and one graduate degree:

- B.A. in Art History (p. 29)
- B.A. in Visual Art (p. 30)
- B.Ed. in Art Education (p. 32)
- B.F.A. in Studio Art (p. 33)
- Minor in Art History (p. 38)
- Minor in Studio Art (p. 39)

### AED 2100 Art Education for the Pre-Primary and Primary Child

[3 credit hours]

Focuses on the supporting the young child's capacity to create, perceive and appreciate the visual arts. Orientation to materials and instructional techniques will be explored through studio and gallery instruction with a young child.

**Term Offered:** Spring, Fall

### AED 2940 Field Placements In Special Settings

[1-4 credit hours]

Independent field work which will allow the undergraduate student to develop a course of study. Optional placement in a school system or in programs for children and youth at The Toledo Museum of Art.

**Term Offered:** Spring, Fall

### AED 3130 Multi-Cultural Approaches For Art Appreciation

[3 credit hours]

An investigation of innovative methods for teaching multi-cultural understanding through art history and art appreciation. The Toledo Museum of Art's collection will be the focus for the course.

**Term Offered:** Summer, Fall

Multicultural US Diversity

### AED 3300 Crafts In Art

[3 credit hours]

This course is designed to investigate the philosophy and variety of craft processes used to make art. Topics that may be covered include fibers, metal crafts, ceramics, paper making.

**Term Offered:** Spring, Summer, Fall

### AED 3500 Innovations In Art Education

[3 credit hours]

An introduction to new directions in secondary art education. Current views of philosophy and psychology are implemented as the rationale for contemporary curricula in art education. Field experience is to be arranged.

**Term Offered:** Spring

**AED 3940 Art Field Placements In The Elementary School**

[1-4 credit hours]

Field placement in an elementary school setting allowing the undergraduate student, with art teacher approval, to develop a course of study that will satisfy the special needs of the student in art education.

**Term Offered:** Spring, Summer, Fall**AED 4140 Art Education For The Special Child**

[3 credit hours]

This course introduces and surveys a wide variety of art strategies and instructional adaptations for use with the child with physical, emotional or mental differences.

**Term Offered:** Spring, Fall**AED 4200 Computer Graphics In Art Education**

[3 credit hours]

This course examines the tools, technology and instructional applications of computer graphics in art settings. This course is especially appropriate for art educators interested in integrating art concepts using the Macintosh environment.

**Term Offered:** Spring**AED 4230 Integrating Aesthetic Experiences**

[3 credit hours]

This course will provide students in education an overview of the role of art and music in curriculum development. (Students may enroll in either art or music education sections.)

**Term Offered:** Fall**AED 4300 Media And Methods In Therapeutic Art**

[3 credit hours]

An investigation into group and individual processes as they relate to art media and methods in therapeutic art will be presented. Experiences in art media will be explored.

**Prerequisites:** AED 4560 with a minimum grade of D-**Term Offered:** Spring**AED 4450 Curriculum In Art Education**

[3 credit hours]

An exploration of discipline-based art education (DBAE) philosophy in the schools. Field placement in the Toledo Museum of Art's Youth program and the area schools will be used to implement the theoretical base.

**Term Offered:** Fall**AED 4560 Introduction To Therapeutic Art**

[3 credit hours]

This course will introduce students to therapeutic art through investigation of theories in art education and art therapy. Students will explore art media and methods in therapeutic art programming.

**Term Offered:** Fall**AED 4900 Seminar In Professional Development**

[2 credit hours]

This seminar is designed to enhance the student teacher's final preparation for employment. Professional issues, ethical behavior, interview techniques and other processes and concerns involved in entry into the profession will be examined.

**Corequisites:** AED 4930**Term Offered:** Spring, Fall**AED 4930 Student Teaching In Art**

[6-12 credit hours]

Planned field experiences in public school classrooms under the direction of experienced art teachers. Gradual acceptance of full responsibility by student teacher. A scheduled time will be included to facilitating professional practices.

**Prerequisites:** Upper Division with a score of 1**Term Offered:** Spring, Fall**AED 4950 Innovations In Art Education**

[3 credit hours]

Students are introduced to a variety of activities and materials based upon children's interests and needs, available materials, and time allotted to art activities in the self-contained classroom.

**AED 4990 Individual Study In Art Education For The Undergraduate Student**

[1-4 credit hours]

Individual study is designed to provide the student the opportunity to work individually on professional problems under the direction of the art education staff without formal class meetings.

**Term Offered:** Spring, Summer, Fall**ART 1030 Multi-Cultural Art Appreciation A Lived Game of Contemporary Art**

[3 credit hours]

This course uses a narrative framework drawn from Alternate Reality Games (ARGs) so that it is not just a venue for being told about or discussing artworks, but for experiencing them. In the course, encounters with art in virtual and real spaces are reflected on through an online journal, image collections, the creation of visual artifacts, and individualized feedback on each student's own work from peers.

Core Arts &amp; Humanities

**ART 1040 Foundations of Art Studio Technology**

[3 credit hours]

Historical and hands-on overview of human interaction with tools; from simple levers to 3D printers and CNC machines. Through studio projects, research, assigned readings and written analysis, students will integrate philosophical and practical concepts. Students will acquire skills and understanding of the tools, techniques and collaborative processes necessary to respond to a rapidly changing global economy and job market. Web-assisted course.

Core Arts &amp; Humanities

**ART 1050 Foundations of 2D Design**

[3 credit hours]

Exploration of design concepts, formal and conceptual skills, materials and color, media manipulation and study of 2-dimensional surfaces. Discussion of contemporary studio practices and critiquing skills included. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Fall

Core Arts &amp; Humanities

**ART 1060 Fundamentals of Form**

[3 credit hours]

Exploration of design concepts, formal and conceptual skills, materials and color, through media manipulation and study of three-dimensional space. Discussion of contemporary studio practices and critiquing skills included. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Fall

Core Arts &amp; Humanities

**ART 1070 Foundations of Digital Media**

[3 credit hours]

This course introduces students to the basic digital technologies of contemporary art and design. Web-assisted course.

**Term Offered:** Spring, Summer, Fall

**ART 1080 Foundations of Drawing I**

[3 credit hours]

Various approaches to drawing intended to develop skills, perception, and visual acuity. Introduction to a broad range of subject matter and a variety of graphic media. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**ART 1090 Foundations in Drawing II**

[3 credit hours]

Dimensional, perspective and volumetric drawing applied to natural, man-made forms, environment and the figure. Rendering techniques, skills and exploration of media integrated with formal composition. Web-assisted course. Humanities core course.

**Prerequisites:** ART 1080 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 1110 Art Journey**

[3 credit hours]

Distance learning course that introduces aesthetic, cultural and social interpretations of art, community and justice against the background of a "virtual" journey across the United States. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Summer

Core Arts & Humanities, Trans Mod Arts and Humanities

**ART 1990 Special Topics in Art**

[3 credit hours]

Group study in studio topics by various instructors. Web-assisted course. May be repeated under different course titles.

**Term Offered:** Spring, Summer, Fall

**ART 2010 Graphic Design I**

[3 credit hours]

This course introduces student to fundamental tools for graphic design. Image manipulation, typography, and composition are all explored through bitmap, vector, and page layout programs. Web-assisted course.

**Prerequisites:** ART 1070 with a minimum grade of D-

**Term Offered:** Spring

**ART 2020 Graphic Design II**

[3 credit hours]

This course introduces students to fundamental tools for web and interactive design. Topics from Graphic Design I (image manipulation, typography, and composition) are further developed through web-based projects exploring issues specific to digital display and mobile devices. Web-assisted course.

**Prerequisites:** ART 2010 with a minimum grade of D-

**Term Offered:** Fall

**ART 2030 Introduction to Photography**

[3 credit hours]

An introduction to photography as a fine art medium; includes digital and traditional camera operations, printing processes, presentation techniques and historic and contemporary photographic concerns. Web-assisted course..

**Term Offered:** Spring, Fall

**ART 2100 Life Drawing**

[3 credit hours]

Development of visual and technical skills necessary to represent the figure, working from live models. Presentations focused on artistic understanding of the human body in architectural space, proportion, volume, and anatomy. Web-assisted course.

**Prerequisites:** ART 1090 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 2110 Introduction to Printmaking**

[3 credit hours]

Study of basic print materials and media, including relief, monoprint, planographic and intaglio process, general print shop skills, and safety practices. The course forms the basis for further exploration. Web-assisted course.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1080 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 2200 Introduction to Sculpture**

[3 credit hours]

An exploration of the application of traditional methods of sculpture making to additive, subtractive, constructive, and replicative processes with clay, plaster, wood, stone, and metal. Formal and expressive content addressed. Web-assisted course.

**Prerequisites:** (ART 1040 with a minimum grade of D- or ART 1060 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**ART 2210 Introduction to Ceramics**

[3 credit hours]

Basic ceramic techniques explored. Introduction to hand-building, simple mold techniques and the potter's wheel. Basic glaze and clay body formulation and firing procedures. Web-assisted course.

**Term Offered:** Spring, Fall

**ART 2300 Introduction to Painting**

[3 credit hours]

Introduction and overview of painting materials and techniques; may include oil, acrylic, and watercolor media. Explores design concepts, formal and conceptual skills, and color theory. Web-assisted course.

**Prerequisites:** ART 1050 with a minimum grade of D- or ART 1090 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 2800 Visual Literacy-Data Visualization**

[3 credit hours]

This course introduces students to the concepts of visual literacy and data visualization. Students will learn to observe and analyze imagery and data. Web-assisted course.

**Term Offered:** Spring, Fall

**ART 3000 Photography**

[3 credit hours]

Varying studio topics in fine art photography and digital imaging, including Digital Photography Expanded and B&W photography. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2030 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 3010 Interactive Coding**

[3 credit hours]

Varying studio topics in interactive new media including web-art and the exploration of interface design and information dissemination. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2020 with a minimum grade of D-

**Term Offered:** Fall

**ART 3100 Printmaking**

[3 credit hours]

Studio courses focusing on one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses explore various topics and techniques. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 3110 2D Topics**

[3 credit hours]

Studio courses in any of the following disciplines: drawing, painting, or printmaking, or mixed media within separate class settings. Courses may explore various concepts and processes relating to the creation of works of art. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- or ART 2300 with a minimum grade of D-

**Term Offered:** Fall

**ART 3120 Painting**

[3 credit hours]

Studio course in one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses deal with various concepts and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2300 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ART 3200 Sculpture**

[3 credit hours]

Varying studio topics in 3D art, including the creation of works and the exploration of new models of sculpture including installation. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ART 3210 Ceramics**

[3 credit hours]

Varying topics in 3D form creation and processes, including ceramics form execution. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D- and ART 2210 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 3400 Concepts in Art, Studio and Theory**

[3 credit hours]

This course surveys advanced theories and practices of contemporary art while creating a forum for engaging visiting artists and the broader art community. The course prepares studio art majors for their degree capstone. Web-assisted course.

**Prerequisites:** ART 1050 with a minimum grade of D- and ARTH 2050 with a minimum grade of D- and ARTH 2060 with a minimum grade of D-

**Term Offered:** Fall

**ART 3850 Gallery Practices**

[3 credit hours]

Workshop covering the planning, installing, promoting, and documenting of exhibitions. Offers hands-on training and directly engages students in all aspects of UT's CVA Gallery operations. May be offered as WAC. Web-assisted course.

**Term Offered:** Spring, Fall

**ART 3900 NMDP Externship**

[3 credit hours]

Students will participate in multiple externship experiences throughout the term in print-based, and organizational/educational settings. The externship will involve pre-observational research, job shadowing, and post-observational seminar sessions. Web-assisted course.

**Term Offered:** Spring

**ART 3950 NMPD Methods and Practices**

[3 credit hours]

Survey of methods, techniques, and professional practices in new media design including: historical overview, creative and design processes, new media design environments, marketing, commerce, workflow, and collaboration. Web-assisted course. May be offered as WAC

**Prerequisites:** ART 3900 with a minimum grade of D-

**Term Offered:** Fall

**ART 3990 Special Topics in Art**

[3 credit hours]

Group study in studio topics by various instructors. Web-assisted course. May be repeated under different course titles.

**Term Offered:** Summer, Fall

**ART 4000 Advanced Photography**

[3 credit hours]

Advanced studio courses in fine art photography and digital imaging, within separate class settings that may include a variety of processes and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2030 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 4010 NM Interactivity**

[3 credit hours]

Advanced studio courses in interactive new media including web-art, multi-media, electronic publishing, and the expanded exploration of interface design and information dissemination. Web-assisted course. May be repeated under different course titles.

**Term Offered:** Spring, Fall



**ART 4020 Time, Motion, Space**

[3 credit hours]

Advanced studio topics in time-based new media, within separate class settings that may include a variety of media and topics, such as 3D modeling, rendering, digital video, and compositing. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 4100 2D Methods**

[3 credit hours]

Advanced studio course focusing on one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses explore various topics and techniques. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- and ART 2300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 4110 Advanced 2D**

[3 credit hours]

Advanced studio course in one or more of these disciplines: drawing, painting, printmaking, or mixed media within separate class settings. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- and ART 2300 with a minimum grade of D-

**Term Offered:** Spring

**ART 4120 2D Concepts**

[3 credit hours]

Advanced studio courses in one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses deal with various concepts and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- and ART 2300 with a minimum grade of D-

**Term Offered:** Summer

**ART 4200 3D Methods**

[3 credit hours]

Advanced studio courses in 3D form creation that, within separate class settings, addresses a variety of processes and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 (may be taken concurrently) with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ART 4210 3D Concepts**

[3 credit hours]

Advanced studio topics in 3D art include the creation of works and the further exploration of emerging issues in contemporary sculpture and ceramics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 4400 BFA Thesis Exhibition**

[3 credit hours]

A capstone course to be taken by BFA students during the final spring semester that creates a context for accomplishing a professional gallery exhibition with supporting materials. Web-assisted course.

**Term Offered:** Spring

**ART 4410 BA Thesis Project**

[3 credit hours]

A capstone course taken by BAVA students resulting in topic-based projects and published bodies of work relating to their area(s) of focus. Web-assisted course.

**Term Offered:** Spring

**ART 4850 Professional Practices**

[3 credit hours]

Professional skills WAC course for advanced art students. Topics include portfolios, resumes, taxes, contracts, shipping, documenting artwork, artists' statements, exhibitions/competitions, galleries, artists' talks and more. Web-assisted course.

**Term Offered:** Fall

**ART 4910 Independent Study**

[1-6 credit hours]

Individual study into special studio problems. Weekly critiques. Every semester. Time arranged. Web-assisted course. May be repeated as topic varies.

**Term Offered:** Spring, Summer, Fall

**ART 4940 Internship**

[1-4 credit hours]

Student works in professional venue related to a diversity of art fields or endeavors. Web-assisted course. May be repeated for a maximum of 8 credit hours.

**Term Offered:** Spring, Summer, Fall

**ART 4950 Design Project**

[3 credit hours]

Working with AMP students and art history faculty, students will create an exhibition or special project related to topic studied in ARTH 3950. Web-assisted course.

**Prerequisites:** ART 3900 with a minimum grade of D-

**Term Offered:** Fall

**ART 4951 NMDP Seminar**

[1 credit hour]

Analysis of the NMDP experience and creation of a written and mediated project focusing on student activities, client relationship, collaborative efforts, and final product/audience assessment. Web-assisted course.

**Prerequisites:** ART 4950 with a minimum grade of D-

**Term Offered:** Spring

**ART 4990 Special Studies**

[1-6 credit hours]

Group study in studio topics by various instructors. May be repeated when the topic varies.

**ARTH 1500 Art In History**

[3 credit hours]

Introduction to the aesthetic, cultural and social interpretation of works of art and architecture, and to the historical relationships of artists, patrons, and audiences in art's production and purposes. Web-assisted course. Humanities core course. (Not for major credit in Art History, Studio Art or Art Education).

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

**ARTH 2050 History of Western Art**

[3 credit hours]

Introduces students to major styles of western art from prehistoric to Early Renaissance. Students will learn to analyze art in terms of formal, cultural, historical, and iconographic contexts. Web-assisted course.

**Term Offered:** Spring, Fall**ARTH 2060 History of Western Art II**

[3 credit hours]

Introduces students to major styles of western art from the Renaissance through the modern era. Students will learn to analyze art in terms of formal, cultural, historical, and iconographic contexts. Web-assisted course.

**Term Offered:** Spring, Fall**ARTH 2080 History Of Modern Art**

[3 credit hours]

European and American art 1700-1940, from the Rococo through Romanticism, Impressionism, Expressionism, Cubism, Dada, and Surrealism. Web-assisted course. Humanities core course.

**Term Offered:** Spring

Core Arts &amp; Humanities

**ARTH 2100 Asian Art**

[3 credit hours]

An introduction to the architecture, painting and sculpture of India, China and Japan and their relationship to the major religions and philosophies of each culture. Web-assisted course.

Multicultural Non-US Diversity

**ARTH 2200 Ethnographic Art**

[3 credit hours]

Contextual exploration of traditional art forms in the principle cultures of the Americas, Africa and Oceania. Web-assisted course.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ARTH 2300 Introduction To Architecture**

[3 credit hours]

Study of architectural design (function, materials, structure, aesthetics and symbolism), with focus on significant historical examples from antiquity through the late 20th century. Web-assisted course.

**Term Offered:** Fall**ARTH 2550 History of Graphic Design**

[3 credit hours]

History of Graphic Design introduces students to the history and theory of graphic design from the Roman codex to the modern poster. Topics examined include: how imagery interacts with text aesthetically and visually, the logic and development of typefaces, and the relationship and importance of graphic design to social and political developments throughout history. This three-credit course addresses graphic design from Western cultures and dynamic eras. ARTH 2550 partially fulfills the curricular requirements in Humanities and Fine Arts and is an elective within the Department of Art.

Core Arts &amp; Humanities

**ARTH 2700 Women Artists In History**

[3 credit hours]

An introductory survey of women artists from the Middle Ages to the present with consideration of their position in the formation of art history's canon. Web-assisted course.

**ARTH 2980 Special Topics**

[1-3 credit hours]

Topics in art history selected by instructor; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring, Fall**ARTH 3110 Topics In Ancient Art**

[3 credit hours]

Special topics in the history of the art or architecture of the ancient world; may be repeated when topic varies. Web-assisted course. May be offered as WAC.

**Term Offered:** Summer**ARTH 3130 Topics In Medieval Art**

[3 credit hours]

Special topics in the history of western art or architecture from 200 to 1500 A.D.; may be repeated when topic varies. Web-assisted course. May be offered as WAC.

**Term Offered:** Fall**ARTH 3150 Topics In Renaissance Art**

[3 credit hours]

Special topics in the history of Renaissance art or architecture; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring, Fall**ARTH 3190 Topics In 19th-Century Art**

[3 credit hours]

Special topics in the history of 19th century art. May be repeated when topic varies. Web-assisted course.

**ARTH 3210 Topics In 20th-Century Art**

[3 credit hours]

Special topics in the history of 20th century art. May be repeated when topic varies. Web-assisted course. May be offered as WAC.

**ARTH 3230 Topics In American Art**

[3 credit hours]

Special topics in the history of American art or architecture. May be repeated when topic varies. Web-assisted course. May be offered as WAC.

**Term Offered:** Spring, Fall

**ARTH 3250 Topics In Asian Art**

[3 credit hours]

Special topics in the history of Asian art or architecture; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring, Fall

**ARTH 3290 Topics In Architecture**

[3 credit hours]

Special topics in the history of architecture; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring

**ARTH 3300 African Art**

[3 credit hours]

Study of the diversity of African art. The course will emphasize region and style with focus upon the collections of African art in the Toledo Museum of Art. Web-assisted course.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**ARTH 3350 Ancient Art Of The Americas**

[3 credit hours]

A course that focuses on the artifacts produced by the indigenous populations of the Americas before the arrival of Columbus in the New World. Web-assisted course.

**Term Offered:** Spring, Summer

Multicultural Non-US Diversity

**ARTH 3400 Contemporary Art**

[3 credit hours]

This WAC course introduces students to art of the 20th and 21st centuries, relating recent makers and movements to critical, cultural, and social issues. Web-assisted course.

**Term Offered:** Spring, Fall

**ARTH 3500 History Of Photography**

[3 credit hours]

An in-depth study of the history of photography. Web-assisted course.

**Term Offered:** Fall

**ARTH 3600 History Of New Media**

[3 credit hours]

This course explores the development of technology as an art medium with a focus on significant historical examples from the 19th through the 21st centuries. Web-assisted course.

**Term Offered:** Fall

**ARTH 3700 Art And Feminism**

[3 credit hours]

A WAC course offering study of 20th and 21st century feminist thought in relation to contemporary art makers and social issues, with consideration of performance and installation. Web-assisted course.

**Term Offered:** Spring

**ARTH 3750 Art and Disease - WAC**

[3 credit hours]

This WAC course considers how objects of material culture (film, photography, painting, sculpture, etc.) have intersected with disease while studying disease-related texts and histories of contagion (e.g., AIDS). Web-assisted course.

**Term Offered:** Spring

**ARTH 3820 Visual Construction Of Gender**

[3 credit hours]

This WAC course focuses on the ways in which images reflect and shape our understanding of gender. Students learn to analyze visual material to identify and articulate their cultural significance in relation to gender. Web-assisted course.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**ARTH 3900 Art Museum Practices**

[3 credit hours]

Overview of issues and professional practices in art museums, including curatorial responsibilities, interpretation of collections, conceptualization and design of exhibitions, development, education, marketing, and administration. Web-assisted course.

**Term Offered:** Fall

**ARTH 3920 Exhibition**

[3 credit hours]

Study of art historical topic with culmination in an exhibition in a Toledo Museum of Art gallery. Web-assisted course. May be repeated when topics varies.

**ARTH 3950 AMP**

[3 credit hours]

Study of art historical topic theme relating to Toledo Museum of Art works. Precedes ARTH 3960, Exhibition course, but may be taken independently. Web-assisted course. May be repeated when topic varies.

**Corequisites:** ART 3950

**Term Offered:** Spring

**ARTH 3960 TMA Exhibit**

[3 credit hours]

Working with faculty and museum professionals, students create a Toledo Museum of Art exhibition relating to topic studied in ARTH 3950. Web-assisted course. May be repeated when topic varies. Permission of Instructor.

**Prerequisites:** ARTH 3900 with a minimum grade of D- and ARTH 3950 with a minimum grade of D-

**Term Offered:** Fall

**ARTH 3980 Special Studies**

[3-5 credit hours]

Topics in art history selected by the instructor. Web-assisted course. May be repeated when topic varies.

**Term Offered:** Spring, Fall

**ARTH 4500 Contemporary Art And Theory**

[3 credit hours]

A WAC course offering study of 20th and 21st century critical theory in relation to contemporary art makers and social issues, with a consideration of modernist versus postmodernist eras. Web-assisted course.

**Term Offered:** Spring

**ARTH 4910 Senior Thesis I**

[2 credit hours]

Directed research in the history of art for the Senior Thesis. May only be taken with consent of instructor; see department for application form. Must be taken consecutively with ARTH 4920, Senior Thesis II. Web-assisted course.

**Term Offered:** Spring, Fall



**ARTH 4920 Senior Thesis II**

[2 credit hours]

Writing the Senior Thesis. May only be taken after successful completion of ARTH 4910, Senior Thesis I, and with instructor's consent. See Department for application form. Web-assisted course.

**Prerequisites:** ARTH 4910 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ARTH 4940 Internship**

[1-4 credit hours]

Student works in professional venue related to a diversity of art fields or endeavors. Web-assisted course. May be repeated for a maximum of 8 credit hours.

**Term Offered:** Spring, Summer, Fall

**ARTH 4950 AMP Seminar**

[1 credit hour]

Analysis of the AMP experience and creation of a written project focusing on art museum practices.

**Term Offered:** Spring

**ARTH 4980 Special Topics**

[1-5 credit hours]

Topics in art history selected by instructor; may be repeated when topic varies. Web-assisted course. May be offered as WAC.

**ARTH 4990 Independent Study In Art History**

[1-4 credit hours]

Independent Study in special problems of art history. Web-assisted course. May be repeated when topic varies.

**Term Offered:** Spring, Summer, Fall

## B.A. in Art History

Mysoon Rizk, Ph.D., Head, Art History

Thor Mednick, Ph.D., Head, Art Museum Practices concentration

Mysoon Rizk, Thor Mednick: undergraduate Advisors

The bachelor of arts program provides a foundation in the history of art and architecture through introductory course work in the styles, subjects and social history of Western and non-Western art and architecture, and through advanced course work and optional directed study in art, architecture, theory and criticism. The program makes extensive use of the collections and research facilities of the Toledo Museum of Art. Internships for credit may be arranged with the Toledo Museum of Art and with other local arts organizations.

The Art History program also offers a BA in Art History degree with concentration in Art Museum Practices (AMP) whose focus is on professional standards, practices, and procedures used in contemporary museums of art. In this unique program, students take maximum advantage of their remarkably advantageous relationship with the Toledo Museum of Art, an institution of international stature.

The curriculum leading to the B.A. in Art History requires a minimum of 33 hours of art history courses and a maximum of 45 hours, which must include the following:

Code	Title	Hours
<b>Core Courses</b>		
ARTH 2050	History of Western Art <sup>1</sup>	3
ARTH 2060	History of Western Art II <sup>1</sup>	3
Select at least one of the following courses in non-Western art:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3250	Topics In Asian Art	
ARTH 3300	African Art	
ARTH 3350	Ancient Art Of The Americas	
ARTH 2080	History Of Modern Art	3
ARTH 2300	Introduction To Architecture	3
ARTH 3400	Contemporary Art	3
Total Hours		18

<sup>1</sup> A survey of the history of Western art composed of a sequence of two three-credit hour courses. The courses may be taken in any order.

Majors with a GPA in the major of at least 3.00 may apply to pursue up to six hours in Independent Study (ARTH 4990), which requires the permission of an art history faculty member who will direct the Independent Study project.

The art history major also must take 18 hours of related courses, which must be chosen from courses acceptable for major credit in studio art, anthropology, classical civilization, literature courses in English or in a foreign or classical language (in addition to the college language requirement), basic courses in a second foreign language, history, music history or literature, philosophy or religion, theater or film history, or in other areas approved by the Advisor.

## Concentration in Art Museum Practices (AMP)

Students interested in learning about art museums or pursuing museum-based careers may elect to pursue the Concentration in Art Museum Practices (AMP), whose course work may be part of the minimum 33 credit hours needed for the B.A. in Art History.

(Students not majoring in Art History and who qualify may participate in AMP courses, but are not eligible for the concentration.) Completion of the Concentration in Art Museum Practices requires an overall GPA of at least 3.0 and a GPA in the Art History major of 3.20.

The Art Museum Practices Concentration consists of 12 hours in the major (in addition to the required courses for the B.A., for a minimum of 33 hours in Art History) and 3 hours in the related area:

As part of the Art History major a student pursuing the AMP concentration is required to take:

Code	Title	Hours
<b>Required Courses</b>		
ARTH 3900	Art Museum Practices (Fall)	3
ARTH 3950	AMP (Spring)	3
ARTH 3960	TMA Exhibit (Fall)	3

ARTH 4940	Internship	3
<b>Related Area</b>		
ART 3950	NMPD Methods and Practices	3
Total Hours		15

Below is a sample plan of study. Consult your degree audit for your program requirements.

First Term		Hours
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
ARTH 2050	History of Western Art	3
MATH 1180	Reasoning With Mathematics	3
Ars/Humanities Core (History)		3
Elementary Foreign Language I		4
Hours		17

Second Term		
ARTH 2060	History of Western Art II	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core		3
Natural Sciences Core		3
Elementary Foreign Language II		4
Hours		16

Third Term		
Select one of the following Non-Western Art courses:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	
ENGL 2710-ENGL 2800	Arts/Humanities Core (English Lit)	3
Intermediate Foreign Language I or approved culture course		3
Social Sciences Core		3
Elective		3
Hours		15

Fourth Term		
ARTH 2080	History Of Modern Art	3
ARTH 2300/2980	Introduction To Architecture	3
Intermediate Foreign Language II or approved culture course		3
Related or minor course		3
Natural Sciences Core		3
Natural Sciences core (lab)		1
<b>Special Considerations</b> <sup>1</sup>		
Hours		16

Fifth Term		
ARTH 3400	Contemporary Art (or ARTH elective)	3
ARTH Art History Elective or AMP Concentration <sup>2</sup>		3
Diversity of US		3
Select one of the following: <sup>2</sup>		3
ARTH 3950	AMP (AMP Concentration)	
Related or minor course		

Elective		3
Hours		15

Sixth Term		
ARTH 4500	Contemporary Art And Theory (or ARTH elective)	3
ARTH Art History Elective or AMP Concentration <sup>2</sup>		3
Related or minor course		3
Related or minor course		3
Elective		3
Hours		15

Seventh Term		
ARTH Art History elective or AMP Concentration <sup>2</sup>		3
Related or minor course		3
Communication Required Elective		3
Elective		3
Elective		3
Hours		15

Eighth Term		
ARTH Art History elective or AMP Concentration <sup>2</sup>		3
Related or minor course		3
Elective		3
Elective		3
Elective		3
Hours		15
Total Hours		124

<sup>1</sup> Must choose enough 3/4000 level courses in related and elective areas to meet graduation requirements. Students in the Art Museum Practices concentration have specific required electives.

<sup>2</sup> Art Museum Practices (AMP) Concentration requires ART 3950 and 13 credits from: ARTH 3900, ARTH 3950, ARTH 3960, ARTH 4940 or ARTH 4950.

## Honors in Art History

To earn the B.A. degree with honors in art history, the student must fulfill all requirements listed above. In addition, the student must maintain an overall GPA of 3.0 and a GPA of 3.5 in the major. In addition to the major requirement for 33 hours in art history courses, the honors student must complete two, two-credit courses:

Code	Title	Hours
ARTH 4910	Senior Thesis I	2
ARTH 4920	Senior Thesis II	2
Total Hours		4

The thesis must be sponsored and supervised by a member of the art history faculty and shall be approved in final form by that faculty member.

## B.A. in Visual Art

The Bachelor of Arts program in Visual Art provides the student with a solid foundation in art through introductory courses in drawing, design and the history of art, and it offers study in three areas of studio art as

well as advanced work in art history. These department offerings are deeply integrated with the core curriculum of the Colleges of Arts and Letters, and Natural Sciences and Mathematics (humanities and sciences requirements and directed electives) with the purpose of using visual art as a special instrument for cognitive growth, knowledge discovery and cultural engagement. The B.A. in Visual Art is a special kind of liberal arts degree based in studio art - students seeking a professional degree should consider the B.F.A. in Studio Art degree program. Though there is no concentration offered, students may choose from 2D studies (drawing, printmaking, painting), 3D studies (sculpture, ceramics), and/or digital and photographic art (photography, digital arts) for their advanced studio coursework.

The curriculum leading to the B.A. in Visual Art requires a minimum of 48 hours of courses in the major (50 hours maximum), which must include the following:

Code	Title	Hours
<b>Foundational Art Studies (Basic Skills Area)</b>		
ART 1050	Foundations of 2D Design	3
ART 1060	Fundamentals of Form	3
ART 1070	Foundations of Digital Media	3
ART 1080	Foundations of Drawing I	3
ART 1090	Foundations in Drawing II	3
<b>Core Art Studies</b>		
<i>Guided Electives in 2D Core Studies</i>		
Select one of the following:		3
ART 2100	Life Drawing	
ART 2110	Introduction to Printmaking	
ART 2300	Introduction to Painting	
<i>Guided Electives in 3D Core Studies</i>		
ART 2200	Introduction to Sculpture	3
or ART 2210	Introduction to Ceramics	
<i>Guided Electives in New Media Core Studies</i>		
ART 2010	Graphic Design I	3
or ART 2030	Introduction to Photography	
<i>Core Elective</i>		
Select one 2D, 3D, or NM course		3
<b>Advanced Art Studies</b> <sup>2</sup>		
Select 9 hours of ART 3/4000 level in 2D, 3D, NM Studies		9
Select 6 hours of ART 2/3/4000 level in 2D, 3D, NM Studies		6
<b>Support Courses</b>		
ART 3400	Concepts in Art, Studio and Theory <sup>2</sup>	3
ART 4410	BA Thesis Project <sup>3</sup>	3
<b>Related Course Work</b>		
ARTH 2050	History of Western Art	3
ARTH 2060	History of Western Art II	3
Select one non-western:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	
ARTH 2080	History Of Modern Art	3

or ARTH 3500	History Of Photography	
Select one of the following:		3
ARTH 3400	Contemporary Art	
ARTH 3600	History Of New Media	
ARTH 4500	Contemporary Art And Theory	
Related course <sup>4</sup>		3
Total Hours		66

<sup>1</sup> In certain circumstances, students are permitted to take up to 6 credit hours of 2000 level courses in order to fulfill core prerequisites to take selected AAS level courses. See the catalog listing of offerings and prerequisites. The AAS courses provide a consistent framework of categories within each area:

- 2D Studies is divided into 2D Methods, and 2D Concepts;
- 3D Studies is divided into 3D Methods and 3D Concepts;
- New Media Studies is divided into NM Imaging, NM Interactivity and NM Time/Motion/Space.

Within each of these area categories, specific course topics and content are offered on a rotational basis and appear in the catalog using a prefix and descriptive course subtitle. For example, in a given semester, ART 3100 2D Methods would appear as ART 3100 2D Methods: Screen-printing.

<sup>2</sup> Usually taken in the student's junior or senior year.

<sup>3</sup> A project-based capstone course usually taken during the student's final semester.

<sup>4</sup> May be selected from courses offered in art history or from the degree audit.

Note: All Foundation Art Studies courses, 2 Core Art Studies courses, and either ARTH 2050 or ARTH 2060 Art History Survey should be taken before the 3000/4000 level. BA Visual Art students select from the same pool of course offerings as the B.F.A. students, except for the capstone thesis project.

Students pursuing the B.A. degree may not elect the PS/NC option in studio art or art history courses or in related courses.

Art majors should meet every semester with their Advisor.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

First Term		Hours
AR 1000	First Year Orientation	1
ART 1050	Foundations of 2D Design	3
ART 1080	Foundations of Drawing I	3
ARTH 2050	History of Western Art	3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
Hours		16
Second Term		
ART 1060	Fundamentals of Form	3
ART 1090	Foundations in Drawing II	3
ART 1070	Foundations of Digital Media	3

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16

**Third Term**

Select one of the following 2D Core courses:		3
ART 2100	Life Drawing	
ART 2110	Introduction to Printmaking	
ART 2300	Introduction to Painting	
Select one of the following 3D Core courses:		3
ART 2200	Introduction to Sculpture	
ART 2210	Introduction to Ceramics	
ARTH 2060	History of Western Art II	3
Social Sciences Core		3
ENGL 2710-ENGL 2800 Arts/Humanities Core (English Lit)		3
Hours		15

**Fourth Term**

ART 2010	Graphic Design I	3
or ART 2030	or Introduction to Photography	
Select one of the following Core Electives:		3
ART 2100	Life Drawing	
ART 2110	Introduction to Printmaking	
ART 2300	Introduction to Painting	
ART 2010	Graphic Design I	
ART 2200	Introduction to Sculpture	
ART 2210	Introduction to Ceramics	
ARTH 2080	History Of Modern Art (or ARTH elective)	3
Social Sciences Core		3
Arts/Humanities Core (History)		3

**SPECIAL CONSIDERATIONS**<sup>1</sup>

Hours		15
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**Fifth Term**

ARTH 3500	History Of Photography (or ARTH elective)	3
ART 2xxx+	Advanced Art Studies	3
ART 2xxx+	Advanced Art Studies	3
Elementary Foreign Language I		4
Communication Required Elective		3
Hours		16

**Sixth Term**

ART 3xxx+	Advanced Art Studies	3
ART 3850	Gallery Practices ((WAC) or ART 3xxx+ Advanced Art Studies)	3
Select one of the following Non-Western Art/Non-US Diversity courses:		3
Natural Sciences Core		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	

Elementary Foreign Language II		4
Hours		16

**Seventh Term**

ART 4850	Professional Practices ((WAC) or ART 3xxx + Advanced Art Studies)	3
ART 3400	Concepts in Art, Studio and Theory	3
Intermediate Foreign Language I or approved culture course		3
ARTH 3400	Contemporary Art (WAC)	3
or ARTH 4500	or Contemporary Art And Theory	
Diversity of US		3
Hours		15

**Eighth Term**

ART 4410	BA Thesis Project	3
Elective		3
Elective		3
Elective		3
Intermediate Foreign Language II or approved culture course		3
Hours		15
Total Hours		124

<sup>1</sup> Choose enough 3/4000 level related and elective courses to meet Graduation requirements.

## Honors in B.A. in Visual Art Degree

Qualified juniors and seniors may apply to the Honors Program in studio art. The following are requirements for entrance into the Honors Program in studio art:

- Admission
  - 3.5 minimum GPA in studio art
  - 3.3 minimum cumulative GPA
  - 6 hours must be completed in the area of concentration, plus 9 hours of Foundational Art Studies
  - Instructors' permission (areas of concentration: 2D Studies, 3D Studies, New Media Studies)
- Requirements
 

A student must have completed a minimum of six hours of honors course work in studio art before beginning the thesis project. (Note: This does not include six hours of concentration needed for admission into the Honors Program.) The student must take the BA Thesis Project capstone as an honors course with additional requirements. The designation "honors" on the diploma will be given to students who receive a grade of A on the honors thesis project and maintain a minimum GPA of 3.5 in studio art.

## B.Ed. in Art Education

Jason Cox, Ph.D., Head, Art Education & graduate studies in art education, undergraduate and graduate advisor.

For details on the baccalaureate program in art education, see the Judith Herb College of Education (p. 473) section of this catalog.

## B.F.A. in Studio Art

Arturo Rodriguez, Head, Studio Art

Deborah Orloff, Coordinator for undergraduate Advisors

Brian Carpenter, Daniel Hernandez, Thomas Lingeman, Barbara Miner, Karen Roderick-Lingeman, Arturo Rodriguez, Barry Whittaker, Eric Zeigler: undergraduate Advisors.

The Bachelor of Fine Arts program, which may be entered through successful application to the studio art faculty, provides the student, who is preparing for professional commitment to the field of studio art, with a more intensive educational experience. In distinction from the B.A. program, the B.F.A. curriculum provides the student with a more in-depth experience in the major area of studio concentration, and studio electives.

Students entering the B.F.A. program may choose from the following 4 areas of studio concentration:

- 2D Studies (drawing, printmaking, painting),
- 3D Studies (sculpture, ceramics),
- Digital and Photographic Art (photography, digital arts) and
- New Media Design Practices.

Note: studio courses for the latter two concentrations use the NM prefix.

## Honors in B.F.A. in Studio Art Degree

Admission to the B.F.A. program qualifies the student for departmental honors in studio art. Honors students must maintain a minimum GPA of 3.0 in studio art and art history and are subject to annual review by an appropriate committee designated by the studio art faculty.

Students who are interested in admission to the B.F.A. program (and who have fulfilled the requirements indicated below) must apply to the Chair of the B.F.A. Committee. The student should obtain the appropriate application materials from the Chair of the B.F.A. Committee or from the departmental office. Before applying, the student must consult with their Faculty Advisor(s) about the application process, and subsequently the application form must be signed by the required number of faculty mentors (3). The student must also submit a completed application form to the office at least 5 calendar days before the application due date.

Before applying to the B.F.A. program, a student must have completed or be in the process of completing 30 semester hours of undergraduate study, which must include:

Code	Title	Hours
<b>Foundational Art Studies in Studio Art</b>		
<i>Drawing</i>		
ART 1080	Foundations of Drawing I	3
ART 1090	Foundations in Drawing II	3
<i>Design</i>		
ART 1050	Foundations of 2D Design	3
ART 1060	Fundamentals of Form	3
<i>Digital Media</i>		
ART 1070	Foundations of Digital Media	3

Select 15 hours of general education requirements and art history <sup>1</sup>	15
<b>Total Hours</b>	<b>30</b>

<sup>1</sup> ARTH 2050 or ARTH 2060 and not ARTH 1500.

At the time of application, the student must have maintained at least a 3.0 GPA in all courses in studio art and art history. The department allows adjusted GPAs to be used in reaching the 3.0 benchmark in accordance with the UT policy of recalculated GPAs ([http://www.utoledo.edu/offices/registrar/student\\_records/gpa\\_recalculation.html](http://www.utoledo.edu/offices/registrar/student_records/gpa_recalculation.html)) as well as previously adjusted incoming transfer GPAs for coursework used in the major and related fields. If required courses are still in process at the time of application, acceptance is provisional until all such courses are completed and the GPA standard is maintained. Applications are reviewed every Fall and Spring semester. If the application is denied, the student may reapply the following semester, but only one reapplication is permitted.

In order to insure that students have an adequate period of study as a B.F.A. candidate, each student must spend at least 4 semesters within the B.F.A. program enrolled in studio art courses (usually with 18 credit hours remaining in the major) and must pass a minimum of 4 B.F.A. candidate reviews: the initial review, 2 semester progress reviews, and the B.F.A. Thesis Exhibition review (note: the prerequisites for this capstone course and review are 115 credit hours overall; ART 3400; ART 3850 or ART 4850; and 21 credit hours in Advanced Art Studies). In special circumstances where the student is unable to complete 4 reviews in the time needed to complete all other program requirements, the student may petition the faculty for an exception. B.F.A. students must present work for review and attend every B.F.A. review while he or she is in the program. Failure to pass the capstone review, or failure to pass 2 consecutive progress reviews, will eliminate the student from the program. Once eliminated from the program, the student may continue studies in the B.A. in Visual Art degree program but may not reapply to the B.F.A. program.

Students pursuing the B.F.A. degree may not elect the PS/NC option in studio art or art history courses or in related courses. Art majors pursuing the B.F.A. degree must meet every semester with their Advisors who are assigned by the B.F.A. committee.

The curriculum leading to the B.F.A. in studio art requires a minimum of 63 hours of courses in the major (66 hours maximum), which must include the following:

Code	Title	Hours
<b>Foundational Art Studies (Basic Skills Area)</b>		
ART 1050	Foundations of 2D Design	3
ART 1060	Fundamentals of Form	3
ART 1070	Foundations of Digital Media	3
ART 1080	Foundations of Drawing I	3
ART 1090	Foundations in Drawing II	3
<b>Core Art Studies</b>		
Select one of the following concentrations:		15
<i>2D Studies Concentration</i>		
2D Core Studies:		
ART 2110	Introduction to Printmaking	



ART 2100	Life Drawing
ART 2300	Introduction to Painting
<b>3D Core Studies:</b>	
ART 2200	Introduction to Sculpture or ART 2210 Introduction to Ceramics
<b>NM Core Studies:</b>	
ART 2010	Graphic Design I or ART 2030 Introduction to Photography
<b>3D Studies Concentration</b>	
<b>2D Core Studies:</b>	
<b>Select two of the following:</b>	
ART 2110	Introduction to Printmaking
ART 2100	Life Drawing
ART 2300	Introduction to Painting
<b>3D Core Studies:</b>	
ART 2200	Introduction to Sculpture
ART 2210	Introduction to Ceramics
<b>NM Core Studies:</b>	
ART 2010	Graphic Design I or ART 2030 Introduction to Photography
<b>Digital and Photographic Art Concentration (NM Prefix)</b>	
<b>2D Core Studies:</b>	
<b>Select one of the following:</b>	
ART 2110	Introduction to Printmaking
ART 2100	Life Drawing
ART 2300	Introduction to Painting
<b>3D Core Studies:</b>	
ART 2200	Introduction to Sculpture or ART 2210 Introduction to Ceramics
<b>NM Core Studies:</b>	
ART 2010	Graphic Design I
ART 2020	Graphic Design II
ART 2030	Introduction to Photography
<b>NMDP Concentration</b>	
ART 2010	Graphic Design I
ART 2020	Graphic Design II
ART 2030	Introduction to Photography
<b>Select 6 hours from ArtComm Tech Core</b>	
<b>Select 6 hours of technical courses. Course selections include, but are not limited to the following:</b> <sup>1</sup>	
ART 3010	Interactive Coding
ART 4010	NM Interactivity
ART 4020	Time, Motion, Space
FILM 2320	Digital Cinema Production I - WAC
MUS 2270	Recording Techniques
MUS 2260	Electronic Music
COMM 2160	Single Camera Production
COMM 2000	Mass Communication And Society (also Gen Ed)
COMM 2150	Digital Publishing
COMM 3340	Visual Communication I

CMPT 1500	Flash Web Animation
CMPT 2030	C Family Programming
CMPT 2410	Adobe InDesign Desktop Publishing
CMPT 2620	Web Site Maintenance
<b>Advanced Art Studies</b>	
<b>Select 18 hours in area of concentration:</b> <sup>2</sup>	
<b>2D Studies:</b>	
ART 3100 & ART 4100	Printmaking and 2D Methods
ART 3110 & ART 4110	2D Topics and Advanced 2D
ART 3120	Painting
<b>3D Studies:</b>	
ART 3200 & ART 4200	Sculpture and 3D Methods
ART 3210 & ART 4210	Ceramics and 3D Concepts
<b>Digital and Photographic Art:</b>	
ART 3000 & ART 4000	Photography and Advanced Photography
ART 3010 & ART 4010	Interactive Coding and NM Interactivity
ART 4020	Time, Motion, Space
<b>New Media Design Practices:</b>	
<b>Select 12 hours from the following:</b>	
ART 3000	Photography (any topics)
ART 3010	Interactive Coding (any topics)
ART 4000	Advanced Photography (any topics)
ART 4010	NM Interactivity (any topics)
ART 4020	Time, Motion, Space (any topics)
<b>Select 6 hours of ART or ArtComm electives</b>	
<b>Select additional studies at ART 2000/4000 level outside the concentration – 6 credit hours total for 2D, 3D, and Digital and Photographic Art only</b> <sup>3</sup>	
<b>Support Courses (2D, 3D, and Digital and Photographic Art Only)</b>	
ART 3400	Concepts in Art, Studio and Theory <sup>4</sup>
ART 4400	BFA Thesis Exhibition <sup>5</sup>
ART 4850	Professional Practices <sup>4</sup>
<b>Practicum and Professional Practices Courses</b>	
<b>Select the following (New Media Design Practices Only)</b>	
ART 3850	Gallery Practices or ART 4850 Professional Practices or ART 3400 Concepts in Art, Studio and Theory
ART 3900	NMDP Externship
ART 3950	NMPD Methods and Practices
ART 4950	Design Project
ART 4951	NMDP Seminar
<b>Related Course Work</b>	
<b>Select one of the following concentrations:</b>	
<b>2D and 3D Studies Concentrations</b>	
ARTH 2050	History of Western Art

ARTH 2060	History of Western Art II
ARTH Non-Western	
ARTH 2080	History Of Modern Art
ARTH 3400	Contemporary Art
or ARTH 3500 History Of Photography	
or ARTH 3600 History Of New Media	
or ARTH 4500 Contemporary Art And Theory	
Related course <sup>6</sup>	
<i>Digital and Photographic Art Concentration</i>	
ARTH 2050	History of Western Art
ARTH 2060	History of Western Art II
ARTH Non-Western	
ARTH 3600	History Of New Media
ARTH 3400	Contemporary Art
or ARTH 3500 History Of Photography	
or ARTH 4500 Contemporary Art And Theory	
Related course <sup>6</sup>	
<i>New Media Design Practices</i>	
ARTH 2050	History of Western Art
ARTH 2060	History of Western Art II
ARTH Non-Western	
ARTH 2080	History Of Modern Art
or ARTH 298 Special Topics	
or ARTH 3500 History Of Photography	
ARTH 3400	Contemporary Art
or ARTH 3500 History Of Photography	
or ARTH 3600 History Of New Media	
or ARTH 4500 Contemporary Art And Theory	
or COMM 2000 Mass Communication And Society	
ARTH 3950	AMP
Total Hours	

81-94

<sup>1</sup> Students will work with their advisor to choose 6 hours of technical courses from departments across the College of Communication and the Arts as well as CMPT courses.

<sup>2</sup> The AAS courses provide a consistent framework of categories within each area of concentration:

- 2D Studies,
- 3D Studies,
- Digital and Photographic Art and
- New Media Design Practices.

Within each of these areas, specific course topics and content are offered on a rotational basis and appear in the catalog using a prefix and descriptive course subtitle. For example, in a given semester, ART 3100 2D Methods would appear as ART 3100 2D Methods: Screen-printing. Students can retake a given course category to fulfill their AAS credit requirements as long as it is offered with a different topic title.

<sup>3</sup> Students are permitted to take 2000 level courses in circumstances where they need to fulfill core prerequisites in order to take selected AAS level courses. See the catalog listing of offerings and prerequisites.

<sup>4</sup> Usually taken in the student's junior or senior year.

<sup>5</sup> An exhibition-based capstone course usually taken during the student's final year.

<sup>6</sup> May be selected from courses offered in art history or from the degree audit.

*Below are sample plans of study. Consult your degree audit for your program requirements.*

- 2D Studies Concentration (p. )
- 3D Studies Concentration (p. )
- Digital and Photographic Art Concentration (p. )
- New Media Design Practices Concentration (p. )

## 2D Studies Concentration

First Term		Hours
AR 1000	First Year Orientation	1
ART 1050	Foundations of 2D Design	3
ART 1080	Foundations of Drawing I	3
ARTH 2050	History of Western Art	3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
Hours		16

Second Term		Hours
ART 1060	Fundamentals of Form	3
ART 1070	Foundations of Digital Media	3
ART 1090	Foundations in Drawing II	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16

Third Term		Hours
ART 2100	Life Drawing	3
ART 2110	Introduction to Printmaking	3
ART 2200	Introduction to Sculpture	3
or ART 2210 or Introduction to Ceramics		
ARTH 2060	History of Western Art II	3
ENGL 2710-ENGL 2800	Arts/Humanities Core (English Lit)	3
Hours		15

Fourth Term		Hours
ART 2300	Introduction to Painting	3
ART 2010	Graphic Design I	3
or ART 2030 or Introduction to Photography		
ARTH 2080	History Of Modern Art (or ARTH Elective)	3
Natural Sciences Core		3
Social Sciences Core		3
<b>SPECIAL CONSIDERATIONS <sup>1</sup></b>		
Hours		15

Fifth Term		Hours
ART 3xxx+	Advanced Art Studies	3

ART 3xxx+	Advanced Art Studies	3
ARTH 3500	History Of Photography (or ARTH elective)	3
Arts/Humanities Core (History)		3
Communication Required Elective		3
Hours		15

**Sixth Term**

ART 3xxx+	Advanced Art Studies	3
ART 3xxx+	Advanced Art Studies	3
ART 3850	Gallery Practices ((WAC) or ART 3xxx+ Advanced Art Studies)	3
Select one of the following Non-Western Art/Non-US Diversity courses:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	
Social Sciences Core		3
Hours		15

**Seventh Term**

ART 3xxx+	Advanced Art Studies	3
ART 4850	Professional Practices ((WAC) or ART 3xxx + Advanced Art Studies)	3
ART 3400	Concepts in Art, Studio and Theory	3
Select one of the following Contemporary Art History courses:		3
ARTH 3400	Contemporary Art	
ARTH 4500	Contemporary Art And Theory	
ARTH 3500	History Of Photography	
Elective		3
Hours		15

**Eighth Term**

ART 3xxx+	Advanced Art Studies	3
ART 3xxx+	Advanced Art Studies	3
ART 4400	BFA Thesis Exhibition	3
Diversity of US		3
Elective		3
Elective		2
Hours		17
Total Hours		124

<sup>1</sup> Admission in program by application, portfolio, 3.0 GPA.

## 3D Studies Concentration

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ART 1050	Foundations of 2D Design	3
ART 1080	Foundations of Drawing I	3
ARTH 2050	History of Western Art	3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
Hours		16

**Second Term**

ART 1060	Fundamentals of Form	3
ART 1070	Foundations of Digital Media	3
ART 1090	Foundations in Drawing II	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16

**Third Term**

ART 2200	Introduction to Sculpture	3
ART 2210	Introduction to Ceramics	3
Select one of the following 2D-Core 1 courses:		3
ART 2100	Life Drawing	
ART 2110	Introduction to Printmaking	
ART 2300	Introduction to Painting	
ARTH 2060	History of Western Art II	3
ENGL 2710-ENGL 2800 Arts/Humanities Core (English Lit)		3
Hours		15

**Fourth Term**

Select one of the following 2D Core 2 courses:		3
ART 2100	Life Drawing	
ART 2110	Introduction to Printmaking	
ART 2300	Introduction to Painting	
Select one of the following NM Core courses:		3
ART 2010	Graphic Design I	
ART 2020	Graphic Design II	
ART 2030	Introduction to Photography	
ARTH 2080	History Of Modern Art (or ARTH elective)	3
Natural Sciences Core		3
Social Sciences Core		3

**SPECIAL CONSIDERATIONS <sup>1</sup>**

Hours		15
<b>Fifth Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART 3xxx+	Advanced Art Studies	3
ARTH 3500	History Of Photography (or ARTH elective)	3
Communication Required Elective		3
Arts/Humanities Core (History)		3
Hours		15

**Sixth Term**

ART 3xxx+	Advanced Art Studies	3
ART 3xxx+	Advanced Art Studies	3
ART 3850	Gallery Practices ((WAC) or ART 3xxx+ Advanced Art Studies)	3
Select one of the following Non-Western Art/Non-US Diversity courses:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	



Social Sciences Core	3
Hours	15
<b>Seventh Term</b>	
ART 3xxx+ Advanced Art Studies	3
ART 3400 Concepts in Art, Studio and Theory	3
ART 4850 Professional Practices ((WAC) or ART 3xxx Advanced Art Studies)	3
Select one of the following Contemporary Art History courses:	3
ARTH 3400 Contemporary Art	
ARTH 4500 Contemporary Art And Theory	
ARTH 3500 History Of Photography	
Elective	3
Hours	15
<b>Eighth Term</b>	
ART 3xxx+ Advanced Art Studies	3
ART 3xxx+ Advanced Art Studies	3
ART 4400 BFA Thesis Exhibition	3
Diversity of US	3
Elective	3
Elective	2
Hours	17
Total Hours	124

<sup>1</sup> Admission in program by application, portfolio, 3.0 GPA.

## Digital and Photographic Art Concentration

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ART 1050	Foundations of 2D Design	3
ART 1080	Foundations of Drawing I	3
ARTH 2050	History of Western Art	3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
Hours		16
<b>Second Term</b>		
ART 1060	Fundamentals of Form	3
ART 1070	Foundations of Digital Media	3
ART 1090	Foundations in Drawing II	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16
<b>Third Term</b>		
ART 2030	Introduction to Photography	3
Select one of the following 2D-Core courses:		3
ART 2100	Life Drawing	

ART 2110	Introduction to Printmaking	
ART 2300	Introduction to Painting	
Select one of the following 3D-Core courses:		3
ART 2200	Introduction to Sculpture	
ART 2210	Introduction to Ceramics	
ARTH 2060	History of Western Art II	3
ENGL 2710-ENGL 2800	Arts/Humanities Core (English Lit)	3
Hours		15

<b>Fourth Term</b>		
ART 2010	Graphic Design I	3
ART 3xxx+	Advanced Art Studies	3
ARTH 2080	History Of Modern Art (or ARTH elective)	3
Natural Sciences Core		3
Social Sciences Core		3

<b>SPECIAL CONSIDERATIONS <sup>1</sup></b>		
Hours		15

<b>Fifth Term</b>		
ART 2020	Graphic Design II	3
ART 3xxx+	Advanced Art Studies	3
ARTH 3500	History Of Photography (or ARTH elective)	3
Arts/Humanities Core (History)		3
Communication Required Elective		3
Hours		15

<b>Sixth Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART 3xxx+	Advanced Art Studies	3
ART 3850	Gallery Practices ((WAC) or ART 3xxx+ Advanced Art Studies)	3

Select one of the following Non-Western Art/Non-US Diversity courses:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	
Social Sciences Core		3
Hours		15

<b>Seventh Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART 4850	Professional Practices ((WAC) or ART 3xxx + Advanced Art Studies)	3
ART 3400	Concepts in Art, Studio and Theory	3
Select one of the following Contemporary Art History courses:		3
ARTH 3400	Contemporary Art	
ARTH 4500	Contemporary Art And Theory	
ARTH 3500	History Of Photography	
Elective		3
Hours		15

<b>Eighth Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART 3xxx+	Advanced Art Studies	3
ART 4400	BFA Thesis Exhibition	3

Diversity of US	3
Elective	3
Elective	2
Hours	17
Total Hours	124

<sup>1</sup> Admission in program by application, portfolio, 3.0 GPA.

## New Media Design Practices Concentration

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ART 1050	Foundations of 2D Design	3
ART 1070	Foundations of Digital Media	3
ARTH 2050	History of Western Art	3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
Hours		16
<b>Second Term</b>		
ART 1060	Fundamentals of Form	3
ART 1080	Foundations of Drawing I	3
ART 2010	Graphic Design I	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16
<b>Third Term</b>		
ART 2020	Graphic Design II	3
ART 2030	Introduction to Photography	3
ART 1090	Foundations in Drawing II	3
ARTH 2060	History of Western Art II	3
ENGL 2710-ENGL 2800 Arts/Humanities Core (English Lit)		3
Hours		15
<b>Fourth Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART, COMM, FILM ... Technical Guided Electives Core		3
ARTH 2080	History Of Modern Art	3
Natural Sciences Core		3
Social Sciences Core		3
<b>SPECIAL CONSIDERATIONS <sup>1</sup></b>		
Hours		15
<b>Fifth Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART 3950	NMPD Methods and Practices	3
Select one of the following Non-Western Art/Non-US Diversity courses:		3
ARTH 2100	Asian Art	

ARTH 2200	Ethnographic Art	
ARTH 3300	African Art	
ARTH 3350	Ancient Art Of The Americas	
Social Sciences Core		3
Arts/Humanities Core (History)		3
Hours		15
<b>Sixth Term</b>		
ART 3900	NMDP Externship	3
ART 3xxx+	Advanced Art Studies	3
ART 3850	Gallery Practices	3
ARTH 3950	AMP	3
Communication Required Elective		3
Hours		15
<b>Seventh Term</b>		
ART 3xxx+	Advanced Art Studies	3
ART 4950	Design Project	3
ARTH 3400	Contemporary Art	3
or ARTH 3600/ or History Of New Media		
COMM 2000		
ART, COMM, FILM ... Technical Guided Electives Core		3
Elective		3
Hours		15
<b>Eighth Term</b>		
ART 4951	NMDP Seminar	1
ART, COMM, FILM ... Technical Guided Electives Core		3
ART, COMM, FILM ... Technical Guided Electives Core		3
Diversity of US		3
Elective		3
Elective		4
Hours		17
Total Hours		124

<sup>1</sup> Admission in program by application, portfolio, 3.0 GPA.

## Minor in Art History

Students may minor in art history through the declaration of the minor with the College of Arts and Letters and the completion of a minimum of 21 hours of art history courses, which must include the following:

Code	Title	Hours
<b>Core Courses</b>		
ARTH 2050	History of Western Art <sup>1</sup>	3
ARTH 2060	History of Western Art II	3
Select at least one of the following courses in non-Western art:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3250	Topics In Asian Art	
ARTH 3300	African Art	
ARTH 3350	Ancient Art Of The Americas	

Select remaining hours from any courses offered by the art history program <sup>2</sup>	12
<b>Total Hours</b>	<b>21</b>

- <sup>1</sup> Survey history of Western art courses may be taken in any order.
- <sup>2</sup> The remaining hours for the minor may be selected from any courses offered by the art history program. Minors may elect to pursue up to three hours in Independent Study (ARTH 4990). Independent Study requires the permission of an art history faculty member who will direct the Independent Study project.

## Minor in Studio Art

The minor in studio art provides a general introduction to the use of tools and materials and an understanding of traditional and experimental media for the production of fine art. The minor in studio art is further designed to enrich the student's life by increasing her/his awareness of the world by developing skills of visual perception and communication. Students electing to minor in studio art must complete 21 hours of course work, including nine hours of Foundational Art Studies (see below), which provide the basic technical and theoretical skills essential for a fundamental understanding of the discipline as well as a rigorous preparation for the advanced/upper division courses.

Code	Title	Hours
<b>Foundational Art Studies</b>		
Select 3 of the following:		9
ART 1050	Foundations of 2D Design	
ART 1060	Fundamentals of Form	
ART 1070	Foundations of Digital Media	
ART 1080	Foundations of Drawing I	
<b>Elective Courses</b>		
Upon completion of the required foundations courses, students must take 12 hours distributed in any of the following subject areas: 2D Studies (drawing, printmaking, painting), 3D Studies (sculpture, ceramics), New Media Studies (photography, digital arts), with no more than nine hours in one studio area. A minimum of six hours must be in Advanced Art Studies courses at the 3000 level and above.		12
<i>Recommended Courses</i>		
It is strongly recommended that the following art history survey courses be taken:		
ARTH 2050	History of Western Art	
	or ARTH 2060 History of Western Art II	
One course in the history of non-Western art		
One additional course in the history of Western art		
<b>Total Hours</b>		<b>21</b>

Students must maintain a minimum GPA of 2.0 for all course work in the minor (in keeping with College of Arts and Letters standards). Candidates for the minor in studio art should have their course work verified and approved by an Advisor in studio art or the Chair of the department prior to making formal application for graduation.

## Department of Communication

W. Benjamin Myers, Chair  
Lisa Bollman, Advisor

The Department of Communication has offices and studio facilities in Rocket Hall. Communication offers courses of study leading to two undergraduate degrees, the Bachelor of Arts in Communication and the Bachelor of Arts in Media Communication. Students opting for a degree in Communication will study subjects related to public relations and organizational communication. Students selecting study in Media Communication will focus on journalism and broadcast/telecast/webcast video production. The department has equipment and state-of-the-art video production facilities in Rocket Hall as well as Savage Arena and produces event coverage for the university. Classrooms and computer labs are located near faculty offices in Rocket Hall.

## Degrees Offered

- B.A. in Communication Studies (p. 43)
- B.A. in Media Communication (p. 45)
- General Communication Minor (p. 46)

### COMM 1010 Comm Principles And Practices

[3 credit hours]

An introductory course that provides instruction and practice in human communication including interpersonal communication, group discussion, public speaking and mass communication. (not for major credit)

**Term Offered:** Spring, Summer, Fall  
Core Arts & Humanities

### COMM 2000 Mass Communication And Society

[3 credit hours]

Overview of the media of mass communication, which considers social, economic and intellectual impact on American culture and democracy. Exploration of various mass media and their methods of shaping public perceptions.

**Term Offered:** Spring, Summer, Fall  
Core Arts & Humanities

### COMM 2100 News Writing for Media

[4 credit hours]

Theory and practice of news writing as journalistic discourse. Emphasis on news style and values, story structure, types of stories. Ethics, taste and rudiments of law integrated throughout.

**Term Offered:** Spring, Summer, Fall

### COMM 2120 Reporting

[3 credit hours]

Introduction to writing for publication in the student newspaper, developing skills in interviewing, listening, using primary sources, thinking critically, and mastering electronic data-collection methods.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Fall

**COMM 2130 Media Writing 1**

[3 credit hours]

Through various assigned readings, discussions, reporting and writing, students will become fully immersed in the media writing process. Students will develop story ideas, interview sources and write publication-ready news articles. Emphasis will be placed on journalistic ethics, credibility, accuracy and news judgment.

**Term Offered:** Spring, Summer, Fall**COMM 2150 Digital Publishing**

[3 credit hours]

Introduction to Writing, Editing, Design approach in editing newspapers, newsletters, electronic and similar publications. Fundamentals of desktop publishing, copy editing, headline writing, typography, layout, design, use of photos, illustrations.

**Term Offered:** Spring**COMM 2160 Single Camera Production**

[3 credit hours]

This is a laboratory/lecture course designed to introduce the student to the terminology and single camera production procedures used in field television production and serve as a foundation for story-telling through this medium.

**Term Offered:** Spring, Summer, Fall**COMM 2180 Media Producing and Performance**

[3 credit hours]

The class is designed to give students experience being in front of the camera through a variety of assignments that will give them practice at interview skills, reading off the Teleprompter, and adlibbing. Also, students will gain experience producing and coordinating productions.

**Term Offered:** Spring, Fall**COMM 2210 Audio Production I**

[3 credit hours]

The class is designed to introduce students to studio recording and editing sound. Students will produce commercials, public service announcements, and demos for announcing jobs. Audio Production I is also designed to be a pre-requisite class for Audio Production II.

**Term Offered:** Spring, Fall**COMM 2220 Television Studio Production**

[3 credit hours]

Students will work together to produce various types of live studio productions and will be introduced to the process of remote video acquisition and editing for use in living productions.

**Prerequisites:** COMM 2160 with a minimum grade of D-**Term Offered:** Spring, Fall**COMM 2300 Photojournalism**

[3 credit hours]

An applied study of the conceptual, ethical, philosophical, historical and commercial aspects of photojournalism.

**Term Offered:** Spring, Fall**COMM 2400 Information Analysis**

[3 credit hours]

Introductory course for all Communication majors. Identification of primary sources that match information needs, gaining access to these sources, retrieving information and using it for responsible media decision making.

**Term Offered:** Spring, Summer, Fall**COMM 2500 Social Media I**

[3 credit hours]

This course covers the practice and use of social media in communicating across the fields of media and business and its effect on society. The topics of Social Media: marketing, advertising and networking will be discussed and students will produce projects using emerging/current social media technology.

**Term Offered:** Spring, Summer, Fall**COMM 2600 Public Presentations**

[3 credit hours]

Applies the principles of informative and persuasive communication in the construction, delivery, and critique of public presentations.

**Term Offered:** Spring, Summer, Fall**COMM 2810 Nonverbal Communication**

[3 credit hours]

Survey, analysis and application of research in nonverbal communication variables and phenomena.

**Term Offered:** Spring, Summer, Fall**COMM 2820 Group Communication**

[3 credit hours]

Theory and practice of group communication variables and processes with an emphasis on problem-solving approaches.

**Term Offered:** Spring, Summer, Fall**COMM 2830 Organizational Communication**

[3 credit hours]

This course examines the principles and theories of organizational communication. Particular attention will be devoted to how communication skills, culture, systems, ethics, new technology and power all affect, create and define organizations.

**Term Offered:** Spring, Fall**COMM 2840 Interpersonal Communication**

[3 credit hours]

Review and application of interpersonal communication theory and research in a variety of one-to-one social contexts.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities

**COMM 2870 Communication Theory**

[3 credit hours]

An introduction to human communication theory and research directed toward understanding and applying theory and research in various communication contexts and for various communication outcomes.

**Term Offered:** Spring, Summer, Fall**COMM 2890 Crisis & Conflict in Organizations**

[3 credit hours]

An examination of communication variables that may reduce the potential for workplace conflict. Students survey theoretical models, conduct interviews with professionals and write analyses of case studies of successful conflict management.

**Term Offered:** Summer, Fall**COMM 2990 Independent Study**

[1-4 credit hours]

A freshman/sophomore seminar in which the student pursues a problem of special interest in communication. A prospectus must be submitted to the faculty member with whom the student will work.

**Term Offered:** Spring, Summer, Fall

**COMM 3120 Media Writing II**

[3 credit hours]

This course will focus on identifying, developing and writing online articles about community and business issues. Students also will become versed in major state, local and national news.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring

**COMM 3150 Feature Writing**

[3 credit hours]

Theory and practice in writing in various kinds of discourse for newspapers, magazines and electronic publications and writing for specialized audiences. Developing context, analysis, background and appropriate standards of evidence for publication.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3180 Mass Communication Law**

[3 credit hours]

Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3210 Audio Production 2**

[3 credit hours]

This advanced course is designed to further enhance students' proficiency of audio and program production skills through project based learning.

**Prerequisites:** COMM 2210 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3260 Live Sports Production**

[3 credit hours]

This is a laboratory/cooperative course where students will work in collaboration with other university departments and clients with the result of producing live video content for streaming on ESPN3 and display in various venues such as the Glass Bowl, Savage Arena, scoreboards and in-house projection systems. All production work will be completed outside the classroom, and students will need to be available for productions during hours outside of standard class meeting times.

**Prerequisites:** COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3270 Multimedia Newswriting**

[3 credit hours]

Training in the skills required in the preparation, writing and editing of both radio and television news.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Summer, Fall

**COMM 3290 Content Management**

[3 credit hours]

The student will be able to proficiently utilize new media and critically analyze design and content issues in mediated communication. The goal of this course is media design and content literacy.

**Prerequisites:** COMM 2000 with a minimum grade of D- or COMM 2500 with a minimum grade of D-

**COMM 3340 Visual Communication I**

[3 credit hours]

Application of the principles of visual communication to informing, persuading, and entertaining the public through digital photography, layout & design in print, Web design, and a multimedia presentation.

**Term Offered:** Spring, Summer, Fall

**COMM 3350 Graphic Communication 1**

[3 credit hours]

To develop the ability to create successful mediated messages through the use of new technologies and software from concept to the end product. The student will be able to proficiently utilize the Internet, and critically analyze design issues in mediated communication. The students will also develop a foundation for using tools to produce graphics for television and online. This course is the prerequisite for Graphic Communication 2.

**Term Offered:** Spring, Fall

**COMM 3500 Social Media II**

[3 credit hours]

This advanced course covers the practice and use of social media in communicating across the fields of media and business and its effect on society. The student will develop a relationship with a client and develop a brand that will be marketed through social and digital media. Social Media 1 is a prerequisite for this course.

**Prerequisites:** COMM 2500 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 3610 Speech Writing**

[3 credit hours]

Applies principles of effective public relations communication to the practice of developing speeches for others and composing publicity materials.

**Term Offered:** Spring, Fall

**COMM 3720 Public Relations Theory**

[3 credit hours]

Public relations principles, planning and methods in business, government, educational institutions and other organizations. Examination of law, ethics, professionalism, history, theory, strategies and practices of the profession.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 3750 Cross Cultural Communication in Public Relations**

[3 credit hours]

Intercultural Communication examines the basic elements of interpersonal communication and culture as the two relate to one another in a public relations environment. Emphasis is given to the influence of culture on the interpretation of the communication act and to the communication skills that enhance cross-cultural communication while practicing public relations.

**COMM 3760 Health Communication**

[3 credit hours]

Review and application of health communication theory, research, and practice in a variety of contexts.



**COMM 3820 Persuasion Theory**

[3 credit hours]

Examination of the theory and practices used in persuasive communication in public presentations, advertising, sales and political campaigns.

**Term Offered:** Spring, Summer, Fall

**COMM 3830 Basic Principles Of Debate And Forensics**

[3 credit hours]

Theory and practice in reasoned discourse; analysis, evidence, logical forms and fallacies. Problems and procedures in administering a forensic program, teaching and directing debate and individual speaking events.

**Term Offered:** Spring

**COMM 3850 Research Methods**

[3 credit hours]

Introduction to qualitative and quantitative methods in communication research. Focus on evaluating and interpreting reports in various forms of communication.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**COMM 3870 Communication Theory**

[3 credit hours]

A review of human communication theory and research directed toward understanding and applying theory and research in various communication contexts and for various communication outcomes.

**Term Offered:** Spring, Summer, Fall

**COMM 3880 Professional Business Communication**

[3 credit hours]

Developing oral and written business communication skills through practice in public speaking, interviewing, resume writing, and communication in various formats.

**Term Offered:** Spring, Summer, Fall

**COMM 4040 Storytelling in Public and Private Spaces**

[3 credit hours]

Students will apply traditional storytelling techniques to empower sources to tell anecdotes during interviews, to tell their own true stories, to help readers understand the meaning of news as well as life's challenges. Via human-interest articles, writers will show rather than tell things.

**Term Offered:** Spring

**COMM 4090 Mass Communication Ethics**

[3 credit hours]

Investigation of problems and practical application of classical theories as well as current strategies to confront ethical crises in mass-media settings.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**Term Offered:** Fall

**COMM 4100 Multimedia Journalism**

[4 credit hours]

Developing a thorough understanding of researching, writing, and presenting television/online news. Includes studio and remote productions.

**Prerequisites:** COMM 2220 with a minimum grade of D- or COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 4110 High School Publications**

[3 credit hours]

Problems involved in the production of high school newspapers and yearbooks including approaches to design, advertising, content, news, editorials, administration and business management.

**Term Offered:** Fall

**COMM 4220 Advanced Television Production**

[4 credit hours]

Advanced principles and aesthetic considerations in the production of various television programs. Includes working with remote equipment and digital editing.

**Prerequisites:** COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 4250 Mass Communication History**

[3 credit hours]

Historical consideration of the media from colonial era to the present, with special emphasis on learning through problem-solving and critical thinking about the role of mass communication as a force in shaping national identity.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**Term Offered:** Spring

**COMM 4260 Communication in Non-Profit Organizations**

[3 credit hours]

COMM 4260 COMMUNICATING IN NON-PROFIT ORGANIZATIONS.

[3 hours] This course examines the communication strategies Non-Profit Organizations use to publicize their charitable goals to potential donors and how they describe their progress to governmental watchdog committees.

**COMM 4270 Special Event Planning**

[3 credit hours]

Examines the practices, and procedures associated with identification, analysis, planning, evaluation and control of the operational, fiscal, and legal risks of event planning.

**Term Offered:** Spring, Summer, Fall

**COMM 4330 Integrated Media**

[3 credit hours]

The goal of this course is media design literacy. Students will develop the ability to create successful mediate messages through various mediums and new technologies.

**Prerequisites:** COMM 2630 with a minimum grade of D- or COMM 3340 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 4340 Visual Communication II**

[3 credit hours]

Advanced theory, application, and interpretation of visual communication and rhetoric to inform, persuade and entertain the public through digital photography, layout and design in print, Web design, and digital multimedia.

**Prerequisites:** COMM 2630 with a minimum grade of D- or COMM 3340 with a minimum grade of D-

**Term Offered:** Spring



**COMM 4350 Graphic Communication 2**

[3 credit hours]

To develop the ability to create successful mediated messages through the use of new technologies and software from concept to the end product. The student will be able to proficiently utilize new technology, and critically analyze design issues in mediated communication. The goal of this course is advanced visual design literacy. The students will also develop a thorough understanding for using tools to produce graphics for television and online.

**Prerequisites:** COMM 3350 with a minimum grade of D

**COMM 4630 Public Relations Practices**

[3 credit hours]

Examination of practices, techniques, tools and strategies used in public relations. Research theory and techniques; strategic planning and management of public relations programs. In-depth study of one detailed project.

**Prerequisites:** COMM 3720 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 4640 Public Relations Case Studies**

[3 credit hours]

Analysis of successful and unsuccessful public relations efforts and programs. Emphasis on the theoretical and ethical foundations of successful public relations programming.

**Prerequisites:** COMM 3720 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 4820 Family Communication**

[3 credit hours]

Explores variables and processes of family communication emphasizing theory, definitions of family, roles & rules, conflict, intimacy, societal influences, and effects on the individual and the family as a whole.

**Term Offered:** Spring, Summer

**COMM 4830 Gender, Culture & Communication**

[3 credit hours]

Cross-listed as WGST-4350. Explores how gender and culture simultaneously shape and are shaped by communication through relationships, institutions, and society. WAC class.

**Term Offered:** Summer, Fall

**COMM 4900 Communication Seminar**

[3-4 credit hours]

An in-depth examination of a communication topic, problem or media event. May be writing intensive.

**Term Offered:** Spring, Summer, Fall

**COMM 4910 Communication Studies Capstone**

[3 credit hours]

Application of knowledge and skills through a project or research investigation related to an area of communication.

**Prerequisites:** COMM 2000 with a minimum grade of D- and COMM 2130 with a minimum grade of D- and COMM 2600 with a minimum grade of D- and COMM 2820 with a minimum grade of D- and COMM 2840 with a minimum grade of D- and COMM 2870 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 4940 Communication Internship**

[1-6 credit hours]

Professional training in communication relating to newspaper work, public relations, broadcasting etc. Arrangements with the appropriate communication organization must be made in consultation with the internship director prior to enrollment. Course offered P/NC.

**Term Offered:** Spring, Summer, Fall

**COMM 4990 Independent Study**

[1-4 credit hours]

A seminar in which the student pursues a problem of special interest in communication. A prospectus must be submitted prior to registration to the participating faculty member.

**Term Offered:** Spring, Summer, Fall

## Honors in Communication

Communication majors may graduate with departmental honors by meeting the following qualifications:

1. **Admission**

- 3.25 minimum GPA in Communication
- 3.0 minimum cumulative GPA

2. **Requirements**

- Completion of 12 hours in courses designated as Communication Honors, and 4 credits of COMM 4990:091 Honors Thesis

Any Communication course may be designated as "Honors" with the Instructor's permission and his/her assignment of suitable reading and research/project in addition to normal course work.

## B.A. in Communication Studies

Undergraduate faculty advisers (including Honors) are assigned by the Department. Contact the Department Chair.

## Bachelor of Arts Degree in Communication Studies

The Bachelor of Arts program provides a foundation for students to excel in organizational environments such as corporations, non-profits, and mass media. A balance of skills training and critical thinking subjects prepare students for careers in public relations, corporate communication, and related areas. Students are encouraged to be active in experiential and service learning projects through the department-sponsored student organizations such as the Communication Honors Society Lambda Pi Eta, professional fraternity Zeta Phi Eta, and PRSSA (Public Relations Student Society of America).

The curriculum leading to the B.A. in Communication Studies requires a minimum of 38 hours in the major and a maximum of 50 hours, which must include the following:

Code	Title	Hours
<b>Required courses: 19 credits</b>		
All Communication Studies majors must take the six 2000-level courses below before enrolling in major courses at the 3/4000 level:		
COMM 2000	Mass Communication And Society	3
COMM 2130	Media Writing 1	3

COMM 2600	Public Presentations	3
COMM 2820	Group Communication	3
COMM 2840	Interpersonal Communication	3
COMM 2870	Communication Theory	3
COMM 4910	Communication Studies Capstone (Senior year)	3

**Elective Courses: 17 credits (minimum)** 17

Select from the following (at least 12 credits must be taken at the 3/4000 level):

While Communication Studies Majors are completing their required 2000-level Communication courses, they may take any of the following 2000-level courses:

COMM 2120	Reporting
COMM 2150	Digital Publishing
COMM 2160	Single Camera Production
COMM 2210	Audio Production I
COMM 2220	Television Studio Production
COMM 2180	Media Producing and Performance
COMM 2300	Photojournalism
COMM 2500	Social Media I
COMM 2810	Nonverbal Communication
COMM 2830	Organizational Communication
COMM 2890	Crisis & Conflict in Organizations
COMM 2990	Independent Study

Once Communication Studies majors have completed the 2000-level required courses, they should consult with their advisor and take any of the following:<sup>1</sup>

COMM 3120	Media Writing II
COMM 3150	Feature Writing
COMM 3180	Mass Communication Law
COMM 3210	Audio Production 2
COMM 3260	Live Sports Production
COMM 3270	Multimedia Newsriting
COMM 3290	Content Management
COMM 3340	Visual Communication I
COMM 3350	Graphic Communication 1
COMM 3500	Social Media II
COMM 3610	Speech Writing
COMM 3720	Public Relations Theory
COMM 3750	Cross Cultural Communication in Public Relations
COMM 3760	Health Communication
COMM 3820	Persuasion Theory
COMM 3830	Basic Principles Of Debate And Forensics
COMM 3850	Research Methods
COMM 3880	Professional Business Communication
COMM 4090	Mass Communication Ethics
COMM 4100	Multimedia Journalism
COMM 4110	High School Publications
COMM 4220	Advanced Television Production
COMM 4250	Mass Communication History
COMM 4260	Communication in Non-Profit Organizations

COMM 4270	Special Event Planning
COMM 4330	Integrated Media
COMM 4340	Visual Communication II
COMM 4630	Public Relations Practices
COMM 4640	Public Relations Case Studies
COMM 4820	Family Communication
COMM 4830	Gender, Culture & Communication
COMM 4940	Communication Internship
COMM 4900	Communication Seminar
COMM 4990	Independent Study

Total Hours 38

<sup>1</sup> Current hiring practices indicate a graduate in the field of communication should have a basic working knowledge of skills needed in broadcasting, journalism, public relations and organizational communication.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
COMM 2000	Mass Communication And Society	3
Elementary Foreign Language I		4
Hours		14
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
COMM 2600	Public Presentations	3
COMM 2840	Interpersonal Communication	3
Natural Sciences Core		3
Elementary Foreign Language II		4
Hours		16
<b>Third Term</b>		
COMM 2130	Media Writing 1	3
COMM 2820	Group Communication	3
Intermediate Foreign Language I or approved culture course		3
Social Sciences Core		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16
<b>Fourth Term</b>		
COMM 2870	Communication Theory	3
Intermediate Foreign Language II or approved culture course		3
Social Sciences Core		3
ENGL 2710-ENGL 2800 Arts/Humanities Core (English Lit)		3
Arts/Humanities Core (History)		3

**SPECIAL CONSIDERATIONS <sup>1</sup>**

Hours	15
<b>Fifth Term</b>	
COMM Major Elective	4
COMM Major Elective (WAC)	3
Related or minor course	3
Diversity of US	3
Required Arts Elective	3
Hours	16
<b>Sixth Term</b>	
COMM Major Elective	3
COMM Major Elective	3
Related or minor course	3
Related or minor course	3
Elective	3
Hours	15
<b>Seventh Term</b>	
COMM major elective	4
Non-US Diversity	3
Related or minor course	3
Related or minor course	3
Hours	13
<b>Eighth Term</b>	
COMM 4910 Communication Studies Capstone	3
COMM Major Elective	3
Related or minor course	3
Elective (WAC)	3
Elective	3
Hours	15
Total Hours	120

<sup>1</sup> Students must complete all required 2000-level COMM courses before taking any 3/4000-level courses. Most Related and Elective courses need to be at the 3/4000 level to meet graduation requirement.

## B.A. in Media Communication

### Bachelor of Arts Degree in Media Communication

The Bachelor of Arts program provides a foundation for students to excel in mass media and communications-related fields such as journalism, video production, and program broadcast/telecast/webcast. Special emphasis is provided in all aspects of sporting event video production and design. A balance of skills training and critical thinking subjects prepare students for careers in writing, production, news, sports, and the use of social media platforms. Students are encouraged to be active in experiential and service learning projects through either the department's award-winning student news program, UT-10, the department's student-sponsored organization, Zeta Phi Eta, or UT student media such as the Independent Collegian and WXUT-FM, 88.3.

The curriculum in Media Communication requires a minimum of 36 hours of coursework in the major with a maximum of 50 hours, which must include the following:

Code	Title	Hours
<b>Required <sup>1</sup></b>		
COMM 2000	Mass Communication And Society	3
COMM 2130	Media Writing I	3
COMM 2160	Single Camera Production	3
COMM 2180	Media Producing and Performance	3
COMM 4100	Multimedia Journalism	4
	or COMM 4220 Advanced Television Production	
<b>Electives</b>		
Select 20-33 hours from the following (at least 16 credits must be taken at the 3/4000 level):		20-33
COMM 2210	Audio Production I	
COMM 2220	Television Studio Production	
COMM 2120	Reporting	
COMM 2150	Digital Publishing	
COMM 2300	Photojournalism	
COMM 2500	Social Media I	
COMM 2990	Independent Study	
COMM 3120	Media Writing II	
COMM 3150	Feature Writing	
COMM 3180	Mass Communication Law	
COMM 3210	Audio Production 2	
COMM 3260	Live Sports Production	
COMM 3270	Multimedia Newswriting	
COMM 3290	Content Management	
COMM 3350	Graphic Communication 1	
COMM 3500	Social Media II	
COMM 3880	Professional Business Communication	
COMM 4090	Mass Communication Ethics	
COMM 4100	Multimedia Journalism	
COMM 4220	Advanced Television Production	
COMM 4250	Mass Communication History	
COMM 4330	Integrated Media	
COMM 4940	Communication Internship	
COMM 4900	Communication Seminar	
COMM 4990	Independent Study	
Total Hours		36-49

<sup>1</sup> All required courses must be passed with a C- or better.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3

COMM 2130	Media Writing 1	3
COMM 2000	Mass Communication And Society	3
Arts/Humanities Core (History)		3
Hours		16

**Second Term**

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
COMM 2160	Single Camera Production	3
COMM 2000-level Major Elective		3
Social Sciences Core		3
Arts/Humanities Core		3
Hours		15

**Third Term**

COMM 2180	Media Producing and Performance	3
COMM 2000-level Major Elective		3
Elementary Foreign Language I		4
Social Sciences Core		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		17

**Fourth Term**

COMM 4100	Multimedia Journalism (WAC)	4
COMM Major Elective		3
Elementary Foreign Language II		4
Natural Sciences Core		3
Diversity of US		3
Hours		17

**Fifth Term**

COMM 3000/4000 Major Elective		3
Intermediate Foreign Language I or approved culture course		3
Related or minor course		3
Related or minor course		3
Non-US Diversity		3
Hours		15

**Sixth Term**

COMM 3000/4000 Major Elective		3
COMM 3000/4000 Major Elective		3
Intermediate Foreign Language II or approved culture course		3
Related or minor course		3
ENGL 2710-ENGL 2800 Arts/Humanities (English Lit)		3
Hours		15

**Seventh Term**

COMM 3000/4000 Major elective		3
COMM 4100	Multimedia Journalism or COMM 4220 or Advanced Television Production	4
Related or minor course		3
Related or minor course		3
Hours		13

**Eighth Term**

COMM 3000/4000 Major Elective	3
Related or minor course	3
Elective	3
Elective	3
Hours	12
Total Hours	120

## General Communication Minor

Code	Title	Hours
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**Required Courses**

COMM 2000	Mass Communication And Society	3
COMM 2130	Media Writing 1	3

**Elective Courses**

Select 15 hours from the following (6-9 hours from each area): 15

*Communication Studies Courses*

COMM 2600	Public Presentations
COMM 2810	Nonverbal Communication
COMM 2820	Group Communication
COMM 2830	Organizational Communication
COMM 2840	Interpersonal Communication
COMM 2870	Communication Theory
COMM 2890	Crisis & Conflict in Organizations
COMM 2990	Independent Study
COMM 3340	Visual Communication I
COMM 3610	Speech Writing
COMM 3720	Public Relations Theory
COMM 3820	Persuasion Theory
COMM 3850	Research Methods
COMM 3880	Professional Business Communication
COMM 4340	Visual Communication II
COMM 4630	Public Relations Practices
COMM 4640	Public Relations Case Studies
COMM 4820	Family Communication
COMM 4830	Gender, Culture & Communication

*Media Courses*

COMM 2120	Reporting
COMM 2150	Digital Publishing
COMM 2180	Media Producing and Performance
COMM 2210	Audio Production I
COMM 2220	Television Studio Production
COMM 2300	Photojournalism
COMM 2500	Social Media I
COMM 2990	Independent Study
COMM 3120	Media Writing II
COMM 3180	Mass Communication Law
COMM 3210	Audio Production 2
COMM 3270	Multimedia Newswriting
COMM 3290	Content Management

COMM 3500	Social Media II
COMM 4090	Mass Communication Ethics
COMM 4110	High School Publications
COMM 4220	Advanced Television Production
COMM 4250	Mass Communication History
COMM 4330	Integrated Media
COMM 4640	Public Relations Case Studies

Total Hours

21

## Department of Economics

Kevin Egan, Chair and Advisor

### Early Admission to Master's Degree Program in Economics

A special opportunity exists for undergraduate students at the University of Toledo interested in pursuing a Master's of Arts Degree in Economics. Being evaluated by the same criteria as graduate students, undergraduate students have the opportunity to apply advanced-level work to their undergraduate degree requirements while, at the same time, securing a significant "head start" toward satisfying the requirements for a master's degree in Economics. Qualifying undergraduate students are allowed to apply particular courses (and associated credit hours) towards both their undergraduate and graduate degree requirements.

If accepted into this program, undergraduate students may register for up to 3 graduate-level Economics courses (9 credit hours). Because the M.A. degree in Economics requires 30 credit hours of graduate-level work, students who complete 9 of those hours as an undergraduate student have to complete only 21 additional credit hours as a graduate student to receive their master's degree.

Undergraduate students with a declared major in Economics and a cumulative GPA in Economics courses of 3.3 or higher are eligible for this program. Students accepted into this program must consult and receive prior approval from the Department of Economics' graduate director as to which courses at the University of Toledo may be applied for dual credit toward both undergraduate and graduate degree requirements. Students interested in this program are encouraged to speak with the Department of Economics' Chair, graduate director, or undergraduate advisor for additional information and the application form for this program.

### Degrees Offered

- B.A. in Economics (p. 51)
- Minor in Economics (p. 52)

#### ECON 1010 Introduction To Economic Issues

[3 credit hours]

Basic concepts and theory applications to major economic problems and controversies. Designed primarily to meet requirements of students not planning to take upper level economics courses. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

#### ECON 1150 Principles Of Macroeconomics

[3 credit hours]

Explaining the level and the growth of economic activity, its fluctuations and ways of achieving greater stability, including the roles of money, banking and international finance.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

#### ECON 1200 Principles Of Microeconomics

[3 credit hours]

Theories of consumer behavior; determination of input and output; prices and quantities in factor and product markets; analysis of international trade and policy; applications include labor markets and income distribution.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

#### ECON 2400 The American Economy In The Twentieth Century

[3 credit hours]

American economic growth in the recent past. Evolution of governmental roles, development of labor markets with respect to race and sex, effects of wars and depressions. Status of American competitiveness.

#### ECON 2500 Topics In International Economics

[3 credit hours]

Why nations trade; comparative advantage and gains from trade; free trade versus protectionism; free versus "fair" trade; balance of payments problems.

#### ECON 2810 Introduction to Econometrics

[3 credit hours]

Introduction to econometrics with an emphasis on the intuitive understanding and practical applications of the basic tools of regression analysis. Course covers hypothesis testing, single and multiple regression equations, and the problems and possible solutions to data that are associated with multicollinearity, autocorrelation and heteroskedasticity

**Prerequisites:** MATH 2600 with a minimum grade of D- or MATH 3610 with a minimum grade of D- or BUAD 2060 with a minimum grade of D-

**Term Offered:** Spring, Fall

#### ECON 3030 Consumer Economics

[3 credit hours]

Economic role of the consumer, theory of choice-making - rational purchasing of food, housing, health care, transportation, insurance, credit, budgeting, investing and tax returns.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

#### ECON 3050 Economics Of Gender

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportions of female-headed and same sex households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity



**ECON 3070 Economics And Law**

[3 credit hours]

Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law, Common Law Process; Economics of Crime and Punishment.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 3080 Economics Of Crime**

[3 credit hours]

Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ECON 3120 Topics In Monetary And Financial Economics**

[3 credit hours]

Current issues in money, banking and finance; interest rate theory; international money and banking; monetary policy and modeling monetary economies.

**Prerequisites:** ECON 1150 with a minimum grade of D-

**Term Offered:** Fall

**ECON 3150 Intermediate Macroeconomic Theory**

[3 credit hours]

National income accounting; theory of income determination; causal relationships; analysis of consumption, investment, government and foreign demand functions; integration of theories of income, output, money and interest.

**Prerequisites:** ECON 1150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ECON 3200 Intermediate Micro-Economic Theory**

[3 credit hours]

Consumer theory, utility and indifference curve analysis, theory of the firm, industry pricing in perfect and imperfect competition and distribution theory.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ECON 3240 Environmental Economics**

[3 credit hours]

Economic analysis of the causes of environmental problems; Examination of various economic policies for addressing current environmental issues such as pollution control policies and optimal use of resources.

**Term Offered:** Spring, Summer

**ECON 3250 Economics Of Sports**

[3 credit hours]

This course will survey the theoretic and applied economic issues within the world of professional and amateur sports, focusing on industrial organization, labor economics and public finance.

**Prerequisites:** ECON 1200 with a minimum grade of D- or ECON 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ECON 3260 The Economics of Climate Change**

[3 credit hours]

Climate change can be viewed as a fundamentally economic problem. However, climate change has a unique set of attributes that make standard economic analysis difficult to apply. It is a global problem requiring unprecedented international cooperation. Economists view climate change as a risk that creates uncertainty about the future. Students will learn how people value alternative reductions in climate risk. An understating of this trade-off is necessary to help design more cost-effective climate change policy.

**ECON 3270 Natural Resource Economics**

[3 credit hours]

Economic analysis of natural resource conservation and use, considering the objectives of efficiency and sustainability. Topics include energy, minerals, marine resources, land and agriculture, outdoor recreation, biodiversity and wildlife management.

**Prerequisites:** ECON 1200 with a minimum grade of D- or ECON 3240 with a minimum grade of D-

**Term Offered:** Spring

**ECON 3300 BENEFIT-COST ANALYSIS**

[3 credit hours]

The study of the evaluation of competing public policy alternatives and projects to more efficiently allocate society's resources. Applications include transportation, public health, criminal justice, education, and the environment.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D- or ECON 3240 with a minimum grade of D- or ECON 3270 with a minimum grade of D-

**Term Offered:** Fall

**ECON 3410 World Economic History**

[3 credit hours]

Study of economic growth throughout the world, particularly in Europe, Asia, Africa and Latin America. Analysis of economic institutions, technological change, industrialization and living standards.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 3500 Comparative Economic Systems**

[3 credit hours]

Theory and ideology of market, socialist and mixed economic systems. Case study of the economies of U.S., Russia, China and India.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer

Multicultural Non-US Diversity

**ECON 3600 Urban Economics**

[3 credit hours]

Analysis bearing on intermetropolitan and intrametropolitan growth processes.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-



**ECON 3810 Applied Econometrics**

[3 credit hours]

Topics emphasize applications of a wide range of statistical approaches to time-series, cross-sectional, panel, and other types of data. Included are micro-econometric topics such as panel data models, qualitative choice models, hazard models and others. The time series macro-economic topics include model solidarity, cointegration, error correction mechanisms, ARCH and GARCH models, economic forecasting, and others.

**Prerequisites:** ECON 2810 with a minimum grade of D-**Term Offered:** Spring, Fall**ECON 3900 Undergraduate Seminar**

[1-4 credit hours]

Small group study of special topics initiated either by student or a faculty member.

**Term Offered:** Spring, Fall**ECON 3910 Honors Research**

[1-4 credit hours]

Study of special topics initiated either by student or a faculty member.

**Term Offered:** Spring, Fall**ECON 3920 Honors Reading**

[1-4 credit hours]

Study of special topics initiated either by student or a faculty member.

**Term Offered:** Spring, Fall**ECON 3980 Current Economic Issues**

[3 credit hours]

Course content varies as changes in the interaction between economic topics and writing assignments occur.

**ECON 4050 Population Economics**

[3 credit hours]

Interaction of economic changes and demographic variables; topics include birth rates, women's employment, marriage and divorce, aging and mortality, migration and overpopulation.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-**Term Offered:** Spring**ECON 4120 Monetary Theory**

[3 credit hours]

Modern theories of financial markets, money and the theory of interest rates, money's role in general equilibrium and growth models and money's ability to cause inflation.

**Prerequisites:** ECON 3150 with a minimum grade of D-**Term Offered:** Spring**ECON 4130 Monetary And Fiscal Policy**

[3 credit hours]

Changes in the quantity of money and alternative government spending, taxation and debt policies, interrelations of fiscal and monetary policies in stabilization programs.

**Prerequisites:** ECON 3150 with a minimum grade of D-**Term Offered:** Spring**ECON 4150 Advanced Macroeconomic Theory**

[3 credit hours]

Theories of consumption and investment. Empirical estimates. Cycle and growth theory, multiplier-accelerator analysis and growth models. The theory and instruments of macroeconomic policy. Dynamic Macroeconomic Theory.

**Prerequisites:** ECON 3150 with a minimum grade of D-**Term Offered:** Fall**ECON 4200 Advanced Microeconomic Theory**

[3 credit hours]

Advanced topics in microeconomic theory, consumer behavior, the firm and market structure, distribution theory, equilibrium conditions, welfare economics.

**Prerequisites:** ECON 3200 with a minimum grade of D-**Term Offered:** Fall**ECON 4230 Poverty And Income Distribution**

[3 credit hours]

Causes and consequences of current trends in poverty and income distribution in the U.S.; analysis of policies dealing with problems in these areas.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-**ECON 4240 Applied Environmental Economics**

[3 credit hours]

The economics of the environment and natural resources using applied welfare theory, benefit-cost analyses, and nonmarket valuation. Examination of economic instruments, such as marketable permits, for solving environmental problems.

**Prerequisites:** ECON 1200 with a minimum grade of D- or ECON 3240 with a minimum grade of D- or ECON 3270 with a minimum grade of D-**Term Offered:** Spring**ECON 4250 Labor Economics**

[3 credit hours]

The labor market is studied. Topics include labor force characteristics, wage determination, hours and condition of work, human capital models, unemployment, labor union structure and growth, and modern labor legislation.

**Prerequisites:** ECON 1200 with a minimum grade of D-**Term Offered:** Spring**ECON 4260 Behavioral Economics**

[3 credit hours]

Behavioral Economics is an increasingly common course offered by Economics departments. We are creating this course to meet demands of students.

**Prerequisites:** ECON 1200 with a minimum grade of D-**Term Offered:** Spring

**ECON 4280 Energy Economics**

[3 credit hours]

This course explores the theoretical and empirical perspectives on the demand and supply sides of the energy markets. This course starts with an energy outlook in both domestic and global scales. Then it discusses the natural resource modelling, energy supply, and the behavioral underpinnings of the energy demand. The course continues with current and historical aspects of national and global markets for oil, natural gas, coal, electricity, nuclear power, and renewable energy.

**Prerequisites:** ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D-

**ECON 4300 Mathematical Economics**

[3 credit hours]

Development and applications of the mathematical tools used by economists. Differential and integral calculus, linear algebra, transcendental functions and series.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Fall

**ECON 4410 American Economic History**

[3 credit hours]

Exploration of economic growth in America from pre-Columbian times to the present day. Analysis of economic institutions, technological change, industrialization and standards of living.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 4510 International Economics I**

[3 credit hours]

Theory of international trade; commercial policy; costs and benefits, economic integration; trade and economic growth and balance of payments problems.

**Prerequisites:** ECON 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer

**ECON 4550 Economic Development**

[3 credit hours]

Economic problems and policies in less-developed countries, including such topics as schooling, population growth, urbanization, landholding, income distribution, capital formation and development strategies.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 4620 Regional Economics**

[3 credit hours]

Examination of regional income estimates and social accounts, regional multipliers, diverse location theories, supplemented with techniques of regional analysis.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**ECON 4660 Public Finance Economics**

[3 credit hours]

An analysis of the government sector in the economy, government expenditures, taxation and borrowing and their effects on employment, price levels and growth.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4750 Health Economics**

[3 credit hours]

Economic analysis of health and health services. Topics currently include medical and allied manpower, hospitals, drugs and cost-benefit analysis of selected health programs.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4810 Econometrics Models And Methods I**

[3 credit hours]

An introduction to econometric methods and their use in quantitative analysis of economic theories. Diagnostics for problems typically encountered are detailed along with techniques for correcting these problems.

**Prerequisites:** (ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D- and MATH 2600 with a minimum grade of D-) or (ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D- and ECON 2810 with a minimum grade of D-)

**Term Offered:** Fall

**ECON 4820 Econometrics Models And Methods II**

[3 credit hours]

An introduction to forecasting methods for economic time-series including Bayesian methods. Both theory and application of forecasting models and methods are covered.

**Prerequisites:** ECON 4810 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4830 Econometrics Models And Methods III**

[3 credit hours]

Econometric methods that apply to survey, spatial and cross-sectional/ time-series data along with other specialized modeling techniques are covered.

**Prerequisites:** ECON 4810 with a minimum grade of D-

**ECON 4910 Research**

[1-4 credit hours]

**ECON 4920 Readings**

[1-4 credit hours]

**ECON 4940 Economics Internship**

[1-4 credit hours]

A prearranged work-study experiential learning course where students gain practical experience applying their economic knowledge with a specific firm, government agency, or nonprofit group. The course is variable credit from 1 to 4 credits. Each academic credit hour requires 40 hours of internship work, e.g., a 3 credit ECON 4940 course requires 120 hours. ECON 4940 will be graded as "credit/ no credit".

**Prerequisites:** ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D- and ECON 2810 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ECON 4960 Senior Honors Thesis**

[1-4 credit hours]

Qualified juniors and seniors are invited to work for the citation "honors in economics."

1. **Admission:** The Honors Program is open to all undergraduate economics majors whether or not they are enrolled in College Honors. Interested students should speak with the department undergraduate

advisor. Ordinarily, the student must have a minimum cumulative GPA of 3.0.

2. **Requirements:** To be awarded departmental honors in economics, the student must take nine of the 30-hour major requirements in the honors and honors recognition courses offered by the department. Every honors student must complete ECON 4960: Senior Honors Thesis and then two other honors courses. Every regularly scheduled 3000 or 4000-level course can be given honors recognition by completing an honors contract with the course instructor detailing the readings and research in addition to the normal requirements of the course. Moreover, any student accepted into the department's early admission program and taking up to two 5000 level economics courses will have those 5000 level courses given honors recognition. To remain in the program, the student ordinarily must maintain a minimum GPA of 3.3 in the major.

or BUAD 2060 Business Statistics

### Optional Concentration in Environmental Economics

To earn the concentration in environmental economics, students must complete four of the following elective courses as part of their major:

ECON 3240	Environmental Economics
or ECON 327	Natural Resource Economics
ECON 3300	BENEFIT-COST ANALYSIS
ECON 4240/5240	Applied Environmental Economics (OR alternative economics course at 3000 level or above chosen in consultation with the undergraduate economics advisor)
ECON 4280/5280	Energy Economics (OR alternative economics course at 3000 level or above chosen in consultation with the undergraduate economics advisor.)

Total Hours 30

- <sup>1</sup> Majors are encouraged to meet the mathematics and statistics requirements at an early stage of their course work. Students must meet those requirements by choosing one calculus and one statistics course.

Students accepted into the BA in Economics should be academically prepared to be placed in MATH 1730 or MATH 1850. Students placing into lower MATH levels - MATH 1180, MATH 1200 or MATH 1340, are able to replace elective credits with these courses and still complete their degree within 124 hours.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
ECON 1150	Principles Of Macroeconomics	3
MATH 1730	Calculus with Applications to Business and Finance	5
Elementary Foreign Language I		4
Hours		16
<b>Second Term</b>		
ECON 1200	Principles Of Microeconomics	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
Select one of the following: (Related requirement)		3
MATH 2600	Introduction To Statistics	
BUAD 2060	Business Statistics	
HIST 1010-HIST 1200 Arts/Humanities Core (History)		3
Hours		16
<b>Third Term</b>		
ECON 2810	Introduction to Econometrics	3
ECON 3200	Intermediate Micro-Economic Theory	3

## B.A. in Economics

### Undergraduate Research

The department of economics offers students the opportunity to gain research experience under faculty guidance. Research topics can be theoretical analysis, empirical analysis or both. Further options regarding the level of research are available, as the department offers junior- and senior-level courses - ECON 3900, ECON 3910, ECON 4910 and ECON 4920. A student interested in conducting research needs to register for one of those four courses with the consent of a faculty member who agrees to direct the student's research. Students may enroll in these courses more than once. If they do, however, they are encouraged to work with different faculty members to obtain more diverse research experiences. The department also has available undergraduate research grants from the Shapiro scholarship fund. Please see the department undergraduate advisor for more information.

The requirement of 30 hours in economics must include, from among the following, 15 hours of core courses and 15 hours of electives including at least one WAC course in Economics.

In the major area, 21 hours are to be taken under the regular grading system; the P/NC option is available for the remaining 9 hours and for all related courses.

Economics majors are required to take the following courses:

Code	Title	Hours
<b>Core Courses</b>		
ECON 1150	Principles Of Macroeconomics	3
ECON 1200	Principles Of Microeconomics	3
ECON 2810	Introduction to Econometrics	3
ECON 3150	Intermediate Macroeconomic Theory	3
ECON 3200	Intermediate Micro-Economic Theory	3
<b>Economics Electives</b>		
Select 15 hours, chosen in consultation with the Economics Advisor		15
<b>Related Courses</b> <sup>1</sup>		
MATH 1850	Single Variable Calculus I (or equivalent)	
or MATH 1730	Calculus with Applications to Business and Finance	
MATH 2600	Introduction To Statistics (or equivalent)	

Social Sciences Core	3
Intermediate Foreign Language I or approved culture course	3
Arts/Humanities Core (Fine Art)	3
Hours	15
<b>Fourth Term</b>	
ECON 3150 Intermediate Macroeconomic Theory	3
ECON Major Elective (WAC)	3
Natural Sciences Core	3
Natural Sciences Core (Lab)	1
Intermediate Foreign Language II or approved culture course	3
Arts/Humanities Core	3
Hours	16
<b>Fifth Term</b>	
ECON Major Elective 3000-4000 level	3
Natural Sciences Core	3
Non-US Diversity	3
ENGL 2710-ENGL 2800 Arts/Humanities Core (English Lit)	3
Related or minor course	3
Hours	15
<b>Sixth Term</b>	
ECON Major Elective 3000-4000 level	3
Diversity of US	3
Related or minor course (WAC)	3
Related or minor course	6
Hours	15
<b>Seventh Term</b>	
ECON Major Elective 3000-4000 level	3
Related course	3
Elective	9
Hours	15
<b>Eighth Term</b>	
ECON Major Elective 3000-4000 level	3
Elective	13
Hours	16
Total Hours	124

## Minor in Economics

Students electing to minor in economics must complete a minimum of 18 hours of course work. The 9 hours of required course work listed below for a minor in economics provide the theoretical and quantitative skills essential for a fundamental understanding of the discipline of economics and a rigorous background for an in-depth appreciation of upper division courses. Each program of study for a minor must receive the prior approval of the departmental Adviser. A minimum GPA of 2.0 must be achieved in courses within the minor.

Code	Title	Hours
<b>Required Courses</b>		
ECON 1150	Principles Of Macroeconomics	3
ECON 1200	Principles Of Microeconomics	3

Select one of the following:	3
ECON 3150 Intermediate Macroeconomic Theory	
ECON 3200 Intermediate Micro-Economic Theory	
or another macro or micro course chosen with the consent of the undergraduate Adviser	

<b>Minor Electives</b>	
Select an additional nine hours from course work in economics at the 3000 to 4000 levels, chosen in consultation with the undergraduate advisor <sup>1</sup>	9
Total Hours	18

<sup>1</sup> No more than three hours of ECON 4910 or ECON 4920 may be included in the nine hours of additional course work.

## Department of English Language and Literature

Sara Lundquist, Chair  
 Andrew Mattison, Associate Chair, Director of Undergraduate Studies, Advisor  
 Benjamin Stroud, Advisor  
 Melissa Gregory, Honors Advisor  
 Anthony Edgington, Director of Composition

## Advanced Placement Program

Refer to the University of Toledo's Registrar page at [https://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](https://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Degrees Offered

- B.A. in English (p. 58)
- Minor in English (p. 61)

### ENGL 1010 College Composition 1 Co-Requisite

[3 credit hours]

Explanatory and persuasive writing in both personal and public genres; instruction and practice in generating, focusing, developing, researching and presenting ideas in ways consistent with one's subject, purposes and intended audiences. Placement: ACT score below 18, SAT below 480, Accuplacer Sentence Skills below 88, or HS GPA below 2.76.

Students who receive a grade of C or better enroll in Composition II; those who receive No Credit enroll in ENGL 1110. From Composition I Co-requisite, Composition I and Composition II, no more than 6 hours apply to graduation.

Core English Composition

**ENGL 1020 Writing And Grammar For Students Of English As A Second Language**

[3 credit hours]

Course work focuses on the major grammatical patterns of academic writing in English as well as accuracy in the mechanics of academic writing. The primary emphasis is on these features in the context of the students' own written work. Eligibility by placement exam only. A maximum of 3 semester hours in ENGL 1020 and 1120 may be counted toward fulfilling the 124 hour requirement for graduation.

**Prerequisites:** English Placement with a score of 1020

**Term Offered:** Spring, Fall

**ENGL 1110 College Composition I**

[3 credit hours]

Explanatory and persuasive writing in both personal and public genres; instruction and practice in generating, focusing, developing, researching and presenting ideas in ways consistent with one's subject, purposes and intended audience. ESL students must have completed ENGL 1020 with grade of Pass. From Composition I with Workshop, Composition I and Composition II, no more than 6 hours apply toward graduation.

**Prerequisites:** ACT Composite with a score of 18 or Accuplacer Sentence Skls Engl with a score of 88 or Accuplacer NG Writing with a score of 263 or TOTAL SCORE with a score of 940

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

**ENGL 1130 College Composition II: Academic Disciplines And Discourse**

[3 credit hours]

Reading and analyzing documents from specific disciplines to synthesize results from multiple perspectives and produce disciplinarily appropriate writing from your research. A significant focus on academic argument and advanced research writing skills included. Discipline-specific sections offered. Web enhanced. Critical reading, research papers required.

**Prerequisites:** ENGL 1110 with a minimum grade of D- or ENGL 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

**ENGL 2010 Advanced Composition**

[3 credit hours]

Instruction and practice in writing expository and persuasive prose for a variety of audiences with particular attention to the effect of content and style upon readers. Introduction to advanced methods for critical thinking, argumentation, and research writing. Writing for discipline-specific and/or public audiences encouraged.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 2710 Reading Fiction**

[3 credit hours]

Exploration of various kinds of fiction with goals of literary appreciation and analytical insight. (not for major credit)

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**ENGL 2720 Reading Drama**

[3 credit hours]

Exploration of various kinds of drama with goals of literary appreciation and analytical insight. (not for major credit)

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**ENGL 2730 Reading Poetry**

[3 credit hours]

Exploration of various kinds of poetry with goals of literary appreciation and analytical insight. (not for major credit)

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**ENGL 2770 American Minority Writers**

[3 credit hours]

Study of literature by underrepresented groups in the United States. A particular group may be specified; consult Time Schedules for specific topic.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural US Diversity

**ENGL 2800 Writing About Literature**

[3 credit hours]

A writing-intensive (WAC) course introducing the process of writing various types of papers and analyzing literary works. Special emphasis on discovering a topic and on revision and structure in expository writing.

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities



**ENGL 2950 Science And Technical Report Writing**

[3 credit hours]

Instruction and practice in multiple forms of technical and scientific communication for varied scientific and technical audiences. Emphasis on writing informational and analytical reports and documents in medical, scientific or technical fields. Additional focus on writing for multiple audiences and in different mediums, including online mediums.

**Prerequisites:** ENGL 1010 with a minimum grade of D- or ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

**ENGL 2960 Professional and Business Writing**

[3 credit hours]

Instruction and practice in multiple forms of professional and business writing within an organizational context. Emphasis on the analytical report based on research. Additional focus on writing for multiple audiences and in different mediums, including online mediums.

**Prerequisites:** ENGL 1110 with a minimum grade of D- or ENGL 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

**ENGL 3010 Creative Writing**

[3 credit hours]

A basic introduction to creative writing. Students write poems, stories or creative nonfiction which serve as the basis for classroom discussion and for conferences with instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGL 3020 Readings for Writers**

[3 credit hours]

Through the analysis of a diverse range of literary genres, this course will teach writers how to develop their own material by studying as models the formal strategies of other writers, including but not limited to language, structure, narrator or speaker, character, dialogue, plot, tone, and the many other elements of literature. This course will also offer a unit on professionalization.

**Prerequisites:** ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 3040 Playwriting - WAC**

[3 credit hours]

This course involves a practical analysis of plays, emphasizing character development, dialogue, and story structure. Students' plays will be workshopped, critiqued, and read aloud.

**ENGL 3050 Persuasive Writing**

[3 credit hours]

Analysis of and practice in the techniques of persuasive writing. Emphasis varies from writing about legal issues to writing about issues of public controversy.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 3060 Screenwriting**

[3 credit hours]

This course involves practical analysis of screenplays, emphasizing story structure and characterization. Students plan, write and refine story lines before writing actual scripts.

**Term Offered:** Spring, Summer, Fall

**ENGL 3070 Writing Within the Community**

[3 credit hours]

This service learning course will teach students how to teach creative writing with compassion in small communities with a need to have their voices heard.

**ENGL 3080 The Art And Process Of The Book**

[3 credit hours]

This course examines all aspects of the printed book - from scrolls to Gutenberg to contemporary publishing - as students work towards designing, printing and binding a finely printed edition.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGL 3150 Linguistic Principles**

[3 credit hours]

An introduction to modern linguistic theories about the nature and structure of language with emphasis on English.

**Term Offered:** Spring, Fall

**ENGL 3250 The Detective Story**

[3 credit hours]

A selective study of the genre from its beginning in the 19th century to the present, with attention to the variety of sub-genres and styles.

**ENGL 3260 Contemporary Fiction**

[3 credit hours]

A study of recent trends in American, British, and World fiction.



**ENGL 3360 Introduction to Poetry and Poetics**

[3 credit hours]

This course serves as an introduction to the techniques and ideas that underlie poetry. It will feature a broad array of poems from multiple times and places, major statements on poetics, and discussion of how poets conceive of what poetry is and how poetics affects reading.

**ENGL 3600 American Literary Traditions**

[3 credit hours]

Introduction to literary history, and the terminology and techniques of the historical study of American literature, intended as preparation for the English major. Texts may include works from the colonial period to the 21st-century.

**Term Offered:** Spring, Summer, Fall**ENGL 3610 British Literary Traditions**

[3 credit hours]

Introduction to literary history, and the terminology and techniques of the historical study of British literature, intended as preparation for the English major. Texts may include works from the Medieval period to the 21st-century.

**Term Offered:** Spring, Fall**ENGL 3620 Children's and Young Adult Literature**

[3 credit hours]

Study of the history and major themes of children's and young adult literature. Appropriate for both majors and non-majors.

**ENGL 3630 American Literature, Beginnings to 1865**

[3 credit hours]

Study of the writing of colonial North America and the United States before 1865, in literary and historical contexts. 3 credits.

**ENGL 3640 American Literature 1865 to the Present**

[3 credit hours]

Study of the writing of the United States after 1865, in literary and historical contexts. 3 credits.

**ENGL 3650 Science Fiction And Fantasy Literature**

[3 credit hours]

This course examines literary works of science fiction and fantasy, and related scholarship, from a variety of perspectives. Readings are selected from prominent writers in both genres.

**Term Offered:** Spring, Fall**ENGL 3670 Literature of Diverse and Nonwhite Communities**

[3 credit hours]

Introduction to study of non-white authors representing formerly colonized countries or other nonwestern and diasporic communities. May include African-American, Caribbean, Central and South Asian, or African literature. Will include texts written in English and/or translated from other languages. Intended as preparation for the English major.

**Term Offered:** Spring**ENGL 3680 British Literature from the Middle Ages to 1789**

[3 credit hours]

Study of the writing of the British isles before 1789, in literary and historical contexts. 3 credits.

**ENGL 3690 British Literature from 1789 to the Present**

[3 credit hours]

Study of the writing of the British isles after 1789, in literary and historical contexts. 3 credits.

**ENGL 3710 Literature Of The Old Testament**

[3 credit hours]

A study of the Old Testament from the literary point of view, including ancient poetry, history, romance, short story, hymn, prophecy, and wisdom writing.

**Term Offered:** Spring, Summer, Fall**ENGL 3720 Literature And Mythology**

[3 credit hours]

Study of classical and biblical mythologies in modern Western literature, private mythologies and literary adaptations of patterns from legend and folklore.

**Term Offered:** Spring, Fall**ENGL 3730 Folklore**

[3 credit hours]

A survey of the field of folklore with an emphasis on folk narrative, folk music and material culture in America.

**Term Offered:** Spring, Fall**ENGL 3740 Folklore And Literature**

[3 credit hours]

A study in the relationship of oral and written literature. Focus is on the literary uses of folk forms and use of tradition by specific writers and schools.

**Term Offered:** Fall**ENGL 3750 Women And Literature**

[3 credit hours]

Offered as Writing Across the Curriculum (WAC) course. Examines literary works in light of major issues raised by feminist criticism and gender studies.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**ENGL 3760 European Literature To The Renaissance**

[3 credit hours]

Offered as Writing Across the Curriculum (WAC) course. A selective study of works of European literature (in translation) from the Ancient Greeks and Romans and Medieval and Renaissance European cultures other than Britain. Particular texts vary, but may include a variety of genres and authors across the periods. Recommended: ENGL 3600, 3610, or 3790.

**Term Offered:** Fall**ENGL 3770 World Literature And Cultures**

[3 credit hours]

This course examines texts and cultures from around the world (and in particular the non-western world). The genres examined include autobiography, poetry, short fiction, novels, plays and histories.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ENGL 3780 Modern European Literature**

[3 credit hours]

Literature of Europe other than Britain from the 16th century to the present, in English translation.

**Term Offered:** Fall

**ENGL 3790 Foundations Of Literary Study**

[3 credit hours]

Writing Across the Curriculum Course. An overview and introduction to the discipline of literary study.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 3810 Shakespeare I**

[3 credit hours]

An introduction to the study and interpretation of Shakespeare's works in literary, theatrical, and historical context, with a focus on his drama.

**Term Offered:** Spring, Fall

**ENGL 3980 Special Topics in Literature**

[3 credit hours]

Group study of a period, genre, author, or special literary topic. May be repeated with change of specialty number. Topics will be announced in the semester Time Schedules.

**Term Offered:** Spring, Fall

**ENGL 4030 Writing Workshop In Nonfictional Prose**

[3 credit hours]

Directed study of nonfiction genres, rhetorical forms and elements of style; extensive practice in the writing and critical evaluation of prose.

**Prerequisites:** ENGL 2010 with a minimum grade of D- or ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4060 Screenwriting II**

[3 credit hours]

For students familiar with the fundamentals of screenplays, this course devotes attention to writing a complete script. Students are expected to come to the class with a planned story line.

**Prerequisites:** ENGL 3060 with a minimum grade of D- or FILM 3350 with a minimum grade of D-

**Term Offered:** Spring

**ENGL 4070 Writing Workshop In Poetry**

[3 credit hours]

An advanced workshop in writing poetry emphasizing a wider range of readings, craft and technique.

**Prerequisites:** ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4080 Writing Workshop In Fiction**

[3 credit hours]

An advanced workshop emphasizing a wider range of readings, craft and technique. May be repeated once for credit.

**Prerequisites:** ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4090 Current Writing Theory**

[3 credit hours]

A study of current theory and research connecting reading, critical thinking, and writing with applications of theory to students' writing practice.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4100 The History Of English**

[3 credit hours]

Study of the changes that have taken place in the English language from the earliest days to the present.

**Term Offered:** Spring, Summer, Fall

**ENGL 4110 Old English**

[3 credit hours]

A study of phonology, morphology and syntax with representative readings in verse and prose.

**Term Offered:** Fall

**ENGL 4120 Middle English**

[3 credit hours]

Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.

**ENGL 4150 Applied Linguistics Research And Theory I**

[3 credit hours]

Focus on the methods of applied linguistics in the broad sense, including their use in studies of first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

**Prerequisites:** ENGL 3150 with a minimum grade of D- or LING 3150 with a minimum grade of D-

**Term Offered:** Fall

**ENGL 4170 Applied Linguistics Research And Theory II**

[3 credit hours]

Study of theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

**Prerequisites:** ENGL 4150 with a minimum grade of D- or LING 4150 with a minimum grade of D-

**Term Offered:** Spring

**ENGL 4200 British Fiction: 18th Century**

[3 credit hours]

The development of British fiction in the 18th Century. Recommended: ENGL 3610 or 3790.

**ENGL 4210 Issues in ESL Writing**

[3 credit hours]

Course content includes key concepts in ESL writing instruction and research; characteristics of second language writers and their texts; curricular options; and responding to and assessing ESL writing.

**Term Offered:** Spring, Fall

**ENGL 4280 American Fiction: 20th Century**

[3 credit hours]

Major developments in the 20th-century American short story and novel.

Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall**ENGL 4300 Medieval and Early Tudor Drama**

[3 credit hours]

A study of drama and performance from the British Isles and relevant continental traditions in the late Middle Ages through the early 16th century, in their cultural, material, and performance contexts. Course may include performance traditions and texts such as monastic and liturgical drama, civic Creation-to-Doomsday play cycles, manuscript collections of drama, morality plays, passion plays, miracle and saints' plays, folk plays, courtly interludes and mummings, and royal entries, as well as modern revivals.

**ENGL 4310 British Drama To 1642**

[3 credit hours]

A study of drama in England from the opening of the first public theaters to their closing in 1642. May include plays produced for public performance and other dramatic works. Emphasis will be on playwrights other than Shakespeare. Recommended: ENGL 3610, 3790, or 3810

**ENGL 4340 Modern Drama**

[3 credit hours]

Drama in English or translation from the 1870s to the 1930s.

**ENGL 4400 British Literature: The Medieval Period**

[3 credit hours]

The study of British literature before 1500, often in translation. Topics vary between early medieval texts and culture (8th to 11th centuries), late medieval texts and culture (12th to 15th centuries, excluding Chaucer), and specific themes or genres across sub-periods. Check departmental course descriptions for the specific topic in a given semester. May be repeated for credit if topics are different. Recommended: ENGL 3610, 3810, or 3790.

**Term Offered:** Spring, Fall**ENGL 4420 British Literature: Renaissance**

[3 credit hours]

Poetry and prose of the 16th century, with emphasis on the Elizabethan period. Recommended: ENGL 3610, 3790, or 3810.

**Term Offered:** Spring, Fall**ENGL 4440 Early 17th Century English Literature**

[3 credit hours]

Poetry and prose from 1603 to 1660. Recommended: ENGL 3610, 3790, or 3810.

**Term Offered:** Spring, Fall**ENGL 4460 British Literature: Restoration And 18th Century**

[3 credit hours]

Drama, poetry, and prose of the Restoration, neo-classical and pre-Romantic periods. Recommended: ENGL 3610, 3790, or 3810.

**Term Offered:** Spring**ENGL 4500 British Literature: The Romantic Period**

[3 credit hours]

Study of major authors, genres, and ideas of the Romantic period: approximately 1789 to 1837.

**Term Offered:** Spring, Fall**ENGL 4520 British Literature: The Victorian Period**

[3 credit hours]

Study of major authors, genres, and ideas of the Victorian period: approximately 1837 to 1901.

**Term Offered:** Spring, Fall**ENGL 4540 British Literature: The 20th Century**

[3 credit hours]

Study of major authors, genres, and ideas of 20th-century British literature.

**ENGL 4560 Literature of the British Empire 1850 to the Present**

[3 credit hours]

Studies in texts from Britain and its former colonies. Genres may include the novel, travel writing, memoir, and film.

**Term Offered:** Spring, Fall**ENGL 4600 Early American Literature**

[3 credit hours]

The poetry and theology of the New England Puritans, especially Bradstreet and Taylor, the literature of the American Enlightenment, the beginnings of American Romanticism in Bryant and Cooper. Recommended: ENGL 3600 or 3790.

**Term Offered:** Fall**ENGL 4620 American Romanticism**

[3 credit hours]

Literature of the United States from the early nineteenth century through about 1865, with concentration on the literary production between 1840 and 1865. Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall**ENGL 4630 American Literary Realism**

[3 credit hours]

American literature from the post-Civil War period to the early 20th Century. Recommended: ENGL 3600 or 3790.

**Term Offered:** Fall**ENGL 4640 Early 20th Century American Poetry**

[3 credit hours]

Study of American poetry from 1900 to 1950. Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall**ENGL 4650 African American Writers Before The 20th Century**

[3 credit hours]

A survey of African-American prose, poetry, drama and fiction from 1760 to 1915. Recommended: ENGL 2800, or 3790.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**ENGL 4660 African American Literature In The 20th Century**

[3 credit hours]

A course focused on 20th- and 21st-century African-American poetry, fiction, nonfiction, and drama.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**ENGL 4680 American Literature Since World War II**

[3 credit hours]

An exploration of American literature from 1945 to the present day with a focus on both poetry and fiction, and possibly drama and other literary forms. Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall

**ENGL 4690 Native American Literature And Culture**

[3 credit hours]

Study of texts by and about Native Americans, including the oral traditions of storytelling and mythology.

**Term Offered:** Spring, Fall  
Multicultural US Diversity

**ENGL 4730 World Cinemas And Cultures**

[3 credit hours]

Study of cinematic representations across cultures and the relations between film, its subjects and the camera.  
Multicultural Non-US Diversity

**ENGL 4780 Principles Of Literary Criticism**

[3 credit hours]

A comparative study of the principles of literary criticism, including readings from representative critics of all ages, and of basic aesthetic theories underlying the major approaches to literature. Recommended: ENGL 2800, or 3790.

**ENGL 4800 Chaucer**

[3 credit hours]

A study of Geoffrey Chaucer's major works and cultural, literary, and critical contexts. All works will be read in Chaucer's original Middle English. Course has two variations: one focusing on The Canterbury Tales and another on the dream visions and Troilus and Criseyde. Consult Time Schedules or departmental course descriptions for the specific topic. May be repeated for credit with different topic. Recommended: ENGL 3610, 3790 or 3810.

**Term Offered:** Spring, Fall

**ENGL 4810 Shakespeare II**

[3 credit hours]

Advanced study of Shakespeare's plays, particularly his later plays.  
Recommended: ENGL 3810.

**Term Offered:** Fall

**ENGL 4820 Milton**

[3 credit hours]

A study of the poetry and selected prose of John Milton. Recommended: ENGL 3610, 3810, or 3790.

**Term Offered:** Spring, Fall

**ENGL 4850 Studies In The Work Of A British Author**

[3 credit hours]

Author changes with each offering. Consult Time Schedules for authors to be studied. Can be repeated for credit if topic is different.  
Recommended: ENGL 3610, 3810, or 3790.

**Term Offered:** Spring, Fall

**ENGL 4860 Studies In The Work Of An American Author**

[3 credit hours]

Author changes with each offering. Consult Time Schedules for authors to be studied. Can be repeated for credit if topic is different.  
Recommended: ENGL 3600, 3810, or 3790.

**Term Offered:** Spring, Fall

**ENGL 4900 English Honors Seminar**

[2 credit hours]

The Honors Seminar is taken in conjunction with the Honors Thesis (ENGL 4960). Required of all candidates for departmental Honors.

**Term Offered:** Fall

**ENGL 4940 Internship In English**

[1-4 credit hours]

Internship with an approved program, company or agency employing research, writing editing or linguistics expertise. Student must submit proposal for approval by advisory and a departmental committee.  
(Repeatable for a maximum of 4 hours credit.)

**Term Offered:** Spring, Summer, Fall

**ENGL 4950 Special Topics For Writers**

[3 credit hours]

An advanced course in genre writing. Content varies with each offering.  
May be repeated once for credit.

**Term Offered:** Spring, Fall

**ENGL 4960 English Honors Thesis**

[1-4 credit hours]

Research and writing of a thesis on a topic in English or linguistics required of all candidates for departmental honors.

**Term Offered:** Spring, Fall

**ENGL 4980 Special Topics In Literature**

[3 credit hours]

An undergraduate course on a special topic. Consult Time Schedules for topic to be studied and semester offered.

**Term Offered:** Spring, Fall

**ENGL 4990 Independent Study**

[1-3 credit hours]

Supervised independent study in special topics of British and American language and literature. Courses may be repeated more than once for credit.

**Term Offered:** Spring, Summer, Fall

An English honors candidate must be a junior or senior, have completed 15 hours of 3000-4000 level English courses, and have a GPA of 3.6 or higher. He/she must discuss the possibility of departmental Honors with the English Honors adviser prior to enrolling in ENGL 4900 and ENGL 4960. In order to receive the designation of honors, the student must fulfill the departmental Honors requirements in addition to the hours required for the major, and receive an A on the thesis. Students do not have to be enrolled in the College Honors program to pursue departmental Honors.

## B.A. in English

The English major offers two concentrations: Literature and Creative Writing.

Both concentrations require a minimum of 36 credit hours, and the major core is required of both concentrations. These courses are offered at least once a year.

Code	Title	Hours
<b>English Major Core</b>		
Introduction to critical practice. Select one:		3
ENGL 3360	Introduction to Poetry and Poetics	
ENGL 3600	American Literary Traditions	
ENGL 3610	British Literary Traditions	
ENGL 3790	Foundations Of Literary Study	
ENGL 4780	Principles Of Literary Criticism	

Literature excluded from the traditional canon. Select one:	3
ENGL 3670 Literature of Diverse and Nonwhite Communities	
ENGL 3770 World Literature And Cultures	
ENGL 4560 Literature of the British Empire 1850 to the Present	
ENGL 4650 African American Writers Before The 20th Century	
ENGL 4660 African American Literature In The 20th Century	
Two courses in literature after 1800:	6
ENGL 4280 American Fiction: 20th Century	
ENGL 4500 British Literature: The Romantic Period	
ENGL 4520 British Literature: The Victorian Period	
ENGL 4540 British Literature: The 20th Century	
ENGL 4560 Literature of the British Empire 1850 to the Present	
ENGL 4640 Early 20th Century American Poetry	
ENGL 4620 American Romanticism	
ENGL 4630 American Literary Realism	
ENGL 4640 Early 20th Century American Poetry	
ENGL 4650 African American Writers Before The 20th Century	
ENGL 4660 African American Literature In The 20th Century	
ENGL 4680 American Literature Since World War II	
One course in a single author:	3
ENGL 3810 Shakespeare I	
ENGL 4800 Chaucer	
ENGL 4810 Shakespeare II	
ENGL 4820 Milton	
ENGL 4850 Studies In The Work Of A British Author	
ENGL 4860 Studies In The Work Of An American Author	

#### Concentrations 21

Select one of the following concentrations:

##### Literature Concentration

One additional course from either of the first two categories above.

Two courses in literature before 1800:

ENGL 3810 Shakespeare I	
ENGL 4110 Old English	
ENGL 4120 Middle English	
ENGL 4200 British Fiction: 18th Century	
ENGL 4300 Medieval and Early Tudor Drama	
ENGL 4310 British Drama To 1642	
ENGL 4400 British Literature: The Medieval Period	
ENGL 4420 British Literature: Renaissance	
ENGL 4440 Early 17th Century English Literature	
ENGL 4460 British Literature: Restoration And 18th Century	
ENGL 4600 Early American Literature	
ENGL 4800 Chaucer	
ENGL 4810 Shakespeare II	
ENGL 4820 Milton	

Four ENGL electives

##### Creative Writing Concentration

ENGL 3010 Creative Writing

One course in literature before 1800:

ENGL 3810 Shakespeare I	
ENGL 4110 Old English	
ENGL 4120 Middle English	
ENGL 4200 British Fiction: 18th Century	
ENGL 4300 Medieval and Early Tudor Drama	
ENGL 4310 British Drama To 1642	
ENGL 4400 British Literature: The Medieval Period	
ENGL 4420 British Literature: Renaissance	
ENGL 4440 Early 17th Century English Literature	
ENGL 4460 British Literature: Restoration And 18th Century	
ENGL 4600 Early American Literature	
ENGL 4800 Chaucer	
ENGL 4810 Shakespeare II	
ENGL 4820 Milton	

Three workshops

One creative writing elective

One 4000-level elective in either literature or creative writing or ENGL 3020

#### Related Fields

The major requires 18 total credit hours in related fields outside of English, half of which must be on the 3000- or 4000-level<sup>1</sup>

Total Hours 54

<sup>1</sup> These are usually chosen from the other humanities, the social sciences, and interdisciplinary programs. The related fields requirement may also be satisfied by taking a minor.

- Creative Writing Concentration (p. )
- Literature Concentration (p. )

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Creative Writing Concentration

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Arts/Humanities Core (Fine Arts)		3
Elementary Foreign Language I		4
Social Sciences Core		3
Hours		17
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
HIST 1010-1220	Arts/Humanities Core (History)	3
Social Sciences Core		3
Elementary Foreign Language II		4
Hours		16



**Third Term**

ENGL 3010	Creative Writing	3
Natural Sciences Core		3
Social Sciences Core		3
Diversity of US		3
Intermediate Foreign Language I or approved culture course		3
Hours		15

**Fourth Term**

One course from introduction to critical practice category	3
One course from literature excluded from the traditional canon category	3
Natural Sciences Core	3
Natural Sciences Core (Lab)	1
Related or Minor course	3
Intermediate Foreign Language II or approved culture course	3
Hours	16

**Fifth Term**

One course from literature before 1800 category <sup>1</sup>	3
One single-author course <sup>1</sup>	3
Select one of the following:	3
ENGL 4030 Writing Workshop In Nonfictional Prose	
ENGL 4070 Writing Workshop In Poetry	
ENGL 4080 Writing Workshop In Fiction	
Related or Minor course 3000-4000 level	3
Related or Minor course	3
Hours	15

**Sixth Term**

Select one of the following:	3
ENGL 4030	Writing Workshop In Nonfictional Prose
ENGL 4070	Writing Workshop In Poetry
ENGL 4080	Writing Workshop In Fiction
One course from literature after 1800 category	3
Related or Minor course	3
Non-US Diversity	3
Elective	3
Hours	15

**Seventh Term**

Select one of the following:		3
ENGL 4030	Writing Workshop In Nonfictional Prose	
ENGL 4070	Writing Workshop In Poetry	
ENGL 4080	Writing Workshop In Fiction	
One 4000-level elective in either literature or creative writing or ENGL 3020		3
Related or Minor course 3000-4000 level		3
Elective		3
Elective		3
Hours		15

**Eighth Term**

One course from literature after 1800 category	3
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ENGL Creative Writing Elective	3
Related or Minor course 3000-4000	3
Elective	3
Elective	3
Hours	15
Total Hours	124

<sup>1</sup> ENGL 3810 is recommended for either of these two requirements, but may not count for both requirements.

**Literature Concentration**

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Arts/Humanities Core (Fine Arts)		3
Elementary Foreign Language I		4
Social Sciences Core		3
Hours		17

**Second Term**

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
HIST 1010-HIST 1220	Arts/Humanities Core (History)	3
Social Sciences Core		3
Elementary Foreign Language II		4
Hours		16

**Third Term**

ENGL elective (3000-4000 level)	3
Natural Sciences Core	3
Social Sciences Core	3
Diversity of US	3
Intermediate Foreign Language I or approved culture course	3
Hours	15

**Fourth Term**

One course from introduction to critical practice category	3
One course from literature excluded from the traditional canon category	3
Natural Sciences Core	3
Natural Sciences Core (Lab)	1
Related or Minor course	3
Intermediate Foreign Language II or approved culture course	3
Hours	16

**Fifth Term**

One course from literature before 1800 category <sup>1</sup>	3
One single-author course <sup>1</sup>	3
Related or Minor course	3
Related or Minor course	3



Elective	3
Hours	15
<b>Sixth Term</b>	
One course from literature before 1800 category	3
One course from either the critical practice or literature excluded from the traditional canon category	3
Related or Minor course 3000-4000 level	3
Non-US Diversity	3
Elective	3
Hours	15
<b>Seventh Term</b>	
One course from literature before 1800 category	3
One course from literature after 1800 category	3
ENGL elective (3000-4000 level)	3
Related or Minor course 3000/4000 level	3
Elective	3
Hours	15
<b>Eighth Term</b>	
ENGL elective (3000-4000 level)	3
ENGL elective (3000-4000 level)	3
Elective	3
Elective	3
Related or Minor course 3000/4000 level	3
Hours	15
Total Hours	124

<sup>1</sup> ENGL 3810 is recommended for either of these two requirements, but may not count for both requirements.

## Minor in English

Code	Title	Hours
A minor in English requires a minimum of 18 credits.		
Select one of the following:		3
ENGL 3600	American Literary Traditions	
ENGL 3610	British Literary Traditions	
ENGL 3760	European Literature To The Renaissance	
ENGL 3770	World Literature And Cultures	
ENGL 3810	Shakespeare I	
Select one of the following:		3
ENGL 2800	Writing About Literature	
ENGL 3010	Creative Writing	
ENGL 3020	Readings for Writers	
ENGL 3790	Foundations Of Literary Study	
Select at least three English courses at the 4000-level. At least one must be a literature course (numbered between 4200 and 4890).		9
Select an English elective at the 3000- or 4000-level.		3
Total Hours		18

## Department of Geography and Planning

Daniel J. Hammel, Chair

David J. Nemeth, B.A. Coordinator, Undergraduate Adviser

## Advanced Placement Program

Refer to the University of Toledo's Registrar page at [https://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](https://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Degrees Offered

- B.A. in Geography (p. 64)
- Minor in Geographic Information Science and Technology (p. 68)
- Minor in Human and Environmental Geography (p. 68)
- Minor in Urban and Regional Planning (p. 69)

### GEPL 1010 Human Geography

[3 credit hours]

This course provides an overview of the geographic dimensions of human diversity with an emphasis on understanding the uneven distribution of people and resources in the context of globalization. It is a systematic treatment of the major concepts of human geography and their application to modern problems, population, migration, cultural patterns and processes, political organization of space, agricultural and rural land use, industrialization and economic development, and urban land use. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

### GEPL 1100 Environmental Geography

[3 credit hours]

While gaining a fundamental understanding of the world's physical environment, students explore the processes and spatial distributions of anthropological changes to the world's lands, freshwater, biota, oceans and atmosphere. Current issues such as global warming, acid rain, ozone depletion, deforestation and desertification are addressed.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

### GEPL 2010 Fundamentals Of Geography

[3 credit hours]

An introduction to basic geographic concepts of both physical and human geography, with emphasis on the interrelationships of people with their physical and cultural environments.

**Term Offered:** Spring

### GEPL 2030 Cultural Geography

[3 credit hours]

A learning-through-writing course. Systematic applications of the concepts of culture and cultural diversity to geographical themes and case studies.

**Term Offered:** Spring

Multicultural Non-US Diversity

**GEPL 2040 World Regional Geography**

[3 credit hours]

The course explores the spatial distribution at various geographical scales, local, regional, national, and global, of urban, cultural, economic and demographic phenomena in several contrasting regions of the world.

**Term Offered:** Spring, Fall

**GEPL 2050 World Cities**

[3 credit hours]

This course discusses the physical, cultural, socio-economic aspects of the mega cities of the world - the World Cities. It examines the causes and stages of growth and the decline of cities.

**Term Offered:** Spring, Fall

**GEPL 2110 Maps and Map Analysis**

[3 credit hours]

This course provides an overview of the appropriate use of maps, a basic tool of analysis in geography and planning. Topics will include map scale and map projections, types of maps and their particular uses, elements of map design, effective communication with maps, special requirements of spatial data, and the fundamentals of spatial analysis using maps. The focus is on the use of maps as tools for spatial analysis and not the production of maps.

**Prerequisites:** GEPL 2010 with a minimum grade of D-

**Term Offered:** Fall

**GEPL 3030 Geography Of Europe**

[3 credit hours]

An introduction to the geography of Europe with an emphasis on boundaries, economic development, integration, identity, nationalism, and regional differences. The course includes an examination of how Europe has been defined and what it means to be European in both historical and contemporary contexts. It provides a critical perspective on the geography of Europe as it is impacted by local, regional, and global forces.

**Term Offered:** Spring

**GEPL 3050 Geography Of U.s. And Canada**

[3 credit hours]

Systematic and regional survey of physical, social and economic geography of the region. Emphasis on the region with respect to worldwide/continental problems and prospects in economic development, management of resources and population adjustment.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**GEPL 3120 Geography Of Asia**

[3 credit hours]

Compares and contrasts physical and human aspects of Asian countries and peoples in relation to economic development.

**Term Offered:** Spring

Multicultural Non-US Diversity

**GEPL 3220 Geography Of Africa**

[3 credit hours]

Course begins with a general overview of Africa's physical environment, its colonial history and its people and cultures. It then examines a variety of themes associated with development, population, urban and political geography.

**Term Offered:** Fall

Multicultural Non-US Diversity

**GEPL 3300 Geography of Latin America and the Caribbean**

[3 credit hours]

This course explores one of the world's most vibrant regions, Latin America. This world region stretches across diverse landscapes, from tropical rainforests to the snowcapped peaks of the Andes, from megacities to empty deserts and plains. The diversity of environments fosters great cultural diversity, despite sharing similar historical roots. This course explores the geography of Latin America through a combination of thematic and regional approaches.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**GEPL 3440 Population Geography**

[3 credit hours]

A learning through writing course. Space and place facets of population size, growth, migration, distribution and composition with emphasis on the population trends and patterns in both developing and developed nations.

**GEPL 3610 Conservation And Resources**

[3 credit hours]

A timely examination of some basic philosophies, principles and ethical issues in conservation and resource discourses in geography and across the disciplines. Provocative case studies. A learning-through-writing (WAC) course.

**Term Offered:** Spring

**GEPL 3650 Industrial Geography**

[3 credit hours]

An introduction to industrial geography; including industrial location theory, competing production systems, and shifts from manufacturing to service-based economies.

**Term Offered:** Spring, Fall

**GEPL 3900 Environmental Planning**

[3 credit hours]

Study of how humans are impacting the health and sustainability of the earth by their actions and activities and means by which we can reduce the impacts by better planning and management of human uses. Topics include water resources, forests, natural hazards, and the Great Lakes, through conservation, protected areas, better use of science, stewardship, cooperation and community actions. Will include use of local examples and case studies drawn from Ohio and the US.

**Term Offered:** Spring, Fall

**GEPL 4040 Geography Education Strategies**

[3 credit hours]

Use of geographic inquiry in the emerging integrated social studies and standard geography education curricula for K-12 instruction.

**Term Offered:** Fall

**GEPL 4110 Geographic Information Systems**

[3 credit hours]

Introduction to computerized methods for the capture, storage, management, analysis and display of spatially-referenced data for the solution of planning, management and research problems.

**Term Offered:** Spring, Fall

**GEPL 4160 Patterns Of World Development**

[3 credit hours]

An examination of contemporary global economic patterns and trends. Compares and contrasts population problems; the diffusion of multinational corporations, and the emergence of post-industrial economies.

**Term Offered:** Fall**GEPL 4180 Geographic Information Systems Applications**

[3 credit hours]

Advanced applications in geographic information systems (GIS) with an emphasis on advanced GIS analysis techniques, Global Positioning System applications in GIS, database design, and a survey of vector- and raster-based GIS software and databases.

**Prerequisites:** GEPL 4110 with a minimum grade of D-**Term Offered:** Spring**GEPL 4210 Land Use Planning**

[3 credit hours]

A broad review of urban and regional planning in the US and Western Europe, introducing land use planning concepts and practices and their role in shaping the direction of urban development.

**Term Offered:** Spring**GEPL 4310 Geography Of Gypsies (Romanies) and Travelers - WAC**

[3 credit hours]

Explorations into identities and distributions of Gypsies (Romanies) and Travelers (GR&T peoples) worldwide and the challenges that their study presents to Geography and to other social science disciplines.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**GEPL 4420 Quantitative Methods in Geographic Research**

[3 credit hours]

An examination of quantitative methods commonly used in geographic research with an emphasis on spatial statistics and cartographic analysis.

**Term Offered:** Fall**GEPL 4490 Remote Sensing Of The Environment**

[4 credit hours]

Introduction to theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition. Recommended: GEPL 3550.

**Term Offered:** Fall**GEPL 4500 Digital Image Analysis**

[3 credit hours]

Using imagery captured by earth orbiting satellites, students will document changes on the surface of the earth addressing environmental issues. Students will have the opportunity to learn applications of this technology including project based work in the classroom.

**Prerequisites:** GEPL 4490 with a minimum grade of D- and EEES 4490 with a minimum grade of D-**Term Offered:** Spring**GEPL 4520 Analytical And Computer Cartography**

[4 credit hours]

The theoretical and mathematical foundations of the mapping process in a digital environment. An introduction to the structure and manipulation of graphic and nongraphic geographical data to produce maps.

**Prerequisites:** GEPL 4510 with a minimum grade of D- or GEPL 4110 with a minimum grade of D-**Term Offered:** Spring**GEPL 4530 Principles Of Urban Planning**

[3 credit hours]

An introduction to planning theory. the planner's role in land use regulation economic development, housing and social service delivery is reviewed.

**Term Offered:** Fall**GEPL 4540 Weather And Climate**

[3 credit hours]

A survey analysis of meteorology and climatology. The physical processes of weather and the pattern of climate provide the basis for this course.

**Term Offered:** Summer, Fall**GEPL 4570 Land Development And Planning**

[4 credit hours]

The exploration of theoretical location analysis, pragmatic land development issues and analytic feasibility tools, and the consequences of land use policies that affect development.

**Term Offered:** Spring**GEPL 4580 Location Analysis**

[4 credit hours]

The application of geographic location theory, spatial interaction modeling, optimization techniques and geographic information system processing to the solution of facility location problems.

**Term Offered:** Spring**GEPL 4600 Urban Design**

[3 credit hours]

Concepts and procedures for the organization, design and development of public and private urban forms and spaces at the micro level, including a survey of intraurban elements, cultural, ecological and aesthetic considerations, and interdisciplinary collaboration.

**Term Offered:** Fall**GEPL 4650 Physical Geography**

[3 credit hours]

Using an Earth System Science approach linking the hydrosphere, biosphere, atmosphere, and lithosphere, students will explore the relationship and spatial characteristics of events such as hurricane landfall, volcanic eruptions and climate change.

**Term Offered:** Spring

**GEPL 4700 Community Planning Workshop**

[3 credit hours]

This course introduces the skills and techniques used by urban & regional planning practitioners in every-day planning process in real world. Students work on a local, regional or state planning issue that is important to the social, economic, spatial, and environmental development in Toledo, its surrounding regions, or the state of Ohio. Projects focus on communicating with local planning agencies, advisory organizations, and consulting firms for data collection. Students then analyze the data and prepare a planning document.

**Term Offered:** Spring**GEPL 4710 Urban Environments**

[3 credit hours]

Geographic perspectives on the social, political and economic functions of cities. Issues of land use, redevelopment, residential and commercial geographies are examined in contemporary North American cities.

**Term Offered:** Spring, Fall**GEPL 4750 Transportation Geography**

[3 credit hours]

This course introduces students to the culture of transportation planning while honing their critical reading and analytical skills. The approach combines two types of analysis. One is a historical political-economy treatment of the evolution of the transportation systems, including the evolution of associated institutions, concluding with contemporary transportation planning issues. The other type of analysis is an introduction to the rational method for determining appropriate public responses for dealing with current transportation planning issues.

**Term Offered:** Spring, Fall**GEPL 4810 Political Geography**

[3 credit hours]

An examination of political actors and power relations at local, regional, national and global scales, and their impact on spaces and places. The course includes topics, such as state formation, electoral geography, identity and social movements, nationalism and regionalism, imperialism and post-colonialism, urban politics, feminist political geography, elites and marginalized individuals, and geopolitics.

**Term Offered:** Spring, Fall**GEPL 4900 Proseminar in Geography**

[3 credit hours]

**GEPL 4910 Research in Geography**

[1-4 credit hours]

**GEPL 4920 Readings in Geography**

[1-3 credit hours]

**GEPL 4960 Honors Thesis in Geography**

[4 credit hours]

**GEPL 4990 Geography and Planning as Disciplines and Professions**

[1 credit hour]

This course provides an overview and synthesis of geography and planning as academic disciplines and as professions. The course proceeds along two tracks. In the first, students will read and discuss some of the classic literature that attempts to define both fields. In the second, students will learn about career resources for geographers and planners and learn to present themselves as professionals in the fields.

**Prerequisites:** GEPL 2010 with a minimum grade of D-

The honors program in the Department of Geography and Planning is open to all qualified undergraduate majors whether or not they are enrolled in College Honors. The following are requirements for entrance into the Honors program in Geography:

**Admission:**

1. The student must maintain a 3.5 minimum GPA in Geography courses.
2. The student must maintain a 3.3 minimum cumulative GPA.
3. 12 hours completed work in Geography.
4. Qualification as a Geography major whether or not they are enrolled in College honors.

**Requirements:**

A student must complete 9 hours in designated honors courses in Geography and a 4-hour senior honors thesis project. During the final year before graduation, the student will meet with the department's undergraduate advisor to select a faculty research advisor, complete and submit to the department's faculty for approval a senior honors project (GEPL 4960).

## Senior Honors Thesis

The title of the senior honors thesis is reported to the undergraduate advisory who will then select a faculty research advisor for the student. The title of the honor's thesis must be filed no later than one semester prior to the expected date of graduation. A copy must also be filed in the library of the Department and students are also expected, as a courtesy, to provide members of their thesis committee with copies.

## B.A. in Geography

### BA Geography with Concentration in Human and Environmental Geography

31 hours required:

Code	Title	Hours
<b>Required Courses</b>		
GEPL 2010	Fundamentals Of Geography	3
GEPL 2110	Maps and Map Analysis	3
GEPL 4110	Geographic Information Systems	3
GEPL 4420	Quantitative Methods in Geographic Research	3
GEPL 4990	Geography and Planning as Disciplines and Professions	1
<i>Environmental Geography - Select one:</i>		3
GEPL 3610	Conservation And Resources	
GEPL 3900	Environmental Planning	
GEPL 4540	Weather And Climate	
GEPL 4650	Physical Geography	
<i>Human Geography - Select one:</i>		3
GEPL 2030	Cultural Geography	
GEPL 2040	World Regional Geography	
GEPL 2050	World Cities	
GEPL 3440	Population Geography	

GEPL 3650	Industrial Geography	
GEPL 4160	Patterns Of World Development	
GEPL 4710	Urban Environments	
GEPL 4750	Transportation Geography	
GEPL 4810	Political Geography	
<i>Regional Geography - Select one:</i>		3
GEPL 3030	Geography Of Europe	
GEPL 3050	Geography Of U.s. And Canada	
GEPL 3120	Geography Of Asia	
GEPL 3220	Geography Of Africa	
GEPL 3300	Geography of Latin America and the Caribbean	
<i>GIS and Technology (GIS&amp;T) – Select one:</i>		3 or 4
GEPL 4180	Geographic Information Systems Applications	
GEPL 4490	Remote Sensing Of The Environment	
<i>Elective Hours <sup>1</sup></i>		6
<b>Total Hours</b>		31-32

<sup>1</sup> Except GEPL 1010, and GEPL 1100.

## BA Geography with Concentration in Geographic Information Science & Technology (GIS&T)

31 hours required:

Code	Title	Hours
<b>Required:</b>		
GEPL 2010	Fundamentals Of Geography	3
GEPL 2110	Maps and Map Analysis	3
GEPL 4110	Geographic Information Systems	3
GEPL 4180	Geographic Information Systems Applications	3
GEPL 4420	Quantitative Methods in Geographic Research	3
GEPL 4490	Remote Sensing Of The Environment	4
GEPL 4500	Digital Image Analysis	3
GEPL 4990	Geography and Planning as Disciplines and Professions	1
<i>Environmental Geography - Select one:</i>		3
GEPL 3610	Conservation And Resources	
GEPL 3900	Environmental Planning	
GEPL 4540	Weather And Climate	
GEPL 4650	Physical Geography	
<i>Human Geography - Select one:</i>		3
GEPL 2030	Cultural Geography	
GEPL 2040	World Regional Geography	
GEPL 2050	World Cities	
GEPL 3440	Population Geography	
GEPL 3650	Industrial Geography	
GEPL 4160	Patterns Of World Development	
GEPL 4710	Urban Environments	
GEPL 4750	Transportation Geography	
GEPL 4810	Political Geography	

<i>Elective</i>	2
<b>Total Hours</b>	31

## BA Geography with Concentration in Urban and Regional Planning

34 hours required:

Code	Title	Hours
<b>Required:</b>		
GEPL 2010	Fundamentals Of Geography	3
GEPL 2110	Maps and Map Analysis	3
GEPL 4110	Geographic Information Systems	3
GEPL 4210	Land Use Planning	3
GEPL 4420	Quantitative Methods in Geographic Research	3
GEPL 4530	Principles Of Urban Planning	3
GEPL 4600	Urban Design	3
GEPL 4700	Community Planning Workshop	3
GEPL 4750	Transportation Geography	3
GEPL 4990	Geography and Planning as Disciplines and Professions	1
<i>Environmental Geography - Select one:</i>		3
GEPL 3610	Conservation And Resources	
GEPL 3900	Environmental Planning	
GEPL 4540	Weather And Climate	
GEPL 4650	Physical Geography	
<i>Human Geography - Select one:</i>		3
GEPL 2030	Cultural Geography	
GEPL 2040	World Regional Geography	
GEPL 2050	World Cities	
GEPL 3440	Population Geography	
GEPL 3650	Industrial Geography	
GEPL 4160	Patterns Of World Development	
GEPL 4710	Urban Environments	
GEPL 4750	Transportation Geography	
GEPL 4810	Political Geography	
<b>Total Hours</b>		34

*Below are sample plans of study. Consult your degree audit for your program requirements.*

- Geography with Concentration in Human and Environmental Geography (p. )
- Geography with Concentration in Geography Information Science & Technology (GIS&T) (p. )
- Geography with Concentration in Urban and Regional Planning (p. )



## Geography with Concentration in Human and Environmental Geography

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
Elementary Foreign Language I		4
HIST 1010-1200 Arts/Humanities (History)		3
Social Sciences Core		3
MATH 1180	Reasoning With Mathematics	3
Hours		17
<b>Second Term</b>		
GEPL 2010	Fundamentals Of Geography	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
Arts/Humanities Core		3
Arts/Humanities (Fine Art)		3
Hours		16
<b>Third Term</b>		
GEPL 2110	Maps and Map Analysis	3
GEPL Major Elective: Regional Geography		3
GEPL 3030	Geography Of Europe	
GEPL 3050	Geography Of U.s. And Canada	
GEPL 3120	Geography Of Asia	
GEPL 3220	Geography Of Africa	
GEPL 3300	Geography of Latin America and the Caribbean	
Intermediate Foreign Language I or approved culture course		3
Natural Sciences Core		3
Natural Science Core (Lab)		1
ENGL 2710-2800 Arts/Humanities (English Lit)		3
Hours		16
<b>Fourth Term</b>		
GEPL Major Elective: Human Geography		3
GEPL 2030	Cultural Geography	
GEPL 2040	World Regional Geography	
GEPL 2050	World Cities	
GEPL 3440	Population Geography	
GEPL 3650	Industrial Geography	
GEPL 4160	Patterns Of World Development	
GEPL 4710	Urban Environments	
GEPL 4750	Transportation Geography	
GEPL 4810	Political Geography	
GEPL Major Elective: Environmental Geography		3
GEPL 3610	Conservation And Resources	
GEPL 3900	Environmental Planning	
GEPL 4540	Weather And Climate	
GEPL 4650	Physical Geography	

Intermediate Foreign Language II or approved culture course		3
Natural Sciences Core		3
Social Sciences Core		3
Hours		15
<b>Fifth Term</b>		
GEPL 4420	Quantitative Methods in Geographic Research	3
Related or Minor Course		3
Related or Minor Course		3
Non-US Diversity		3
Elective (WAC)		3
Hours		15
<b>Sixth Term</b>		
GEPL 4110	Geographic Information Systems	3
GEPL Major Elective (WAC)		3
Related or Minor Course		3
Related or Minor Course		3
US Diversity		3
Hours		15
<b>Seventh Term</b>		
GEPL Major Elective: GIS&T		3 or 4
GEPL 4180	Geographic Information Systems Applications	
GEPL 4490	Remote Sensing Of The Environment	
GEPL 4990	Geography and Planning as Disciplines and Professions	1
Related or Minor Course		3
Minor course or Elective		3
Elective		3
Elective		3
Hours		16-17
<b>Eighth Term</b>		
GEPL Major Elective <sup>1</sup>		6
Related or Minor course		3
Elective		5
Hours		14
Total Hours		124-125

<sup>1</sup> If no Writing Across the Curriculum (WAC) course has been taken in the major, one elective must be a WAC course.

## Geography with Concentration in Geography Information Science & Technology (GIS&T)

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
Elementary Foreign Language I		4

HIST 1010-1200 Arts/Humanities Core (History)	3
Social Sciences Core	3
MATH 1180 Reasoning With Mathematics	3
Hours	17
<b>Second Term</b>	
GEPL 2010 Fundamentals Of Geography	3
ENGL 1130 College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II	4
Arts/Humanities Core	3
Arts/Humanities Core (Fine Art)	3
Hours	16
<b>Third Term</b>	
GEPL 2110 Maps and Map Analysis	3
GEPL Major Elective: Human Geography	3
GEPL 2030 Cultural Geography	
GEPL 2040 World Regional Geography	
GEPL 2050 World Cities	
GEPL 3440 Population Geography	
GEPL 3650 Industrial Geography	
GEPL 4160 Patterns Of World Development	
GEPL 4710 Urban Environments	
GEPL 4750 Transportation Geography	
GEPL 4810 Political Geography	
Intermediate Foreign Language I or approved culture course	3
Natural Sciences Core	3
Natural Sciences Core (Lab)	1
ENGL 2710-2800 Arts/Humanities Core (English Lit)	3
Hours	16
<b>Fourth Term</b>	
GEPL 4110 Geographic Information Systems	3
Intermediate Foreign Language II or approved culture course	3
Related or Minor course	3
Social Sciences Core	3
Natural Sciences Core	3
Hours	15
<b>Fifth Term</b>	
GEPL 4420 Quantitative Methods in Geographic Research	3
GEPL 4490 Remote Sensing Of The Environment	4
Related or Minor Course	3
Non-US Diversity	3
Elective (WAC)	3
Hours	16
<b>Sixth Term</b>	
GEPL 4500 Digital Image Analysis	3
GEPL 4180 Geographic Information Systems Applications	3
Related or Minor Course	3
Related or Minor Course	3

Diversity of US	3
Hours	15
<b>Seventh Term</b>	
GEPL Major Elective: Environmental Geography	
GEPL 3610 Conservation And Resources	
Related or Minor course	3
GEPL 3900 Environmental Planning	
GEPL 4540 Weather And Climate	
GEPL 4650 Physical Geography	
GEPL 4990 Geography and Planning as Disciplines and Professions	1
Minor course or Elective	3
Elective	3
Elective	3
Hours	13
<b>Eighth Term</b>	
Related or Minor course	3
GEPL Major Elective <sup>1</sup>	3
Elective	10
Hours	16
Total Hours	124

<sup>1</sup> If no Writing Across the Curriculum (WAC) course has been taken in the major, this elective must be a WAC course.

## Geography with Concentration in Urban and Regional Planning

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
Elementary Foreign Language I		4
HIST 1010-1200 Arts/Humanities Core (History)		3
Social Sciences Core		3
MATH 1180 Reasoning With Mathematics		3
Hours		17
<b>Second Term</b>		
GEPL 2010 Fundamentals Of Geography		3
ENGL 1130 College Composition II: Academic Disciplines And Discourse		3
Elementary Foreign Language II		4
Arts/Humanities Core		3
Arts/Humanities Core (Fine Art)		3
Hours		16
<b>Third Term</b>		
GEPL 2110 Maps and Map Analysis		3
GEPL 4530 Principles Of Urban Planning		3
Intermediate Foreign Language I or approved culture course		3
Natural Sciences Core		3

Natural Sciences Core (Lab)	1
ENGL 2710-2800 Arts/Humanities Core (English Lit)	3
Hours	16
<b>Fourth Term</b>	
GEPL 4210 Land Use Planning	3
GEPL Major Elective	3
Intermediate Foreign Language II or approved culture course	3
Social Sciences Core	3
Natural Sciences Core	3
Hours	15
<b>Fifth Term</b>	
GEPL 4420 Quantitative Methods in Geographic Research	3
Related or Minor course	3
Related or Minor course	3
Non-US Diversity	3
Elective (WAC)	3
Hours	15
<b>Sixth Term</b>	
GEPL 4110 Geographic Information Systems	3
GEPL 4750 Transportation Geography	3
GEPL Major Elective: Environmental Geograpjy	3
GEPL 3610 Conservation And Resources	
GEPL 3900 Environmental Planning	
GEPL 4540 Weather And Climate	
GEPL 4650 Physical Geography	
Related or Minor course	3
Diversity of US	3
Hours	15
<b>Seventh Term</b>	
GEPL 4600 Urban Design	3
GEPL 4990 Geography and Planning as Disciplines and Professions	1
GEPL Major Elective: Human Geography	3
GEPL 2030 Cultural Geography	
GEPL 2040 World Regional Geography	
GEPL 2050 World Cities	
GEPL 3440 Population Geography	
GEPL 3650 Industrial Geography	
GEPL 4160 Patterns Of World Development	
GEPL 4710 Urban Environments	
GEPL 4750 Transportation Geography	
GEPL 4810 Political Geography	
Related or Minor course	6
Elective	3
Hours	16
<b>Eighth Term</b>	
GEPL 4700 Community Planning Workshop	3
GEPL Major Elective <sup>1</sup>	3

Related or Minor course	3
Elective	5
Hours	14
Total Hours	124

<sup>1</sup> If no Writing Across the Curriculum (WAC) course has been taken in the major, this elective must be a WAC course.

## Minor in Geographic Information Science and Technology

Code	Title	Hours
<b>Required:</b>		
GEPL 2010	Fundamentals Of Geography	3
GEPL 2110	Maps and Map Analysis	3
GEPL 4110	Geographic Information Systems	3
GEPL 4180	Geographic Information Systems Applications	3
GEPL 4490	Remote Sensing Of The Environment	4
GEPL 4500	Digital Image Analysis	3
GEPL 4990	Geography and Planning as Disciplines and Professions	1
Total Hours		20

## Minor in Human and Environmental Geography

Code	Title	Hours
<b>Required Courses</b>		
GEPL 2010	Fundamentals Of Geography	3
GEPL 2110	Maps and Map Analysis	3
GEPL 4990	Geography and Planning as Disciplines and Professions	1
<i>Environmental Geography - Select one:</i>		3
GEPL 3610	Conservation And Resources	
GEPL 3900	Environmental Planning	
GEPL 4540	Weather And Climate	
GEPL 4650	Physical Geography	
<i>Human Geography - Select one:</i>		3
GEPL 2030	Cultural Geography	
GEPL 2040	World Regional Geography	
GEPL 2050	World Cities	
GEPL 3440	Population Geography	
GEPL 3650	Industrial Geography	
GEPL 4160	Patterns Of World Development	
GEPL 4710	Urban Environments	
GEPL 4750	Transportation Geography	
GEPL 4810	Political Geography	
<i>Regional Geography - Select one:</i>		3
GEPL 3030	Geography Of Europe	
GEPL 3050	Geography Of U.s. And Canada	

GEPL 3120	Geography Of Asia	
GEPL 3220	Geography Of Africa	
GEPL 3300	Geography of Latin America and the Caribbean	
<i>GIS and Technology (GIS&amp;T) - Select one:</i>		3 or 4
GEPL 4110	Geographic Information Systems	
GEPL 4490	Remote Sensing Of The Environment	
Total Hours		19-20

## Minor in Urban and Regional Planning

Code	Title	Hours
<b>Core Curriculum</b>		
GEPL 4210	Land Use Planning	3
GEPL 4530	Principles Of Urban Planning	3
GEPL 4600	Urban Design	3
GEPL 4700	Community Planning Workshop	3
GEPL 4750	Transportation Geography	3
GEPL 4990	Geography and Planning as Disciplines and Professions	1
<b>Electives</b>		
Select 1 of the following:		3
GEPL 3900	Environmental Planning	
GEPL 4570	Land Development And Planning	
GEPL 4710	Urban Environments	
Total Hours		19

## Department of History

Amy Pflugrad-Jackisch, Department Chair  
Charles Beatty-Medina, Undergraduate Advisor

## Advanced Placement Program

Refer to the University of Toledo's Registrar page at [https://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](https://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Degrees Offered

- B.A. in History (p. 75)
- Minor in History (p. 76)

### HIST 1010 Europe To 1600

[3 credit hours]

A survey of western Europe, including its ancient Jewish, Greco-Roman and Christian roots; the Middle Ages, Renaissance and Reformation.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

### HIST 1020 Europe From 1600

[3 credit hours]

A survey of European history from the 17th century to the present with emphasis on the major political, economic, social and cultural trends.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

### HIST 1050 World History To 1500

[3 credit hours]

A survey of the ancient world from the stone age to around 1500. Cultural and political topics are treated so as to compare the major civilizations.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

### HIST 1060 World History From 1500

[3 credit hours]

A survey of world history from 1500 to the present. Cultural and political topics are treated so as to draw comparisons between the most significant modern societies.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

### HIST 1070 The Contemporary World

[3 credit hours]

This thematic survey of the 20th century from a historical and global perspective emphasizes the origins of the world in which we live and discusses some of our alternative futures.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

### HIST 1080 East Asia To 1800

[3 credit hours]

Multidisciplinary introduction to traditional East Asia (origins-1800) with emphasis on the historical development, political traditions, socio-economic patterns, religious and philosophical values, and cultural accomplishments of China and Japan.

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

### HIST 1090 East Asia From 1800

[3 credit hours]

Multidisciplinary introduction to the history, civilization, political organization, international relations, social and economic patterns, and cultural trends of China and Japan since 1800.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

### HIST 1100 Latin American Civilizations

[3 credit hours]

A thematic survey from pre-Columbian times to the present. Covers Native American cultures, European colonial policies and institutions, independence movements, the emergence of new nations and twentieth-century problems.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**HIST 1110 African Civilization**

[3 credit hours]

General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**HIST 1120 Middle East Civilization**

[3 credit hours]

General cultural and historical survey of the Middle East and Islam from 600 to the 20th century. Includes topics in historical movements, literature, religion, and social and intellectual history.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**HIST 1130 Introduction To Historical Thinking**

[3-4 credit hours]

(Not for major credit) An introduction to the nature, concepts and skills of the discipline of history designed to improve historical awareness and the ability to think historically. Occasionally offered as a writing intensive course.

**Term Offered:** Spring, Fall

Core Arts & Humanities

**HIST 1200 Main Themes In American History**

[3 credit hours]

This thematic survey introduces students to historical theory, methods, and the primary sub-fields of American history from colonial conquest to the present day.

Core Arts & Humanities

**HIST 2000 Methods Seminar**

[4 credit hours]

Research techniques, writing of term papers and book reviews. Introduction to historiography. Offered as a writing intensive course.

**Term Offered:** Spring, Fall**HIST 2010 America To 1865**

[3 credit hours]

The development of the United States from its Native American and immigrant roots through the Civil War.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2020 America From 1865**

[3 credit hours]

Survey of American history since the Civil War, with special attention to political, social, economic and cultural developments.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2030 Great Americans**

[3 credit hours]

The careers of selected Americans in politics, business, science, religion and literature.

**Term Offered:** Fall**HIST 2040 Ancient Near East**

[3 credit hours]

Survey of the Sumerian, Babylonian, Hittite, Assyrian, Egyptian, Palestinian and Persian worlds.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**HIST 2050 Ancient Greece**

[3 credit hours]

Survey of the Greek and Hellenistic world.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2060 Ancient Rome**

[3 credit hours]

Survey of the Roman Republic and Empire.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2170 Great Britain To 1714**

[3 credit hours]

An introductory course on English history from the Roman conquest to 1714. Emphasis on the Norman conquest, social and political life in medieval England, the monarchy, and common law.

**Term Offered:** Summer, Fall**HIST 2180 Great Britain From 1714 To The Present**

[3 credit hours]

An introductory course on British history from the Hanoverian dynasty to the present. Emphasis on English maritime power, the industrial revolution and two world wars.

**Term Offered:** Spring**HIST 2190 Britain And Ireland**

[3 credit hours]

From the 17th to the 20th century, the mutual influences in literature and history of colony and colonizer are examined.

**Term Offered:** Spring**HIST 2250 World War I**

[3 credit hours]

World War I from origins to conclusion and its effect on the course of the 20th century. Political and diplomatic background, conduct, termination, technology, and the war's effect on society and the 20th century.

**Term Offered:** Fall**HIST 2260 World War II On Film**

[3 credit hours]

Analysis of contemporary and retrospective documentary film treatments of major aspects of World War II, with emphasis on their historical accuracy and authenticity.

**HIST 2280 Toledo: Emergence Of A City, 1750-1880**

[3 credit hours]

Early history of Toledo and the Maumee River Valley, including Indian settlement, imperial rivalries, Maumee Valley towns, economic growth, immigrant arrivals and the creation of neighborhoods.

**Term Offered:** Fall



**HIST 2290 Toledo: Metropolitan Era, 1880-1980**

[3 credit hours]

The growth of Toledo in the 20th century, including suburbanization, the city's leadership in the national Progressive Movement, Depression and New Deal, organized labor, individual suburbs, and recent problems.

**HIST 2340 American Indian History**

[3 credit hours]

An introduction to Indian-White relations from pre-Columbian times to present. Emphasizes tribes of the United States, Mexico and Canada.

**Term Offered:** Fall

Multicultural US Diversity

**HIST 2450 Canada To 1867**

[3 credit hours]

Canadian history from before European contact to Confederation. Considers European-Native contact, Canada as an extension of Europe and the beginnings of Canadian identities.

**HIST 2460 Canada Since 1867**

[3 credit hours]

Canadian history since Confederation. Considers expansion westward, constitutional development, continuing British vs. French, and European vs. Native tensions. Canada and the U.S., modern society, economy, politics.

**Term Offered:** Fall**HIST 2640 Medieval Russia**

[3 credit hours]

Russia from the 9th century to 1700, including Kievan and Moscovite Russia.

**Term Offered:** Fall

Multicultural Non-US Diversity

**HIST 2650 Modern Russia**

[3 credit hours]

Russia from 1700 to the present, including Imperial and Soviet Russia.

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 2700 Japan And World War II**

[3 credit hours]

A study of the factors behind Japan's entry into World War II with the United States and the Allied Powers and an in-depth treatment of Japan at war.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 2710 Postwar Japan**

[3 credit hours]

This course examines the development of Japan since the war. It focuses on the political, economic, social and cultural changes since 1945 and relates these factors to Japan's international relations.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 2720 History Of Tokyo**

[3 credit hours]

An examination of Japanese urban social and cultural history. Treats the foundations of Edo, transition to Tokyo, the modern rise, the great earthquake, the war, the Olympics and the present.

**HIST 2730 The Chinese Revolution**

[3 credit hours]

This course examines the process by which Mao Zedong and the Chinese Communist Party came to power. It treats the political, economic and social forces behind the Chinese revolution (1900-49).

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 2980 Special Topics**

[1-4 credit hours]

Topics selected by various instructors. May be repeated when the topic varies.

**Term Offered:** Spring, Fall**HIST 3100 European Middle Ages I**

[3 credit hours]

The history of Western Europe from its beginnings to the eve of the First Crusade.

**Term Offered:** Fall**HIST 3110 European Middle Ages II**

[3 credit hours]

Europe from the First Crusade to the late fifteenth century.

**Term Offered:** Spring**HIST 3120 Women in Medieval Europe**

[3 credit hours]

Women's lives in medieval Europe from a range of perspectives, including noblewomen, townswomen, peasant women, religious women. Students will gain an appreciation of how medieval women's lives were different from and similar to those of modern women, as well as a broader understanding of the European middle ages.

**HIST 3130 Tudor England**

[3 credit hours]

Tudor England from 1485 to the end of the reign of Elizabeth I, emphasizing political, economic and social developments.

**HIST 3160 The American West**

[3 credit hours]

Settlement since the Civil War; mining rushes and Indian wars; violence and outlaws; farming and cattle ranching. Twentieth-century politics; ethnicity; and economics. Growth of California and the Sunbelt states.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**HIST 3190 Britain From 1763 To 1832**

[3 credit hours]

An intensive examination of the slave trade, factory system, radicalism, Parliamentary Reform, insurrection, by means of reading primary sources such as Tom Paine.

**HIST 3200 Colonial Latin America**

[3 credit hours]

Latin American history to 1825. Covers pre-Columbian Indian civilizations including Aztecs and Incas; Spanish and Portuguese conquests and Africans in the Americas; colonial policies and institutions; colonial society and independence movements.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 3210 Modern Latin America**

[3 credit hours]

Major economic, political and social developments from independence to the present. Covers the export boom, neocolonialism, nationalism, and revolutions in Latin America. Considers how, in spite of the region's tremendous diversity, there is a shared "Latin American" experience.

**Term Offered:** Spring, Summer

Multicultural Non-US Diversity

**HIST 3230 Early Caribbean History**

[3 credit hours]

This course covers the history of the early Caribbean through emancipation in the mid-nineteenth century. Topics include: The Carib and Taino Indians, European exploration and colonization, the Atlantic slave trade, and the golden age of piracy.

**HIST 3240 Modern Caribbean History**

[3 credit hours]

This course examines Caribbean history in the nineteenth and twentieth centuries. Topics include: history of Caribbean culture and music, migration, tourism, and social, political, and economic challenges of the twentieth century.

**HIST 3250 African-American History To 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.

**Term Offered:** Fall

Multicultural US Diversity

**HIST 3260 African-American History From 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States since 1865.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**HIST 3270 The City In American History, 1607-1850**

[3 credit hours]

Examination of early American urban development and culture. Topics include the development of urban infrastructure, crime and disorder; moral reform; religious revival; immigration; prostitution; the development of commercial entertainment.

**Term Offered:** Spring, Fall**HIST 3280 City And Metropolis In Modern America, 1850 To The Present**

[3 credit hours]

The growth of the 19th-century city and the emergence of the 20th-century American metropolis. Urban problems of the 20th century.

**Term Offered:** Spring, Fall**HIST 3290 Ohio History**

[3 credit hours]

From colonial times to the present.

**Term Offered:** Spring, Summer, Fall**HIST 3310 Ethnic America**

[3 credit hours]

American ethnic diversity from the colonial era to recent decades. A study of individuals and groups. Topics include American identity and Americanization, migration, legislation, nativism.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**HIST 3320 Indians In Eastern North America**

[3 credit hours]

Native Americans in Eastern North America from prehistoric times through Jacksonian Indian Removal. Emphasis on intercultural interactions.

**HIST 3330 Western American Indians**

[3 credit hours]

Native Americans of the Far West from prehistoric times through recent years. Emphasis on European contact and governmental policies.

**Term Offered:** Spring**HIST 3360 American Intellectual History I**

[3 credit hours]

Development and influence of major ideas from the colonial period to 1865. Topics include Puritanism, the Enlightenment, Democracy and Transcendentalism.

**Term Offered:** Spring**HIST 3370 American Intellectual History II**

[3 credit hours]

Major developments in American thought from 1865, including Social Darwinism, pragmatism, ideological conflict, modern science, education.

**Term Offered:** Spring**HIST 3380 Business And American Society**

[3 credit hours]

The growth of American business from the eighteenth century to the present. Examines enterprise and its relationship to culture, politics, technological developments and economic change.

**Term Offered:** Spring, Fall**HIST 3410 American Social And Cultural History, 1850-The Present**

[3 credit hours]

American social and cultural patterns, institutions and forces from the mid-19th century to the present.

**Term Offered:** Fall**HIST 3420 American Military History**

[3 credit hours]

The development of the strategy, tactics, organization, operation and policies of the armed forces of the U.S.; the interaction with technological factors, foreign policy goals, international problems and American society.

**Term Offered:** Fall**HIST 3430 American Military History In The 20th Century**

[3 credit hours]

Intensive examination of the history of land, sea, air and intelligence factors. Emphasizes the historical development of the strategy and tactics of wars, peacetime planning, technological developments and military-societal relationships.

**HIST 3440 American Radicalism**

[3 credit hours]

Origins and development of radical social movements and their ideologies from the American Revolution to the New Left of the 1960s. Abolitionism, Feminism, Communitarianism, Marxism, Anarchism, Populism, Communism and the Peace Movement are among the topics to be studied.

**Term Offered:** Fall

**HIST 3470 U.S. Disability History**

[3 credit hours]

Provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States

**Term Offered:** Spring, Fall

**HIST 3480 American Labor And Working Class History**

[3 credit hours]

Development of working class communities, cultures, organizations and ideology from colonial era to the present. Topics include industrialization, unionization, labor law, gender and race constructions.

**Term Offered:** Spring

Multicultural US Diversity

**HIST 3500 European Diplomacy 1648-1815**

[3 credit hours]

The foreign policies and foreign relations of the great powers from 1648 to the Congress of Vienna, 1815.

**HIST 3530 20th Century Germany**

[3 credit hours]

Germany's development from the end of World War I to the present with emphasis on the rise of Nazism, World War II, and the division and new unification of Germany.

**Term Offered:** Fall

**HIST 3540 History Of The Middle East From 600 To 1500**

[3 credit hours]

A survey of Middle East history from the emergence of Islam and the formation of Islamic states until the establishment of the Ottoman and Persian empires in the 15th-16th centuries.

Multicultural Non-US Diversity

**HIST 3550 History Of The Middle East Since 1500**

[3 credit hours]

History of the Middle East from the collapse of the Medieval Muslim States and the rise of the Ottoman Empire in the 16th century through the period of European intervention to the development of independent Middle Eastern states in the 20th century.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 3560 Early Modern France**

[3 credit hours]

A survey of early modern French history from c. 1600-1789.

**HIST 3600 Women In American History**

[3 credit hours]

This course presents American history from early settlement to the present by examining the contributions of women, in interaction with men, to the immensely complex fabric of American life.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**HIST 3870 Junior Honors Research I**

[3 credit hours]

Independent research on specific historical topics.

**Term Offered:** Spring, Summer, Fall

**HIST 3880 Junior Honors Research II**

[3 credit hours]

Independent research on specific historical topics.

**Term Offered:** Spring, Fall

**HIST 3980 Special Topics**

[1-4 credit hours]

Topics selected by various instructors. May be repeated when the topic varies.

**Term Offered:** Spring, Summer, Fall

**HIST 4010 Greek History**

[3 credit hours]

Selected topics on the political and social institutions of Greece in the classical and Hellenistic periods.

**Term Offered:** Fall

**HIST 4020 Roman History**

[3 credit hours]

Selected topics on the political and social institutions of Rome during the Republic and Empire.

**Term Offered:** Spring

**HIST 4030 Europe In The 14th-15th Centuries**

[3 credit hours]

The late Middle Ages and the development of the Renaissance in Western Europe.

**HIST 4060 Age Of Absolutism**

[3 credit hours]

The growth and decline of the absolute monarchies in Europe and the development of a world market economy, c.1550-1715.

**HIST 4080 Age Of Revolution**

[4 credit hours]

The age of the French Revolution and Napoleon, c.1785-1848.

**HIST 4100 Europe Since World War I**

[3 credit hours]

Internal and international development of the major European states from World War I to the end of the twentieth century.

**HIST 4150 Critics Of Victorian Society**

[3 credit hours]

Principal critics of society like Ruskin, Carlyle, Cobbett, Marx, Engels, Morris, Mill are read with a view to understanding capitalism, industrialism and England.

**HIST 4170 The British Empire: For And Against**

[3 credit hours]

The emergence of England as a maritime power, as an empire, and as a financial force, with emphasis upon resistances and decolonization.

**Term Offered:** Fall

**HIST 4180 Topics In English Social And Economic History**

[3 credit hours]

Selected topics on English society and economy will be covered, such as urbanization, family and gender relations, enclosures, work and crafts.

**HIST 4200 Colonial Foundations Of U.s.**

[3 credit hours]

Colonial America from early settlement to the eve of the American Revolution. Examination of the American Colonies from an Atlantic perspective, focusing on European motivation for settlement, European-Native American relations, the origins and development of slavery, religious and economic change, and the creation of early American culture.

**Term Offered:** Fall

**HIST 4210 Women In Early America**

[3 credit hours]

Examination of the evolution of women's experience in the United States from colonization to the Civil War era.

**Term Offered:** Fall

Multicultural US Diversity

**HIST 4220 The American Revolution**

[3 credit hours]

Examination of the decades surrounding the American Revolution and America's transformation from British colony to independent republic. Political and social origins of the Revolution; formation of the republican state; changing notions of citizenship and equality; the role of political leaders in society; social and cultural consequences of the Revolution.

**Term Offered:** Fall**HIST 4230 United States Early Republic**

[3 credit hours]

History of the ratification of the United States Constitution; Growth and expansion of federal authority; development of financial and judicial institutions and the first political parties; early American foreign policy; and the creation of American identity and democratic political culture.

**Term Offered:** Spring**HIST 4240 The Age Of Jackson**

[3 credit hours]

Exploration of the major social, economic and political developments in the United States in the decades leading up to the Civil War. The creation of a market society; religion and reform; westward expansion; slavery and abolition; the origins and development of the second-party system; the politics of slavery

**HIST 4250 Civil War And Reconstruction**

[3 credit hours]

Slavery and the Constitution in the sectional controversy, the political and military events of the Civil War, and the impact of the war on American society, 1848-1876.

**Term Offered:** Spring, Fall**HIST 4260 Emergence Of Modern America, 1876-1919**

[3 credit hours]

American society in the late 19th and early 20th centuries including industrialization, urbanization, immigration, agrarian and labor revolts, politics, economic expansion, overseas initiatives, Progressive reform and involvement in World War I.

**Term Offered:** Spring**HIST 4270 20th Century America, 1920-1945**

[3 credit hours]

Social, political and economic development of the United States, 1920-1945. The Republican ascendancy, the car culture, Great Depression, New Deal and World War II.

**Term Offered:** Fall**HIST 4280 U.s. Since 1945: Affluence And Anxiety**

[3 credit hours]

Social, economic and political development of the United States since 1945. The Cold War, McCarthyism, Eisenhower Equilibrium, the New Frontier and the Great Society, civil rights, Watergate and the Reagan Revolution.

**Term Offered:** Spring, Fall**HIST 4290 US Women from 1865**

[3 credit hours]

A survey of women in the United States from 1865. Covers women's political, economic, and social participation in American life. Particular attention is given to the life experiences of women from a diversity of racial, ethnic, sexual, and socio-economic backgrounds.

**Term Offered:** Spring, Fall**HIST 4310 History Of Native American Religious Movements**

[3 credit hours]

History of Native American revitalization movements as a response to European colonization and Indian dispossession.

**HIST 4340 Far Western Frontier**

[3 credit hours]

Native Americans; Spanish conquistadors and missionaries; American scientific and military exploration; mountain men and fur trade; international rivalries and Mexican War; gold rush of '49.

**HIST 4430 Slavery In America**

[3 credit hours]

Stresses the African continuum among slaves within the context of variations in goals and policies of slaveowners, slave trade, slave economics, demographics, slave labor and formation of slave culture.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**HIST 4450 The United States And Latin America**

[3 credit hours]

Examines the 19th and 20th centuries: emphasizing events and movements defining political, economic, migratory, military, and cultural relations and the emergence of Latinos as largest minority group in the US.

Multicultural US Diversity

**HIST 4470 People And Politics In Mexico**

[3 credit hours]

Mexican history from pre-Hispanic times to the present. Emphasis on the political, social and economic changes imposed by the Spaniards; the legacy of colonialism on the modern nation; the Mexican Revolution and the "Mexican Miracle."

**Term Offered:** Summer, Fall

Multicultural Non-US Diversity

**HIST 4490 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

**Term Offered:** Spring, Fall**HIST 4620 Central Europe**

[3 credit hours]

Central Europe from medieval times to the present. The Habsburg Empire, Poland, the Balkans, twentieth-century changes.

**HIST 4660 Imperial Russia, 1700-1917**

[3 credit hours]

Rise and fall of the Russian Empire. Politics and society from the time of Peter the Great to the 1917 Revolution.

Multicultural Non-US Diversity

**HIST 4680 20th Century Russia**

[3 credit hours]

Russia from the 1917 Revolution to the present. Topics include Marxism, Communism, Stalinism, Cold War. Multicultural Non-US Diversity

**HIST 4720 Modern Chinese History**

[3 credit hours]

China in transition under the impact of the West; forces leading to the revolution of 1911, the Nationalists' struggle, the emergence of the People's Republic of China and aspects of post-revolutionary China.

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 4740 Modern Japanese History**

[3 credit hours]

Japan in transition under Western influence, forces leading to the Meiji Restoration, the modernization of Japan, Japan's rise as a world power, war and postwar developments.

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 4750 Europe And Asia: Exploration And Exchange, 1415-1800**

[3 credit hours]

Motivation and process of European expansion to Africa and Asia from 1415-1800.

**HIST 4790 The Holocaust**

[3 credit hours]

This advanced course deals with selected aspects of the history and memory of Nazi genocide against the Jews of Europe, with special emphasis on visual and survivor sources.

**Term Offered:** Spring**HIST 4830 Theory Of Public History**

[3 credit hours]

The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

**HIST 4840 Public History Practicum**

[3 credit hours]

Course provides students with hands-on experience in the practice of public history by completing a project using specialized techniques, client-oriented research and teamwork. May be repeated for credit.

**Term Offered:** Spring**HIST 4870 Senior Honors Research I**

[3 credit hours]

Open to College Honors students, to History Honors students and to Honors students from other departments. Independent research in specific topics.

**Term Offered:** Spring, Summer, Fall**HIST 4880 Senior Honors Research II**

[3 credit hours]

Open to College Honors students, to History Honors students and to Honors students from other departments. Independent research in specific topics.

**Term Offered:** Spring, Fall**HIST 4940 Public History Internship**

[0-8 credit hours]

Supervised experiential learning in history.

**Prerequisites:** (HIST 2000 with a minimum grade of D- and HIST 4830 with a minimum grade of D-)

**Term Offered:** Spring, Fall**HIST 4980 Special Topics**

[1-4 credit hours]

Topics selected by various instructors.

**Term Offered:** Spring, Fall**HIST 4990 Independent Studies**

[1-4 credit hours]

Research and writing on topics designed to meet individual needs.

**Term Offered:** Spring, Summer, Fall

## Honors in History

Qualified students are invited to work for the degree citation "honors in history."

- Admission:** History majors who demonstrate unusual promise in the study of history are invited by the department to enroll in the University Honors Program; departmental honors may be pursued concurrently. Admission to departmental honors is based on the following:
  - Sophomore standing
  - Overall minimum GPA of 3.0
  - A minimum GPA of 3.3 in all history courses (a minimum of 10 hours)
  - Recommendation from two professors
  - An interview with the Advisor
- Requirements:** To earn departmental honors in history, each student will satisfactorily complete the following. The required credit hours are included among the 33 hours necessary for the major in history.
  - Honors recognition in two history courses. Honors recognition courses are regularly scheduled 3000 to 4000 level courses in which special recognition is achieved by reading and research in addition to the normal requirements of the course.
  - Three hours of independent research under Junior Honors Research (HIST 3870).
  - Six hours of thesis under Senior Honors Research (HIST 4870, HIST 4880) leading to the completion of a senior thesis.
  - Oral examination covering the area of the senior thesis.

## B.A. in History

The major of 33 hours in History must be distributed as follows:

Code	Title	Hours
<b>Required Courses</b> <sup>1</sup>		
HIST 2000	Methods Seminar	4
Three courses in fields of United States history		9
Three courses in fields of non-United States history		9
11 additional hours		11
<b>Total Hours</b>		<b>33</b>



<sup>1</sup> 12-16 hours (4 courses) must be at the 4000 level.

Additionally, history majors must complete a minor, a second major, or meet the requirement of 18 hours in “related fields” courses. These classes are chosen from at least 3 of the following areas: economics, political science, English and American literature, foreign language, geography, philosophy, sociology, psychology, art history, music history, women’s and gender studies, or theatre history. Courses accepted to meet this requirement are listed in the student Degree Audit Report. At least 12 of the hours in related courses must be at the 3000 and 4000 levels.

The related fields course requirement may be met with completion of a minor in another discipline or a second major. However, students are required to meet with an advisor to verify and approve their selection in advance as most approved minors and second majors are in either the College of Arts and Letters or the College of Natural Sciences and Mathematics.

Student may not take P/NC for the minimum requirements for the major, but may opt for P/NC in related courses.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
HIST 1010-1200 Arts/Humanities (History)		3
Elementary Foreign Language I		4
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
Arts/Humanities Core (Fine Arts)		3
General Elective		2
Hours		16
<b>Second Term</b>		
HIST Major Elective		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
MATH 1180	Reasoning With Mathematics	3
Social Sciences Core		3
Hours		16
<b>Third Term</b>		
HIST 2000	Methods Seminar	4
Intermediate Foreign Language I or approved culture course		3
Natural Sciences Core		3
Social Sciences Core		3
Elective		3
Hours		16
<b>Fourth Term</b>		
HIST Major Elective		6
Intermediate Foreign Language II or approved culture course		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1

Social Sciences Core	3
Hours	16
<b>Fifth Term</b>	
HIST 3000-4000: Major Elective	6
ENGL 2710-2800 Arts/Humanities (English Lit)	3
Natural Sciences Core	3
Related or Minor course	3
Hours	15
<b>Sixth Term</b>	
HIST Major Elective 4000-level	6
Related or Minor course	6
Elective	3
Hours	15
<b>Seventh Term</b>	
HIST Major Elective 4000-level	6
Related or Minor course	6
Elective	3
Hours	15
<b>Eighth Term</b>	
HIST Major Elective	3
Related or Minor course	6
Elective	6
Hours	15
Total Hours	124

## Minor in History

The minor of 21 hours in History must be distributed as follows:

Code	Title	Hours
HIST 2000	Methods Seminar	4
Of the remaining 17 hours, 9 hours must be at the 4000-level.		17
Total Hours		21

## Department of Music

### Accredited by National Association of Schools of Music (NASM)

Dr. Lee Heritage, Interim Chair, Undergraduate Advisor, B.M., B.A., Music Minors

Norm Damschroder, Undergraduate Advisor, jazz

Dr. Timothy D. Brakel, Undergraduate Advisor, instrumental music education

Dr. Pamela Stover, Undergraduate Advisor, choral/general music education

Dr. David Jex, Graduate Advisor, M.M. in Performance, M.M.E.

## Advanced Placement

Please see Registrar’s website for information on Advanced Placement ([http://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](http://www.utoledo.edu/offices/registrar/student_records/advan_credits.html)).

## Audition

In addition to acceptance into the university, students who wish to major in music or music education must pass an entrance audition. All applicants must meet appropriate minimum standards through this audition before being granted admission to the Department of Music. Music majors and minors are required to demonstrate proficiency in one or more of the following instruments: piano, symphonic instruments (strings, woodwinds, brass, percussion), guitar, voice, or harp. This audition is heard by a faculty jury and is closed to all except the area faculty concerned. Students are expected to be prepared to play or sing representative works of acceptable repertoire. A student may be accepted, accepted on provisional status, or denied admission to music degree work based on the entrance audition. Please visit our Web site [www.utoledo.edu/comm-arts/music](http://www.utoledo.edu/comm-arts/music) (<http://www.utoledo.edu/comm-arts/music>) and click on "Audition Signup" or call the Department of Music office at 419.530.2448. Click here for audition guidelines (<http://www.utoledo.edu/al/svpa/music/degrees/audition.html>).

## Degrees Offered

The Department of Music is a fully accredited member of the National Association of Schools of Music, and its degree requirements are in accordance with the latest published regulations of that association.

Following are the undergraduate degrees offered by the Department of Music:

- B.A. in Music (p. 84)
- Bachelor of Music (p. 85)
- Bachelor of Music Education (p. 98)
- Instrumental Minor (p. 98)
- Jazz Minor (p. 99)
- Keyboard Minor (p. 99)
- Music Business and Recording Arts Minor (p. 100)
- Music History and Literature Minor (p. 100)
- Music Technology Minor (p. 101)
- Music Theory Minor (p. 101)
- Vocal Minor (p. 101)

### MUS 1000 Performance Laboratory

[0 credit hours]

Required of music majors and minors. Weekly departmental student recitals. Offered as P/NC only.

**Term Offered:** Spring, Fall

### MUS 1010 Concert Attendance

[0 credit hours]

Required of music majors and minors. Attend 8 department concerts and 2 non-department concerts. Offered as P/NC only.

**Term Offered:** Spring, Fall

### MUS 1100 Introduction To Music Technology

[1 credit hour]

This course introduces students to music applications for sound recording, music notation, and virtual sound design. Students also discover basic tools of the trade such as microphones, speaker monitors, portable recording devices, and current trends within social media relating to self-promotion in music.

**Term Offered:** Spring, Fall

### MUS 1200 Group Guitar For The Non-Major

[2 credit hours]

Basic guitar skills: note reading, chords, accompaniment, variety of musical styles. Includes rhythmic and aural training, theory and ensemble playing. Each student must provide their own guitar.

**Term Offered:** Spring, Fall

### MUS 1250 Group Piano For The Non-Major I

[2 credit hours]

Classical and popular literature in a variety of styles and period will be explored. May be repeated for credit. Students may take P/NC.

**Term Offered:** Spring, Fall

### MUS 1280 Group Voice For The Non-Major

[2 credit hours]

Develops basic vocal techniques with attention to the principles of voice production, vowel formation, breathing, articulation and flexibility. May be repeated for credit. Open to all students regardless of major. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

### MUS 1500 String Class

[2 credit hours]

Principles, concepts, difficulties typical of stringed instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

### MUS 1510 Percussion Class

[2 credit hours]

Principles, concepts, difficulties typical of percussion instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

### MUS 1530 Brass Class

[2 credit hours]

Principles, concepts, difficulties typical of brass instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

### MUS 1550 Woodwinds Class

[2 credit hours]

Principles, concepts, difficulties typical of woodwind instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

**MUS 1560 Instrumental Class**

[3 credit hours]

An overview of principles, concepts and difficulties typical of string, brass, woodwind and percussion instruments.

**Corequisites:** MED 1000**Term Offered:** Fall**MUS 1570 Piano Class For Music Majors I**

[1 credit hour]

Progressive sequence of keyboard skills courses stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

**Term Offered:** Spring, Summer, Fall**MUS 1580 Piano Class For Music Majors II**

[1 credit hour]

Provides instruction in keyboard skills required for the various degree programs. Progressive sequence of courses stressing technique, repertoire, sight reading, harmonization, transposition. Includes keyboard technology.

**Prerequisites:** MUS 1570 with a minimum grade of C**Term Offered:** Spring**MUS 1590 Jazz Piano Class**

[1 credit hour]

Provides instruction in jazz keyboard skills, including jazz techniques, voicings, repertoire, sight reading and harmonization.

**Prerequisites:** MUS 1570 with a minimum grade of C**Term Offered:** Spring**MUS 1610 Music Theory And Ear Training I**

[4 credit hours]

Dictation, ear training and sight singing skills in rhythm, melody and harmony. Basic theoretical skills include key signatures, clefs, notation of scales, chords and rhythm patterns. Includes computer technology.

**Term Offered:** Fall**MUS 1620 Music Theory And Ear Training II**

[4 credit hours]

Continuation of 1610. Emphasis on melody dictation and sight singing. Additional skill development in harmonizations, figured bass and study of basic forms. Includes computer technology.

**Prerequisites:** MUS 1610 with a minimum grade of C**Term Offered:** Spring**MUS 1700 Jazz Fundamentals**

[2 credit hours]

Introduction to jazz performance practices, nomenclature, chord and music notation, analysis and improvisation.

**Prerequisites:** MUS 1610 with a minimum grade of C**Term Offered:** Spring**MUS 1800 Applied Music**

[1-4 credit hours]

Private music lessons for first-year music majors and minors. Must be taken twice, and a grade of B or better is required in each semester.

**Term Offered:** Spring, Summer, Fall**MUS 1810 Applied Music For The Non-Major**

[1-2 credit hours]

Private music lessons for provisional and non-music majors. May be repeated for credit. Limited by instructor availability.

**Term Offered:** Spring, Summer, Fall**MUS 2200 Music Theory For The Non-Major**

[3 credit hours]

Introduction to the fundamentals of music, including notation, key, time signatures, rhythm, intervals, triads and chords, dominant 7th chords, cadences, and introduction to elementary aural skills. Students may take P/NC. Not for major credit.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities

**MUS 2210 Introduction To Music**

[3 credit hours]

The study of vocal and instrumental music from the standard repertoire primarily through listening. Previous music training is not required, but regular listening is part of the course. Not for major credit. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

**MUS 2220 History Of Jazz**

[3 credit hours]

A study of the development of jazz styles, including listening skills and historical perspectives. Because the major innovations and styles of jazz are a result of contributions from African Americans and other ethnicities, the course includes a study of how different time periods influenced the development of jazz and our culture. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

**MUS 2240 History Of Rock And Roll**

[3 credit hours]

A study of the styles, techniques and history of rock and roll. Students may take P/NC. Not for major credit.

**Term Offered:** Summer, Fall

Core Arts &amp; Humanities

**MUS 2250 Musical Diversity In The United States**

[3 credit hours]

The cultures of various ethnic groups (Native Americans, African-American, Mennonite, Moravian, Creole and others) are examined, especially as they relate to the development of folk, popular and art music styles in the United States. This course includes listening. Students may take P/NC. Not for major credit.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

**MUS 2260 Electronic Music**

[2 credit hours]

Both lecture sessions and creative lab assignments. Students start with a basic introduction to the physics of music and sound, professional applications for sound design, MIDI, music-recording, and current personal music-publishing within the internet at large.

**Term Offered:** Spring, Fall

**MUS 2270 Recording Techniques**

[2 credit hours]

Both lecture sessions and creative lab assignments. Students examine the physical aspects of sound and hearing. Recording transducers from microphones to monitors, mixing consoles, MIDI and music technology in the contemporary recording studio are all examined. Current personal music-publishing within the internet at large are presented.

**Term Offered:** Spring, Fall**MUS 2280 Survey Of The Music Business**

[3 credit hours]

An indepth study of the music business nationally and internationally. Music making, publishing, copyright law, management, broadcast in radio and film, and business affairs are examined.

**Term Offered:** Summer, Fall**MUS 2410 Music History And Literature I: World Music And Jazz**

[3 credit hours]

A study of music from various world cultures and jazz. A special emphasis is placed on developing listening skills.

**Term Offered:** Spring**MUS 2420 Cultures And Music Of Non-Western Styles**

[3 credit hours]

An introduction to world music. The course provides overviews of the geography, the social and political environments, the religious practices and spiritual beliefs, and the cultural heritages of people and countries, such as Central Asia, South Asia, Africa, Caribbean, Korea, Japan, Latin America, Native American, Jazz in America, and American Pop, and American Country. Student may take P/NC

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**MUS 2520 Intro to Voice and Diction 1**

[2 credit hours]

Intro to Voice and Diction I: Voice for Freshman and Vocal Diction - a combined course designed to train the singer in how to function in voice lessons through skill building sets such as; develop a process to learn repertoire, learn and understand International Phonetic Alphabet sounds and demonstrate that knowledge through practical application to vocal technique and repertoire. This creates contextual learning, while building a foundation of experiential knowledge for future training.

**Corequisites:** MUS 1800**Term Offered:** Fall**MUS 2530 Diction For Singers I**

[1 credit hour]

International Phonetic Alphabet mastery; pronunciation of English, German, Latin, Italian and French in relation to art song and aria form, emphasis on the sound of the language. Meets two hours per week.

**Term Offered:** Fall**MUS 2540 Diction For Singers II**

[1 credit hour]

Continuation of MUS 2530. IPA; pronunciation of German and English in relation to art song and aria form; emphasis on the sound of the language. Meets two hours per week.

**Prerequisites:** MUS 2530 with a minimum grade of C**Term Offered:** Spring**MUS 2550 Voice Class For Music Majors**

[1 credit hour]

For instrumental and keyboard majors. Develops basic vocal techniques with attention to the principles of voice production, vowel formation, breathing, articulation and flexibility. May be repeated for credit.

**Prerequisites:** MUS 1620 with a minimum grade of C**MUS 2560 Introduction to Voice and Diction 2**

[2 credit hours]

Intro to Voice and Diction II: Voice for Freshman and Vocal Diction – The second class designed to build upon the skills discussed and demonstrated in Intro to Voice and Diction I. This class will concentrate on the continued skills required to learn more advanced vocal repertoire such as the operatic aria or Romantic song cycle. Advanced, International Phonetic Alphabet sounds and symbols will be part of tools used to aid in the pronunciation and recognition in German and French classical repertoire. More advanced concepts such as acoustical physics and resonance in the human instrument will also be introduced and discussed. This creates contextual learning, while building a foundation of experiential knowledge for future training.

**Prerequisites:** MUS 2520 with a minimum grade of D-**Corequisites:** MUS 1800**Term Offered:** Spring**MUS 2570 Piano Class For Music Majors III**

[1 credit hour]

Provides instruction in keyboard skills required for the various degree programs. Progressive sequence of courses stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

**Prerequisites:** MUS 1580 with a minimum grade of C**Term Offered:** Fall**MUS 2580 Piano Class For Music Majors IV**

[1 credit hour]

Provides instruction in keyboard skills required for the various degree programs. Progressive sequence stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

**Prerequisites:** MUS 2570 with a minimum grade of C**Term Offered:** Spring**MUS 2590 Class Piano For Piano Majors**

[2 credit hours]

MUS-2590 KEYBOARD FUNDAMENTALS for PIANO MAJORS, to be taken in conjunction with music theory. Fundamental keyboard skills including harmony, technique, transposition, improvisation, sight reading, score reading, and ensemble playing.

**Corequisites:** MUS 1610, MUS 2610**MUS 2610 Music Theory And Ear Training III**

[4 credit hours]

Continuation of 1620. Students develop proficiency in all musical elements through analytical, written and aural studies. Primary materials are the common practice period literature and small formal units. Includes computer technology.

**Prerequisites:** MUS 1620 with a minimum grade of C**Term Offered:** Fall

**MUS 2620 Music Theory And Ear Training IV**

[4 credit hours]

Continuation of 2610. Students are introduced to contemporary topics, styles and music through analysis and creative assignments. Dictation and sightsinging studies will also develop topics from MUS 2610. Includes computer technology.

**Prerequisites:** MUS 2610 with a minimum grade of C

**Term Offered:** Spring

**MUS 2700 Jazz Improvisation I**

[2 credit hours]

Practical application of beginning jazz improvisation techniques as applied to modal, blues and simple jazz standards. Basic chord-scale relationships, ear training, and style analysis is presented.

**Prerequisites:** MUS 1700 with a minimum grade of C

**Term Offered:** Fall

**MUS 2710 Jazz Improvisation II**

[2 credit hours]

Practical application of intermediate jazz improvisation techniques as applied to jazz standards and bebop playing.

**Prerequisites:** MUS 2700 with a minimum grade of C

**Term Offered:** Spring

**MUS 2800 Applied Music**

[1-4 credit hours]

Private music lessons for sophomore music majors.

**Prerequisites:** MUS 1800 with a minimum grade of B

**Term Offered:** Spring, Summer, Fall

**MUS 2990 Special Projects**

[1-3 credit hours]

Designed to meet the needs of individual students who wish to pursue projects in the area of music.

**Term Offered:** Summer

**MUS 3010 University Band**

[1 credit hour]

Band ensembles include Wind Ensemble, Symphonic Band, Marching Band, and Varsity Pep Band. Ensembles open to all students. Contact the instructor for audition information.

**Term Offered:** Spring, Fall

**MUS 3020 Jazz Ensemble**

[1 credit hour]

Students rehearse and perform a diverse repertoire for large jazz ensemble. Open to all students by audition in the first week of each semester and/or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3030 Brass Choir**

[1 credit hour]

Open to a limited number of qualified students.

**Term Offered:** Spring

**MUS 3040 University Wind Ensemble**

[1 credit hour]

Open to a limited number of qualified students.

**MUS 3050 Chamber Music Ensembles**

[1 credit hour]

The study and performance of chamber music literature in classical or jazz styles. By permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3060 Symphonic Band**

[1 credit hour]

Students rehearse and perform a diverse concert band repertoire. Open to all students through audition or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3070 Varsity Band**

[1 credit hour]

Students rehearse and perform a diverse athletic band repertoire. Open to all students through audition or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3090 University Orchestra**

[1 credit hour]

Performs a variety of symphonic repertoire. Open to all students through audition.

**Term Offered:** Spring, Fall

**MUS 3100 Introduction to Opera I**

[1 credit hour]

Introducing young singers to the art form of opera through a blended model of lecture and skill building participation exercises.

**Term Offered:** Spring, Fall

**MUS 3120 Intro to Opera II**

[1 credit hour]

Part II of the Intro to Opera classes that prepare singers in the art form of opera through a blended model of lecture and skill building participation exercises as well as participation in the staged production by helping with production aspects such as costumes, set building, marketing, make-up, and super-titles.

**Prerequisites:** MUS 3100 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MUS 3130 University Chorus**

[1 credit hour]

This non-auditioned mixed (SATB) choral ensemble is open to any student. Performing music in a variety of styles, this ensemble places a primary focus on developing musicianship and basic vocal technique.

**Term Offered:** Spring, Summer, Fall

**MUS 3140 Concert Chorale**

[1 credit hour]

This large, auditioned, mixed (SATB) choral ensemble is made up of 40-60 singers. This group is primarily made up of non-music majors who excel in vocal technique and production and who display high-level musical ability. They perform regularly on and off campus. This ensemble requires an audition and instructor approval.

**Term Offered:** Spring, Fall

**MUS 3150 Jazz Vocalstra**

[1 credit hour]

Students rehearse and perform traditional vocal Jazz literature and Vocalese. Open to qualified students by audition at the beginning of each semester and/or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3160 Rocket Choristers**

[1 credit hour]

This non-auditioned treble voice (SSAA) choral ensemble is open to any student. Performing music in a variety of styles, this ensemble places a primary focus on developing musicianship and basic vocal technique.

**Term Offered:** Spring, Fall



**MUS 3170 Chamber Singers**

[1 credit hour]

This auditioned mixed (SATB) choral ensemble is the premiere choral ensemble at the University of Toledo. With a focus on advanced vocal techniques and performance, this ensemble requires an audition and instructor approval.

**Term Offered:** Spring, Summer, Fall

**MUS 3180 Glee Club**

[1 credit hour]

This non-auditioned Tenor/Bass voiced (TTBB) choral ensemble is open to any student. Performing music in a variety of styles, this ensemble places a primary focus on developing musicianship and basic vocal technique.

**Term Offered:** Spring, Fall

**MUS 3190 Opera Workshop**

[1 credit hour]

Performs both contemporary and classic Opera. Open to a limited number of qualified students.

**Term Offered:** Spring, Fall

**MUS 3200 Opera Production**

[1 credit hour]

Audition only ensemble, with pre-requisites required of Intro to Opera I and Intro to Opera II. This course is designed to provide students with a complete experience in developing the craft of opera from all aspects including marketing, backstage, on stage and the front of the house. This is an advanced performance course for upper division vocal performance students. Building on the skills and experience from (MUS 3100) Intro to Opera I and (MUS 3120) Intro to Opera II this course is designed to provide real-life professional experience in opera production.

**Prerequisites:** MUS 3100 with a minimum grade of D- and MUS 3120 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MUS 3260 Advanced Electronic Music**

[3 credit hours]

Both lecture sessions and creative lab assignments. Pre-requisite is MUS 2260 or by permission of the instructor. In particular, the current computer application Reason is examined and put to test in fine detail. Students will use the application in both sound-recording and virtual, MIDI instrument production. Lab productions are published.

**Prerequisites:** MUS 2260 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 3270 Advanced Recording Techniques**

[2 credit hours]

Both lecture sessions and creative lab assignments. Pre-requisite is MUS 2270 or by permission of the instructor. Material emphasizes music production in a professional recording studio. Students collaborate in the tracking, mixing, and mastering of complete song titles both originals and covers. Students will self-publish completed songs.

**Prerequisites:** MUS 2270 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 3280 Concert And Event Production**

[3 credit hours]

The presentation of cultural and commercial entertainment in the form of concert events is examined from artistic, technical, and business viewpoints. The roles of the cultural impresario and concert promoter in contemporary society are examined.

**Prerequisites:** MUS 2280 with a minimum grade of D-

**MUS 3290 Music Industry Practicum**

[1 credit hour]

Provides a practical application of the skills acquired in MUS 3280, Concert and Event Production. Students gain experience working on various campus musical productions and events.

**Prerequisites:** MUS 3280 with a minimum grade of D-

**MUS 3410 Music History And Literature II**

[3 credit hours]

A study of the literature, composers, theorists, trends and musical style of Western Music from Plainchant through Early Classic.

**Term Offered:** Fall

**MUS 3420 Music History And Literature III**

[3 credit hours]

An intensive study of the music of the Late Classic period to the present day through the examination of major trends and styles.

**Term Offered:** Spring

**MUS 3450 Jazz History And Literature**

[3 credit hours]

An in-depth study of jazz styles, trends, performers and composers geared for music majors.

**Term Offered:** Spring

**MUS 3470 Theatre Sound**

[3 credit hours]

Students study the methods and techniques of sound production and design used in the theatre. Tools and techniques of audio production are used in laboratory recording and mixdown. (Alternate years.)

**Prerequisites:** MUS 2270 with a minimum grade of C or THR 1040 with a minimum grade of C

**MUS 3500 Conducting**

[2 credit hours]

Basic baton techniques and rehearsal routine applicable to both vocal and instrumental conducting. Preparation of scores and opportunity for conducting experience with student groups. Includes MUS 1000:002 and video recording technology.

**Prerequisites:** MUS 1620 with a minimum grade of C

**Term Offered:** Fall

**MUS 3510 Choral Conducting**

[2 credit hours]

Conducting techniques and rehearsal routine especially concerned with choral groups. Opportunities to direct choral groups. Includes MUS 1000:002 and video recording technology.

**Term Offered:** Spring, Summer

**MUS 3520 Instrumental Conducting**

[2 credit hours]

Conducting techniques and rehearsal routine especially concerned with instrumental ensembles. Opportunities to direct student instrumental groups. Includes MUS 1000:002 and video recording technology.

**Prerequisites:** MUS 3500 with a minimum grade of C

**Term Offered:** Spring

**MUS 3530 Marching Band Techniques**

[1 credit hour]

The pedagogy and administration of marching bands in secondary schools. Includes practical laboratory experiences and use of relevant technology and software.

**Term Offered:** Fall

**MUS 3540 Jazz Synthesis**

[1 credit hour]

Instruction in the art of improvisation in the jazz style. A study of jazz harmony, melodic construction, keyboard voicings and practice materials. Lab instruction in combo performance techniques and repertoire. May be repeated for credit.

**Prerequisites:** MUS 2620 with a minimum grade of D-

**MUS 3550 Vocal Pedagogy and Literature 1**

[2 credit hours]

This class will provide students with a twofold practical application of how to teach varied forms of vocal literature as it relates to pedagogical strategies and vocal technique. This class also includes a Vocal Literature review from the Renaissance period to the 18th century Classical repertoire. This review of Vocal Literature would apply to pedagogical techniques such as stylistic considerations, phrasing, range, language and vocal demands through breath and support..

**Prerequisites:** MUS 2410 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MUS 3560 Jazz Pedagogy And Conducting**

[2 credit hours]

An in-depth study of Jazz pedagogical materials and methods as well as rehearsal and conducting techniques.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 3570 Guitar Pedagogy**

[3 credit hours]

Comprehensive study of techniques and materials for private and group guitar instruction.

**MUS 3580 Functional Piano Techniques**

[2 credit hours]

Designed for keyboard majors to develop functional skills and harmonization, improvisation, transposition, sight reading, score reading, etc. Successful completion of this course fulfills the piano requirement for student teaching and Licensure.

**Prerequisites:** MUS 2590 with a minimum grade of C

**Term Offered:** Spring

**MUS 3590 Piano Pedagogy**

[2 credit hours]

Exploration of techniques and materials for comprehensive, private and group instruction.

**Term Offered:** Spring, Fall

**MUS 3610 Form And Analysis**

[3 credit hours]

The study of musical structures: the theme, the motive, the phrase and analysis of homophonic and polyphonic forms and procedures.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Fall

**MUS 3630 Instrumentation**

[3 credit hours]

A study of wind, percussion and string instrumentation; scoring for small ensembles, band and orchestra. Opportunities for performances of student scores by university organizations. Includes computer technology.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Spring

**MUS 3650 Jazz Arranging And Composition I**

[3 credit hours]

Scoring for contemporary jazz ensembles. A study of jazz notations, voicing, orchestration and composition for small jazz groups and the rhythm section.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Fall

**MUS 3660 Jazz Arranging And Composition II**

[3 credit hours]

Advanced scoring for contemporary jazz ensembles. A study of notations, voicing, orchestration and composition for large jazz groups.

**Prerequisites:** MUS 3650 with a minimum grade of C

**Term Offered:** Spring

**MUS 3700 Jazz Improvisation III**

[2 credit hours]

Practical application of advanced jazz improvisation techniques as applied to post-bop, fusion and avant-garde playing.

**Prerequisites:** MUS 2710 with a minimum grade of C

**Term Offered:** Fall

**MUS 3710 Jazz Improvisation IV**

[2 credit hours]

Practical application of jazz improvisation techniques as applied to contemporary and chromatic jazz composition and performance.

**Prerequisites:** MUS 3700 with a minimum grade of C

**Term Offered:** Spring

**MUS 3800 Applied Music**

[1-4 credit hours]

Private music lessons for junior music majors.

**Prerequisites:** MUS 2800 with a minimum grade of B

**Term Offered:** Spring, Summer, Fall

**MUS 3810 Recital**

[1 credit hour]

A juried public performance of no more than 25-minutes of musical compositions selected from repertoire studied in MUS 3800 and in consultation with the student's major applied professor.

**Prerequisites:** MUS 2800 with a minimum grade of C

**Corequisites:** MUS 3800

**Term Offered:** Spring, Fall

**MUS 4290 Music Industry Internship**

[2-6 credit hours]

Designed to provide students with professional experience in their area of interest within the music industry; students may enroll for variable credit internships up to 6 credits.

**Prerequisites:** (MUS 3280 with a minimum grade of D- and MUS 3290 with a minimum grade of D- and MUS 2270 with a minimum grade of D- and MUS 3270 with a minimum grade of D-)

**MUS 4410 Instrumental Music Literature**

[3 credit hours]

Course will examine the development of the orchestral and chamber repertoire, from their origins to the present day.

**Prerequisites:** (MUS 2410 with a minimum grade of C and MUS 2420 with a minimum grade of C)

**Term Offered:** Spring

**MUS 4420 Vocal Pedagogy and Literature 2**

[2 credit hours]

This course is the second class in a two-semester sequence. This class will continue to build upon the twofold practical applications of how to teach varied forms of vocal literature as it relates to pedagogical strategies and vocal technique.

**Prerequisites:** MUS 3550 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MUS 4450 Keyboard Literature**

[3 credit hours]

A survey of piano or organ/harpsichord literature from earliest publications to the present. Emphasis on a particular period or genre at the discretion of the instructor.

**Term Offered:** Spring, Fall

**MUS 4460 Guitar History And Literature**

[3 credit hours]

The history and literature of the guitar, including a study of the Renaissance and Baroque lute, vihuela and Baroque guitar, 19th and 20th century instruments.

**MUS 4620 Counterpoint: Introduction**

[3 credit hours]

The study of counterpoint in modal, tonal, and contemporary styles. Studies include contrapuntal techniques such as imitation, canon, invertible counterpoint, non-harmonics and the balance of consonance and dissonance. Formal constructions studied include motets, canons, inventions, and fugues.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Spring

**MUS 4690 Seminar In Music Composition**

[2 credit hours]

May be repeated, but maximum accumulated credit is six hours toward graduation. Beginning composition including writing in the smaller musical forms. Opportunity for performance of original student compositions.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 4800 Applied Music**

[1-4 credit hours]

Private music lessons for seniors.

**Prerequisites:** MUS 3800 with a minimum grade of B

**Term Offered:** Spring, Summer, Fall

**MUS 4810 Recital**

[1 credit hour]

A juried public performance of no more than 50-minutes of musical compositions selected from repertoire studied in MUS 4800 and in consultation with a student's major applied professor.

**Prerequisites:** MUS 4800 with a minimum grade of B

**Corequisites:** MUS 4800

**Term Offered:** Spring, Fall

**MUS 4850 Advanced Vocal Pedagogy**

[3 credit hours]

An upper-division level course designed to more intricately address pedagogical strategies for vocal instruction, with an emphasis on surveying methods and research in singing voice specialization as it relates to vocal dysfunction and correction within the context of vocal instruction. This course aims to train future singer/vocal instructors to appropriately teach students of all ages and abilities, as well as diagnose and correct common vocal faults and dysphonias.

**Prerequisites:** MUS 3550 with a minimum grade of D- and MUS 4420 with a minimum grade of D-

**Term Offered:** Spring

**MUS 4980 Seminar: Special Topics**

[1-3 credit hours]

Critical inquiry into specific topics through lectures, class seminar reports and discussion. Seminar topics announced in semester schedule of classes.

**Term Offered:** Spring, Summer, Fall

**MUS 4990 Special Projects**

[1-3 credit hours]

Designed to meet the needs of individual students who wish to pursue projects in the area of music.

**Term Offered:** Spring, Summer, Fall

All music majors have an opportunity to qualify for a departmental honors citation in music if they maintain a minimum cumulative GPA of 3.0 through the junior year and at least a 3.5 average in 12 hours of work chosen from the following courses:

Code	Title	Hours
MUS 3450	Jazz History And Literature	3
MUS 3470	Theatre Sound	3
MUS 3610	Form And Analysis	3
MUS 3630	Instrumentation	3
MUS 3650	Jazz Arranging And Composition I	3
MUS 3660	Jazz Arranging And Composition II	3
MUS 4410	Instrumental Music Literature	3
MUS 4420	Vocal Pedagogy and Literature 2	2
MUS 4450	Keyboard Literature	3
MUS 4460	Guitar History And Literature	3
MUS 4620	Counterpoint: Introduction	3
MUS 4690	Seminar In Music Composition (may be taken only once toward honors credit)	2
MUS 4980	Seminar: Special Topics (may be an "honors only" section)	1-3

Students interested in honors recognition should complete an intent (to qualify) form available in the music office at the beginning of their

sophomore year. In the senior year, the faculty honors committee will invite qualified students to undertake a special three-hour project (MUS 4990) on a topic approved by the honors in music faculty. Each student will work with an assigned Advisor and present on oral defense of the completed project. Satisfactory work will be rewarded by an honors citation recorded in the student's permanent file and in the proper graduation bulletin.

## B.A. in Music

The major of 39 hours in music must be distributed as follows:

Code	Title	Hours
<b>Performance Laboratory</b>		
MUS 1000	Performance Laboratory (8 semesters) <sup>1</sup>	0
<b>Concert Attendance</b>		
MUS 1010	Concert Attendance (6 semesters) <sup>1</sup>	0
<b>Music Theory</b> <sup>2</sup>		
MUS 1610	Music Theory And Ear Training I	4
MUS 1620	Music Theory And Ear Training II	4
MUS 2610	Music Theory And Ear Training III	4
MUS 2620	Music Theory And Ear Training IV	4
<b>Music History and Literature</b> <sup>2</sup>		
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 3410	Music History And Literature II	3
MUS 3420	Music History And Literature III	3
<b>Class Piano</b> <sup>2</sup>		
Select two hours of the following: <sup>3</sup>		2
MUS 1570	Piano Class For Music Majors I	
MUS 1580	Piano Class For Music Majors II	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	
<b>Applied Vocal or Instrumental Instruction</b> <sup>4</sup>		
MUS 1800	Applied Music	4
MUS 2800	Applied Music	4
<b>Ensembles</b>		
Select one of the following ensembles on the major instrument: <sup>5</sup>		4
MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3050	Chamber Music Ensembles	
MUS 3090	University Orchestra	
MUS 3140	Concert Chorale	
MUS 3150	Jazz Vocalstra	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
Total Hours		39

<sup>1</sup> Transfer students will be required to complete a number of semesters proportionate to credits transferred.

<sup>2</sup> A grade of C or better is required in each course.

<sup>3</sup> Classes assigned by diagnostic test.

<sup>4</sup> Each course must be taken twice. A grade of B or better is required in each course.

<sup>5</sup> Each music major must enroll in one of the ensembles on the major instrument each semester of enrollment for 8 hours or more until graduation.

The minimum requirement is an accumulation of eight hours of ensemble credits, but only four hours may count toward the 124 hours required for the degree. BA music students whose principal instrument is the piano must enroll in MUS 3050.044 each semester unless they are directed to enroll in a different ensemble.

Students may elect an additional 11 hours of music courses beyond the required 39 hours of basic courses for a maximum of 50 hours of music within the 124 hours for the bachelor of arts degree. It is recommended that these additional courses include additional music history and literature courses and at least three additional semesters of applied music in the student's major performing area.

The requirement of 18 hours in related courses must be chosen from major level courses in the other humanities. Students may elect to present a full or half recital in their senior year.

*Below is a sample plan of study. Consult your degree audit for your program requirements*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MATH 1180	Reasoning With Mathematics	3
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music	2
MUS 3xxx	Large Ensemble	1
MUS 1570	Piano Class For Music Majors I	1
MUS 2220	History Of Jazz (Diversity of US)	3
MUS 1610	Music Theory And Ear Training I	4
Hours		15
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music	2
MUS 3xxx	Large Ensemble	1
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		15
<b>Third Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2800	Applied Music	2
MUS 3xxx	Large Ensemble	1
MUS 2610	Music Theory And Ear Training III	4

Elementary Foreign Language I	4
Social Sciences Core	3
Hours	14

**Fourth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2800	Applied Music	2
MUS 3xxx	Large Ensemble	1
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2620	Music Theory And Ear Training IV	4
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Elementary Foreign Language II		4
Hours		17

**Fifth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3xxx	Large Ensemble	1
MUS 3410	Music History And Literature II	3
Intermediate Foreign Language I or approved culture course		3
Minor or Related course		3
Humanities Core (History)		3
COMM Arts/Humanities Core		3
Hours		16

**Sixth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3xxx	Large Ensemble	1
MUS 3420	Music History And Literature III	3
Intermediate Foreign Language II or approved culture course		3
Minor or related courses		6
Natural Sciences Core		3
Hours		16

**Seventh Term**

MUS 1000	Performance Laboratory	0
MUS 3xxx	Large Ensemble	1
Social Sciences Core		3
Minor or related courses		6
Elective		6
Hours		16

**Eighth Term**

MUS 1000	Performance Laboratory	0
MUS 3xxx	Large Ensemble	1
MUS 2420	Cultures And Music Of Non-Western Styles (Non-US Diversity)	3
Core Elective		3
Minor or related course		3

Electives	5
Hours	15
Total Hours	124

## Bachelor of Music

The Bachelor of Music degree is designed to prepare the student for a professional career in performance. The student may pursue one of nine concentrations. Students may be admitted to this program only with the approval of the music faculty, usually determined by a special audition. The requirements for each of the nine bachelor of music degree programs include non-music courses, core music courses and concentration courses.

## Core Music Courses for Concentrations in Voice, Piano, Guitar, Strings and Wind and Percussion

Code	Title	Hours
<b>Performance Laboratory</b>		
MUS 1000	Performance Laboratory (eight semesters) <sup>1</sup>	0
<b>Concert Attendance</b>		
MUS 1010	Concert Attendance (six semesters) <sup>1</sup>	0
<b>Music Education Majors Only</b>		
MUS 1100	Introduction To Music Technology	
<b>Music Theory</b>		
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 1620	Music Theory And Ear Training II <sup>2</sup>	4
MUS 2610	Music Theory And Ear Training III <sup>2</sup>	4
MUS 2620	Music Theory And Ear Training IV <sup>2</sup>	4
MUS 3610	Form And Analysis	3
MUS 4620	Counterpoint: Introduction	3
<b>Music History and Literature <sup>2</sup></b>		
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 3410	Music History And Literature II	3
MUS 3420	Music History And Literature III	3
<b>Conducting</b>		
MUS 3500	Conducting	2
<b>Applied Music on Major Instrument</b>		
Select each course twice: <sup>3</sup>		30
MUS 1800	Applied Music	
MUS 2800	Applied Music	
MUS 3800	Applied Music	
MUS 4800	Applied Music	
<b>Junior and Senior Recitals</b>		
MUS 3810	Recital	1
MUS 4810	Recital	1
<b>Concentrations</b>		
Select one of the following concentrations:		16-18
<i>Voice Concentration</i>		



MUS 1570	Piano Class For Music Majors I <sup>2</sup>
MUS 1580	Piano Class For Music Majors II <sup>2</sup>
MUS 2570	Piano Class For Music Majors III <sup>2</sup>
MUS 2580	Piano Class For Music Majors IV <sup>2</sup>
Select eight semesters of the following: <sup>4</sup>	
MUS 3140	Concert Chorale
MUS 3160	Rocket Choristers
MUS 3180	Glee Club
MUS 3020	Jazz Ensemble
Select 8 hours of the following:	
MUS 2530	Diction For Singers I
MUS 2540	Diction For Singers II
MUS 3550	Vocal Pedagogy and Literature 1
MUS 4420	Vocal Pedagogy and Literature 2
Select at least one semester each of French and German <sup>5</sup>	
Electives. Select two hours of upper-division academic music courses	
<b>Piano Concentration</b>	
Select four semesters of the following: <sup>6</sup>	
MUS 3140	Concert Chorale
MUS 3160	Rocket Choristers
MUS 3180	Glee Club
MUS 3020	Jazz Ensemble
Electives. Select 5 hours of upper level academic music courses	
MUS 2590	Class Piano For Piano Majors
MUS 3580	Functional Piano Techniques
MUS 3590	Piano Pedagogy
MUS 4450	Keyboard Literature
<b>String Concentration</b>	
Select 3 hours of appropriate courses (determined by placement test) of the following: <sup>2</sup>	
MUS 1570	Piano Class For Music Majors I
MUS 1580	Piano Class For Music Majors II
MUS 2570	Piano Class For Music Majors III
MUS 2580	Piano Class For Music Majors IV
Select eight semesters of MUS 3090 <sup>7</sup>	
MUS 1500	String Class
MUS 4410	Instrumental Music Literature
Electives. Select 5 hours of upper division academic music courses	
<b>Guitar Concentration</b>	
Select 3 hours of appropriate courses (determined by placement test) of the following: <sup>2</sup>	
MUS 1570	Piano Class For Music Majors I
MUS 1580	Piano Class For Music Majors II
MUS 2570	Piano Class For Music Majors III
MUS 2580	Piano Class For Music Majors IV
MUS 3570	Guitar Pedagogy
MUS 4460	Guitar History And Literature

MUS 3050	Chamber Music Ensembles (8 semesters of MUS 3050:036)
Select two semesters of one of the following: <sup>8</sup>	
MUS 3050	Chamber Music Ensembles (MUS 3050:044)
MUS 3050	Chamber Music Ensembles (MUS 3050:071)
MUS 3050	Chamber Music Ensembles (MUS 3050:137)
Select two semesters of one of the following: <sup>8</sup>	
MUS 3020	Jazz Ensemble
MUS 3140	Concert Chorale
MUS 3160	Rocket Choristers
MUS 3180	Glee Club
Electives. Select 4 hours of upper division academic music courses	
<b>Wind and Percussion Concentration</b>	
<b>Class Piano</b>	
Select 3 hours of appropriate courses (determined by placement test) of the following: <sup>2</sup>	
MUS 1570	Piano Class For Music Majors I
MUS 1580	Piano Class For Music Majors II
MUS 2570	Piano Class For Music Majors III
MUS 2580	Piano Class For Music Majors IV
<b>Performing Groups</b>	
Select eight semesters of the following: <sup>9</sup>	
MUS 3010	University Band
MUS 3020	Jazz Ensemble
MUS 3090	University Orchestra
<b>Instrumental Music Literature</b>	
MUS 4410	Instrumental Music Literature
<b>Pedagogy on Major Instrument</b>	
Select two hours of the following:	
MUS 1510	Percussion Class
MUS 1530	Brass Class
MUS 1550	Woodwinds Class
<b>Music Electives</b>	
Select 4 hours of upper division academic music courses	
Total Hours	81-83

- <sup>1</sup> Transfer students will be required to complete a number of semesters proportionate to credits transferred.
- <sup>2</sup> A grade of C or better is required.
- <sup>3</sup> A grade of B or better is required in each course.
- <sup>4</sup> Note: MUS 3020 may only fulfill the requirement for one semester. Students must enroll in one of these courses each semester they are taking 12 or more hours. Four semesters of MUS 3050:071, MUS 3150, MUS 3170 or MUS 3190. The minimum requirement is an accumulation of 12 hours of ensemble credits, but only four hours may be counted toward the degree.
- <sup>5</sup> These hours also count to fulfill the Humanities requirement listed above in Non-Music. section e.

<sup>6</sup> Note: MUS 3020 may only fulfill the requirement for one semester. Two semesters of MUS 3050:041 or MUS 3050:043. Eight semesters of MUS 3050:044. The distribution of MUS 3050 ensembles indicated here is flexible and may be adjusted to individual needs with the approval of the applied music teacher. The minimum requirement is an accumulation of 14 hours of ensemble credits, but only four hours may be counted toward degree.

<sup>7</sup> Students must enroll in MUS 3090 each semester they are taking 12 or more hours. Two semesters of MUS 3140, MUS 3160 or MUS 3180. Four semesters of any choice of small ensembles that includes the student's major instrument. The minimum requirement is an accumulation of 14 hours of ensemble credits, but only four hours may be counted toward the degree. (4 hours)

<sup>8</sup> Note: MUS 3020 may only be used to fulfill the ensemble requirement for one semester. Students must enroll in MUS 3050:036 or any large ensemble (MUS 3010, MUS 3020, or MUS 3090) each semester they are taking 12 or more hours. The minimum requirement is an accumulation of 12 hours of ensemble credits, but only four hours may be counted toward degree.

<sup>9</sup> A minimum of 2 semesters of MUS 3010, and a minimum of 2 semesters of MUS 3090. (Note: MUS 3020 may only fulfill the requirement for one semester.) Students must enroll in one of these courses each semester they are taking 12 or more hours. Two semesters of MUS 3140, MUS 3160 or MUS 3180. Four semesters of any choice of small ensembles that includes the student's major instrument. The minimum requirement is an accumulation of 14 hours of ensemble credits, but only four hours may be counted toward degree. (4 hours).

## Core Music Courses for Instrumental Jazz and Vocal Jazz Concentrations

Code	Title	Hours
<b>Performance Laboratory</b>		
MUS 1000	Performance Laboratory (eight semesters) <sup>1</sup>	0
<b>Concert Attendance</b>		
MUS 1010	Concert Attendance (eight semesters) <sup>1</sup>	0
<b>Music Theory</b>		
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 1620	Music Theory And Ear Training II <sup>2</sup>	4
MUS 2610	Music Theory And Ear Training III <sup>2</sup>	4
MUS 2620	Music Theory And Ear Training IV <sup>2</sup>	4
MUS 3650	Jazz Arranging And Composition I	3
MUS 3660	Jazz Arranging And Composition II	3
<b>Music History and Literature</b>		
MUS 3410	Music History And Literature II <sup>2</sup>	3
MUS 3420	Music History And Literature III <sup>2</sup>	3
MUS 3450	Jazz History And Literature	3
<b>Jazz Pedagogy and Conducting</b>		
MUS 3560	Jazz Pedagogy And Conducting	2
<b>Applied Music</b>		
MUS 2800	Applied Music (Classical) <sup>3</sup>	8
MUS 4800	Applied Music (Jazz) <sup>4</sup>	18
MUS 1570	Piano Class For Music Majors I <sup>2</sup>	1

MUS 1590	Jazz Piano Class <sup>2</sup>	1
MUS 1800	Applied Music (MUS 1800:065 Applied Jazz Piano)	2

### Junior and Senior Recitals

MUS 3810	Recital	1
MUS 4810	Recital	1

### Concentrations

Select one of the following concentrations:	17
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#### Instrumental Jazz Concentration

MUS 3020	Jazz Ensemble (eight semesters)	
Select one semester of one of the following: <sup>5</sup>		
MUS 3150	Jazz Vocalstra	
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	

#### Jazz Improvisation

MUS 1700	Jazz Fundamentals	
MUS 2700	Jazz Improvisation I	
MUS 2710	Jazz Improvisation II	
MUS 3700	Jazz Improvisation III	
MUS 3710	Jazz Improvisation IV	
MUS 2270	Recording Techniques	

Electives. Select one hour of upper division academic music courses

#### Vocal Jazz Concentration

MUS 3150	Jazz Vocalstra (Eight Semesters)	
MUS 3020	Jazz Ensemble (Four Semesters) <sup>6</sup>	
or MUS 3050 Chamber Music Ensembles		

#### Jazz Improvisation

MUS 1700	Jazz Fundamentals	
MUS 2700	Jazz Improvisation I	
MUS 2710	Jazz Improvisation II	
MUS 3700	Jazz Improvisation III	
MUS 3710	Jazz Improvisation IV	
MUS 2270	Recording Techniques	

Electives. Select one hour of upper division academic music courses

Total Hours	82
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<sup>1</sup> Transfer students will be required to complete a number of semesters proportionate to credits transferred.

<sup>2</sup> A grade of C or better is required.

<sup>3</sup> Eight hours of Applied Music (classical) and successful completion of two semesters with a grade of B or better in MUS 2800 (classical).

<sup>4</sup> Eighteen hours of Applied Music (jazz) on the student's major instrument (or combination of instruments with the consent of the Advisor) and successful completion of two semesters with a grade of B or better in MUS 4800 (jazz).

<sup>5</sup> Students must enroll in one of these courses each semester they are taking 12 or more hours. Four semesters of MUS 3050:137. The minimum requirement is an accumulation of 13 hours of ensemble credits, but only four hours may be counted toward degree. (4 hours)

<sup>6</sup> Four semesters of MUS 3020 or MUS 3050:137. Students must enroll in one of these courses each semester they are taking 12 or more hours. The minimum requirement is an accumulation of 12 hours of ensemble credits, but only four hours may be counted toward degree. (4 hours)

## Core Music Courses for Instrumental and Vocal Jazz Concentration with an Emphasis in Music Business and Recording Arts

Code	Title	Hours
<b>Performance Laboratory</b>		
MUS 1000	Performance Laboratory (eight semesters) <sup>1</sup>	0
<b>Concert Attendance</b>		
MUS 1010	Concert Attendance (eight semesters) <sup>1</sup>	0
<b>Music Theory</b>		
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 1620	Music Theory And Ear Training II <sup>2</sup>	4
MUS 3650	Jazz Arranging And Composition I	3
MUS 3660	Jazz Arranging And Composition II	3
<b>Music History and Literature</b>		
MUS 3410	Music History And Literature II <sup>2</sup>	3
MUS 3420	Music History And Literature III <sup>2</sup>	3
MUS 3450	Jazz History And Literature	3
<b>Jazz Pedagogy and Conducting</b>		
MUS 3560	Jazz Pedagogy And Conducting	2
<b>Applied Music</b>		
MUS 4800	Applied Music (Jazz) <sup>3</sup>	16
MUS 1570	Piano Class For Music Majors I <sup>2</sup>	1
MUS 1590	Jazz Piano Class <sup>2</sup>	1
MUS 2800	Applied Music (MUS 2800:065 Applied Jazz Piano (two semesters))	2
<b>Junior Recitals</b>		
MUS 3810	Recital	1
<b>Music Business</b>		
MUS 2280	Survey Of The Music Business	3
MUS 3280	Concert And Event Production	3
MUS 3290	Music Industry Practicum	1
MUS 4290	Music Industry Internship	6
Electives. Select two hours of upper division academic music courses		2
<b>Instrumental and Vocal Jazz Concentration with an Emphasis in Music Business and Recording Arts</b>		
<b>Performing Groups</b>		
MUS 3150	Jazz Vocalstra (Eight Semesters)	1
MUS 3020	Jazz Ensemble (Four Semesters) <sup>4</sup>	1
or MUS 3050	Chamber Music Ensembles	
<b>Jazz Improvisation</b>		
MUS 1700	Jazz Fundamentals	2

MUS 2700	Jazz Improvisation I	2
MUS 2710	Jazz Improvisation II	2
MUS 3700	Jazz Improvisation III	2
MUS 3710	Jazz Improvisation IV	2

### Recording Techniques

MUS 2270	Recording Techniques	2
MUS 3270	Advanced Recording Techniques	2

Total Hours 77

- <sup>1</sup> Transfer students will be required to complete a number of semesters proportionate to credits transferred.
- <sup>2</sup> A grade of C or better is required.
- <sup>3</sup> 16 hours of Applied Music (jazz) on the student's major instrument (or combination of instruments with the consent of the Advisor) and successful completion of two semesters with a grade of B or better in MUS 4800 (jazz).
- <sup>4</sup> Four semesters of MUS 3020 or MUS 3050:137. Students must enroll in one of these courses each semester they are taking 12 or more hours. The minimum requirement is an accumulation of 12 hours of ensemble credits, but only four hours may be counted toward degree. (4 hours)

Below is a sample plan of study. Consult your degree audit for your program requirements

- Bachelor of Music - Instrumental Jazz (p. )
- Bachelor of Music - Jazz Music Business (p. )
- Bachelor of Music - Vocal Jazz (p. )
- Bachelor of Music - Guitar Concentration (p. )
- Bachelor of Music - Piano Concentration (p. )
- Bachelor of Music - String Concentration (p. )
- Bachelor of Music - Voice Concentration (p. )
- Bachelor of Music - Wind and Percussion Concentration (p. )

## Bachelor of Music - Instrumental Jazz

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music (Jazz)	2
MUS 1800	Applied Music (Classical) <sup>1</sup>	2
MUS 2270	Recording Techniques	2
MUS 3020	Jazz Ensemble	1
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1590	Jazz Piano Class	1

MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music (Jazz)	2
MUS 1700	Jazz Fundamentals	2
MUS 3020	Jazz Ensemble	1
Additional Ensemble		1
MUS 3140	Concert Chorale	
MUS 3150	Jazz Vocalstra	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MATH 1180	Reasoning With Mathematics	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Hours		17
<b>Third Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music (Classical) <sup>1</sup>	1
MUS 1800	Applied Music (Jazz Piano)	1
MUS 2610	Music Theory And Ear Training III	4
MUS 2700	Jazz Improvisation I	2
MUS 2800	Applied Music (Jazz)	2
MUS 3020	Jazz Ensemble	1
Natural Sciences Core		3
Social Sciences Core		3
Hours		17
<b>Fourth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2800	Applied Music (Jazz)	2
MUS 1800	Applied Music (Classical) <sup>1</sup>	1
MUS 2710	Jazz Improvisation II	2
MUS 1800	Applied Music (Jazz Piano)	1
MUS 3020	Jazz Ensemble	1
MUS 2620	Music Theory And Ear Training IV	4
Arts/Humanities Core (History)		3
Core Elective		3
Hours		17
<b>Fifth Term</b>		
SPECIAL CONSIDERATION <sup>2</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2220	History Of Jazz (Diversity of US)	3
MUS 2800	Applied Music (Classical) <sup>1</sup>	1
MUS 3020	Jazz Ensemble	1
MUS 3050	Chamber Music Ensembles (Jazz Combo)	1
MUS 3410	Music History And Literature II	3
MUS 3700	Jazz Improvisation III	2
MUS 3800	Applied Music (Jazz)	3

Social Sciences Core		3
Hours		17
<b>Sixth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2800	Applied Music (Classical) <sup>1</sup>	1
MUS 3020	Jazz Ensemble	1
MUS 3050	Chamber Music Ensembles (Jazz Combo)	1
MUS 3420	Music History And Literature III	3
MUS 3710	Jazz Improvisation IV	2
MUS 3800	Applied Music (Jazz)	2
MUS 3810	Recital (Jazz)	1
Natural Science Core		3
Natural Science Lab		1
Hours		15
<b>Seventh Term</b>		
MUS 1000	Performance Laboratory	0
MUS 2420	Cultures And Music Of Non-Western Styles (Non-US Diversity)	3
MUS 2800	Applied Music (Classical) <sup>1</sup>	1
MUS 3020	Jazz Ensemble	1
MUS 3050	Chamber Music Ensembles (Jazz Combo)	1
MUS 3560	Jazz Pedagogy And Conducting	2
MUS 3650	Jazz Arranging And Composition I	3
MUS 4800	Applied Music (Jazz)	3
ENGL 2710 - 2800 Art/Humanities Core (English Lit)		3
Hours		17
<b>Eighth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 2800	Applied Music (Classical) <sup>1</sup>	1
MUS 3020	Jazz Ensemble	1
MUS 3050	Chamber Music Ensembles (Jazz Combo)	1
MUS 3450	Jazz History And Literature	3
MUS 3660	Jazz Arranging And Composition II	3
MUS 4800	Applied Music (Jazz)	2
MUS 4810	Recital (Jazz)	1
Upper Division Music Elective <sup>4</sup>		2
Arts/Humanities Core (Communication)		3
Hours		17
Total Hours		133

<sup>1</sup> Required 4 credits of Applied Music - Classical are often taken in the summer.

<sup>2</sup> Students must successfully pass Upper Divisional Applied Music Jury.

<sup>3</sup> Replaces 2 Music Electives.

<sup>4</sup> Needs 1 hr. Upper Division Music Elective Lecture (3xxx or higher): Improvisation Seminar, Form & Analysis, Counterpoint, etc.

Code	Title	Hours
Total Credit Hours		133
Minus credits that do not count toward graduation		-9
Total Earned Credit Hours		124

## Bachelor of Music - Jazz Music Business

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music (Jazz)	2
MUS 2270	Recording Techniques	2
MUS 3020	Jazz Ensemble	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
	Hours	17
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1590	Jazz Piano Class	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1700	Jazz Fundamentals	2
MUS 1800	Applied Music (Jazz)	2
MUS 3020	Jazz Ensemble	1
MUS 3050	Chamber Music Ensembles (Jazz Combo)	1
MUS 3270	Advanced Recording Techniques	2
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
	Hours	16
<b>Third Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music (MUS 1800:065 Jazz Piano)	1
MUS 2280	Survey Of The Music Business	3
MUS 2610	Music Theory And Ear Training III	4
MUS 2700	Jazz Improvisation I	2
MUS 2800	Applied Music (Jazz)	2
MUS 3020	Jazz Ensemble	1
Natural Sciences Core		3
	Hours	16
<b>Fourth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music (MUS 1800:065 Jazz Piano)	1
MUS 2710	Jazz Improvisation II	2
MUS 2620	Music Theory And Ear Training IV	4

MUS 2800	Applied Music (Jazz)	2
MUS 3020	Jazz Ensemble <sup>1</sup>	1
MUS 3280	Concert And Event Production	3
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
	Hours	16

### Fifth Term

SPECIAL CONSIDERATION <sup>2</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2220	History Of Jazz (Diversity of US)	3
MUS 3020	Jazz Ensemble <sup>1</sup>	1
MUS 3050	Chamber Music Ensembles (Jazz Combo) <sup>1</sup>	1
MUS 3410	Music History And Literature II (WAC)	3
MUS 3700	Jazz Improvisation III	2
MUS 3800	Applied Music (Jazz)	2
Social Sciences Core		3
Core Elective		2
	Hours	17

### Sixth Term

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3020	Jazz Ensemble <sup>1</sup>	1
MUS 3050	Chamber Music Ensembles (Jazz Combo) <sup>1</sup>	1
MUS 3420	Music History And Literature III (WAC)	3
MUS 3710	Jazz Improvisation IV	2
MUS 3800	Applied Music (Jazz)	2
MUS 3810	Recital (Jazz)	1
Social Sciences Core		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
	Hours	17

### Seventh Term

MUS 1000	Performance Laboratory	0
MUS 2420	Cultures And Music Of Non-Western Styles (Non-US Diversity)	3
MUS 3020	Jazz Ensemble <sup>1</sup>	1
MUS 3050	Chamber Music Ensembles (Jazz Combo) <sup>1</sup>	1
MUS 3290	Music Industry Practicum	1
MUS 3560	Jazz Pedagogy And Conducting	2
MUS 3650	Jazz Arranging And Composition I <sup>3,4</sup>	3
MUS 4800	Applied Music (Jazz)	2
Arts/Humanities Core (History)		3
	Hours	16

### Eighth Term

MUS 1000	Performance Laboratory	0
MUS 4800	Applied Music (Jazz)	2
MUS 3020	Jazz Ensemble <sup>1</sup>	1
MUS 3050	Chamber Music Ensembles (Jazz Combo) <sup>1</sup>	1
MUS 3450	Jazz History And Literature	3



MUS 3660	Jazz Arranging And Composition II <sup>3,4</sup>	3
MUS 4290	Music Industry Internship	2-6
Arts/Humanities Core (Communication)		3
Hours		15-19
Total Hours		130-134

<sup>1</sup> Does not count toward graduation.

<sup>2</sup> Students must successfully pass Upper Division Applied Music Jury. Required 4 credits of Applied Music - Classical can instead be taken in the summer.

<sup>3</sup> Replaces 2 Music Electives.

<sup>4</sup> Needs 1 hr. Upper Division Music Elective Lecture (3xxx or higher): Improvisation Seminar, Form & Analysis, Counterpoint, etc.

Code	Title	Hours
Total Credit Hours		133
Minus credits that do not count toward graduation		-9
Total Earned Credit Hours		124

## Bachelor of Music - Vocal Jazz

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music (Jazz)	2
MUS 1800	Applied Music (Classical)	2
MUS 2270	Recording Techniques	2
MUS 3150	Jazz Vocalstra	1
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1590	Jazz Piano Class	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1700	Jazz Fundamentals	2
MUS 1800	Applied Music (Jazz)	2
MUS 3020	Jazz Ensemble <sup>1</sup>	1
or MUS 3050	or Chamber Music Ensembles	
MUS 3150	Jazz Vocalstra	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Hours		17
<b>Third Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music (Classical)	1

MUS 1800	Applied Music (MUS 1800:065 Applied Music-Jazz Piano)	1
MUS 2800	Applied Music (Jazz)	2
MUS 2610	Music Theory And Ear Training III	4
MUS 2700	Jazz Improvisation I	2
MUS 3150	Jazz Vocalstra	1
Social Sciences Core		3
Natural Sciences Core		3
Hours		17

### Fourth Term

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music (Classical)	1
MUS 1800	Applied Music (MUS 1800:065 Applied Music - Jazz Piano)	1
MUS 2620	Music Theory And Ear Training IV	4
MUS 2710	Jazz Improvisation II	2
MUS 2800	Applied Music (Jazz)	2
MUS 3150	Jazz Vocalstra <sup>1</sup>	1
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Core Elective		3
Hours		17

### Fifth Term

SPECIAL CONSIDERATION <sup>3</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2220	History Of Jazz (Diversity of US)	3
MUS 2800	Applied Music (Classical)	1
MUS 3150	Jazz Vocalstra <sup>1</sup>	1
MUS 3020	Jazz Ensemble <sup>1</sup>	1
or MUS 3050	or Chamber Music Ensembles	
MUS 3410	Music History And Literature II (WAC)	3
MUS 3700	Jazz Improvisation III	2
MUS 3800	Applied Music (Jazz)	3
Social Sciences Core		3
Hours		17

### Sixth Term

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2800	Applied Music (Classical)	1
MUS 3020	Jazz Ensemble <sup>1</sup>	1
or MUS 3050	or Chamber Music Ensembles	
MUS 3150	Jazz Vocalstra <sup>1</sup>	1
MUS 3420	Music History And Literature III (WAC)	3
MUS 3710	Jazz Improvisation IV	2
MUS 3800	Applied Music (Jazz)	2
MUS 3810	Recital (Jazz)	1
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		15

**Seventh Term**

MUS 1000	Performance Laboratory	0
MUS 2220	History Of Jazz (Non-US Diversity )	3
MUS 2800	Applied Music (Classical)	1
MUS 3020 or MUS 3050	Jazz Ensemble <sup>1</sup> or Chamber Music Ensembles	1
MUS 3150	Jazz Vocalstra <sup>1</sup>	1
MUS 3560	Jazz Pedagogy And Conducting	2
MUS 3650	Jazz Arranging And Composition I <sup>3</sup>	3
MUS 4800	Applied Music (Jazz)	3
Arts/Humanities Core (History)		3
Hours		17

**Eighth Term**

MUS 1000	Performance Laboratory	0
MUS 2800	Applied Music (Classical)	1
MUS 3020 or MUS 3050	Jazz Ensemble <sup>1</sup> or Chamber Music Ensembles	1
MUS 3150	Jazz Vocalstra <sup>1</sup>	1
MUS 3450	Jazz History And Literature	3
MUS 3660	Jazz Arranging And Composition II <sup>3</sup>	3
MUS 4800	Applied Music (Jazz)	2
MUS 4810	Recital (Jazz)	1
MUS 3xxx	Upper Division Music Elective <sup>4</sup>	2
Arts/Humanities Core (Communication)		3
Hours		17
Total Hours		133

<sup>1</sup> Does not count toward graduation.<sup>2</sup> Students must successfully pass Upper Division Applied Music Jury. Required 4 credits of Applied Music - Classical can instead be taken in the summer.<sup>3</sup> Replaces 2 Music Electives.<sup>4</sup> Needs 1 hr. Upper Division Music Elective Lecture (3xxx or higher): Improvisational Seminar, Form & Analysis, Counterpoint, etc.

Code	Title	Hours
Total Credit Hours		133
Minus credits that do not count toward graduation		-9
Total Earned Credit Hours		124

**Bachelor of Music - Guitar Concentration**

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Guitar Ensemble)	1

MUS 3xxx Additional Ensemble <sup>1</sup>		1
ENGL 1110	College Composition I	3
Hours		15

**Second Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Guitar Ensemble)	1
MUS 3xxx Additional Ensemble <sup>1</sup>	1	
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Hours		17

**Third Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2570	Piano Class For Music Majors III	1
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Guitar Ensemble) <sup>2</sup>	1
Social Sciences Core		3
Natural Sciences Core		3
Hours		16

**Fourth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Guitar Ensemble) <sup>2</sup>	1
MUS 3xxx Additional Ensemble <sup>1,2</sup>	1	
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		17

**Fifth Term**

SPECIAL CONSIDERATION <sup>2</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3050	Chamber Music Ensembles (Guitar Ensemble) <sup>2</sup>	1
MUS 3410	Music History And Literature II (WAC)	3
MUS 3500	Conducting	2
MUS 3800	Applied Music	4
MUS 3xxx Additional Ensemble <sup>1,2</sup>	1	

ENGL 2710-2800 Arts/Humanities Core (English Lit)	3
Arts/Humanities Core (Communication)	3
Hours	17
<b>Sixth Term</b>	
MUS 1000 Performance Laboratory	0
MUS 1010 Concert Attendance	0
MUS 2220 History Of Jazz (Diversity of US)	3
MUS 3050 Chamber Music Ensembles (Guitar Ensemble) <sup>2</sup>	1
MUS 3420 Music History And Literature III (WAC)	3
MUS 3800 Applied Music	3
MUS 3810 Recital	1
MUS 4xxx Elective	3
Arts/Humanities Core (History)	3
Hours	17
<b>Seventh Term</b>	
MUS 1000 Performance Laboratory	0
MUS 2420 Cultures And Music Of Non-Western Styles (Non-US Diversity)	3
MUS 3050 Chamber Music Ensembles (Guitar Ensemble) <sup>2</sup>	1
MUS 3570 Guitar Pedagogy	3
MUS 3610 Form And Analysis	3
MUS 4800 Applied Music	4
Social Sciences Core	3
Hours	17
<b>Eighth Term</b>	
MUS 1000 Performance Laboratory	0
MUS 3050 Chamber Music Ensembles (Guitar Ensemble) <sup>2</sup>	1
MUS 4620 Counterpoint: Introduction	3
MUS 4460 Guitar History And Literature	3
MUS 4800 Applied Music	3
MUS 4810 Recital	1
MUS 4xxx Elective	2
Core Elective	3
Hours	16
Total Hours	132

<sup>1</sup> Additional Ensembles: 2 hours from MUS 3140/MUS 3160/MUS 3180/MUS 3120 and 2 hours from MUS 3050:044, MUS 3050:071, and MUS 3050:137.

<sup>2</sup> Does not count toward graduation.

<sup>3</sup> Students must successfully pass Upper Division Applied Music Jury.

Code	Title	Hours
Total Credit Hours		132
Minus credits that do not count toward graduation		-8
Total Earned Credit Hours		124

## Bachelor of Music - Piano Concentration

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	4
MUS 2590	Class Piano For Piano Majors	2
MUS 3050	Chamber Music Ensembles (Accompanying)	1
Select one of the following:		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Accompanying)	1
Select one of the following:		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
MUS 3580	Functional Piano Techniques	2
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Hours		18
<b>Third Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Accompanying) <sup>2</sup>	1
MUS 3050	Chamber Music Ensembles (MUS 3050:041 or MUS 3050:043 Small Ensemble) <sup>2</sup>	1
Social Sciences Core		3
Natural Sciences Core		3
Hours		16
<b>Fourth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0

MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	4
MUS 3050	Chamber Music Ensembles (Accompanying) <sup>2</sup>	1
MUS 3050	Chamber Music Ensembles (MUS 3050: 041 or MUS 3050:043 Small Ensemble) <sup>2</sup>	1
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		17

**Fifth Term**

SPECIAL CONSIDERATION <sup>3</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3050	Chamber Music Ensembles (Accompanying) <sup>2</sup>	1
MUS 3410	Music History And Literature II (WAC)	3
Select one of the following: <sup>2</sup>		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
MUS 3500	Conducting	2
MUS 3800	Applied Music	4
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Arts/Humanities Core (Communication)		3
Hours		17

**Sixth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3050	Chamber Music Ensembles (Accompanying) <sup>2</sup>	1
MUS 3420	Music History And Literature III (WAC)	3
Select one of the following: <sup>2</sup>		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
MUS 3800	Applied Music	3
MUS 3810	Recital	1
Music Elective: 4000 or above		2
Arts/Humanities (History)		3
MUS 2220	History Of Jazz (Diversity of US)	3
Hours		17

**Seventh Term**

MUS 1000	Performance Laboratory	0
MUS 2420	Cultures And Music Of Non-Western Styles (Non-US Diversity)	3

MUS 3050	Chamber Music Ensembles (Accompanying) <sup>2</sup>	1
MUS 3590	Piano Pedagogy	2
MUS 3610	Form And Analysis	3
MUS 4800	Applied Music	4
Social Sciences Core		3
Hours		16

**Eighth Term**

MUS 1000	Performance Laboratory	0
MUS 3050	Chamber Music Ensembles (Accompanying) <sup>2</sup>	1
MUS 4450	Keyboard Literature	3
MUS 4620	Counterpoint: Introduction	3
MUS 4xxx Elective		3
MUS 4800	Applied Music	3
MUS 4810	Recital	1
Core Elective		3
Hours		17
Total Hours		134

<sup>1</sup> MUS 3020 may only count once.

<sup>2</sup> Does not count toward graduation.

<sup>3</sup> Students must successfully pass Upper Division Applied Music Jury.

Code	Title	Hours
Total Credit Hours		134
Minus credits that do not count toward graduation		-10
Total Earned Credit Hours		124

**Bachelor of Music - String Concentration**

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1500	String Class	2
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	4
MUS 3090	University Orchestra	1
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1800	Applied Music	4
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
MUS 3090	University Orchestra	1
MUS 3xxx Small Ensemble Elective		1

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Hours		17

**Third Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	4
MUS 2570	Piano Class For Music Majors III	1
MUS 3090	University Orchestra	1
Select one of the following: <sup>1</sup>		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
Social Sciences Core		3
Natural Sciences Core		3
Hours		17

**Fourth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	4
MUS 3090	University Orchestra <sup>1</sup>	1
MUS 3xxx Small Ensemble Elective <sup>1</sup>		1
Social Sciences Core		3
Hours		16

**Fifth Term**SPECIAL CONSIDERATION <sup>2</sup>

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3090	University Orchestra <sup>1</sup>	1
Select one of the following: <sup>1</sup>		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3410	Music History And Literature II (WAC)	3
MUS 3800	Applied Music	4
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16

**Sixth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2220	History Of Jazz (Diversity of US)	3
MUS 3090	University Orchestra <sup>1</sup>	1
MUS 3xxx Small Ensemble Elective <sup>1</sup>		1

MUS 3420	Music History And Literature III (WAC)	3
MUS 3800	Applied Music	3
MUS 3810	Recital	1
MUS 4xxx Elective		3
Arts/Humanities Core (History)		3
Hours		18

**Seventh Term**

MUS 1000	Performance Laboratory	0
MUS 2420	Cultures And Music Of Non-Western Styles (Non-US Diversity)	3
MUS 3090	University Orchestra <sup>1</sup>	1
MUS 3xxx Small Ensemble Elective <sup>1</sup>		1
MUS 3500	Conducting	2
MUS 3610	Form And Analysis	3
MUS 4800	Applied Music	4
Arts/Humanities Core (Communication)		3
Hours		17

**Eighth Term**

MUS 1000	Performance Laboratory	0
MUS 3090	University Orchestra <sup>1</sup>	1
MUS 4410	Instrumental Music Literature	3
MUS 4620	Counterpoint: Introduction	3
MUS 4xxx Elective		3
MUS 4800	Applied Music	3
MUS 4810	Recital	1
Core Elective		3
Hours		17
Total Hours		134

<sup>1</sup> Does not count toward graduation.<sup>2</sup> Students must successfully pass Upper Division Applied Music Jury.

Code	Title	Hours
Total Credit Hours		134
Minus credits that don't count toward graduation		-10
Total Earned Credit Hours		124

**Bachelor of Music - Voice Concentration**

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	4
MUS 2530	Diction For Singers I	1
Select one of the following:		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	



MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
ENGL 1110	College Composition I	3
Hours		15
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	4
MUS 2540	Diction For Singers II	1
Select one of the following:		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Hours		17
<b>Third Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2570	Piano Class For Music Majors III	1
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	4
Select one of the following:		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
Select one of the following: <sup>1</sup>		1
MUS 3050	Chamber Music Ensembles (MUS 3050:071)	
MUS 3150	Jazz Vocalstra	
MUS 3170	Chamber Singers	
MUS 3190	Opera Workshop	
Social Sciences Core		3
Natural Sciences Core		3
Hours		17
<b>Fourth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2580	Piano Class For Music Majors IV	1
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	4
Select one of the following: <sup>2</sup>		1
MUS 3140	Concert Chorale	

MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
Select one of the following: <sup>2</sup>		1
MUS 3050	Chamber Music Ensembles (MUS 3050:071)	
MUS 3150	Jazz Vocalstra	
MUS 3170	Chamber Singers	
MUS 3190	Opera Workshop	
Social Sciences Core/Non-US Diversity		3
Hours		17
<b>Fifth Term</b>		
SPECIAL CONSIDERATION <sup>3</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
Select one of the following: <sup>2</sup>		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
MUS 3410	Music History And Literature II (WAC)	3
MUS 3500	Conducting	2
MUS 3800	Applied Music	4
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		17
<b>Sixth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
Select one of the following: <sup>2</sup>		1
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	
Select one of the following:		1
MUS 3050	Chamber Music Ensembles (MUS 3050:071)	
MUS 3150	Jazz Vocalstra	
MUS 3170	Chamber Singers	
MUS 3190	Opera Workshop	
MUS 3420	Music History And Literature III (WAC)	3
MUS 3800	Applied Music	3
MUS 3810	Recital	1
Arts/Humanities Core (History)		3
FREN 1110	Elementary French I	4
or GERM 1110	or Elementary German I	
Hours		16
<b>Seventh Term</b>		
MUS 1000	Performance Laboratory	0

Select one of the following:<sup>2</sup> 1

MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	

Select one of the following: 1

MUS 3050	Chamber Music Ensembles (MUS 3050:071)	
MUS 3150	Jazz Vocalstra	
MUS 3170	Chamber Singers	
MUS 3190	Opera Workshop	

MUS 3550	Vocal Pedagogy and Literature 1	2
MUS 3610	Form And Analysis	3
MUS 4800	Applied Music	4
Core Elective		2
GERM 1110	Elementary German I	4
or FREN 1110	or Elementary French I	
Hours		17

**Eighth Term**

MUS 1000	Performance Laboratory	0
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Select one of the following:<sup>2</sup> 1

MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3020	Jazz Ensemble <sup>1</sup>	

MUS 4420	Vocal Pedagogy and Literature 2	2
MUS 3/4xxx Elective		3
MUS 4800	Applied Music	3
MUS 4810	Recital	1
Diversity of US		3
Arts/Humanities Core (Communication)		3
Hours		16
Total Hours		132

<sup>1</sup> MUS 3020 may only count once.<sup>2</sup> Does not count toward graduation.<sup>3</sup> Students must successfully pass Upper Division Applied Music Jury.

Code	Title	Hours
Total Credit Hours		132
Minus credits that do not count toward graduation		-8
Total Earned Credit Hours		124

## Bachelor of Music - Wind and Percussion Concentration

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0

MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	4

Select one of the following:<sup>1</sup> 1

MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
MUS 3xxx Small Ensemble		1
ENGL 1110	College Composition I	3
Hours		15

**Second Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	4

Select one of the following:<sup>1</sup> 1

MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
MUS 3xxx Small Ensemble		1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Hours		17

**Third Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2570	Piano Class For Music Majors III	1
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	4

Select one of the following:<sup>1,2</sup> 1

MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	

Select one of the following:<sup>2</sup> 1

MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
Social Sciences Core		3
Natural Sciences Core		3
Hours		17

**Fourth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	4

Select one of the following:<sup>1,2</sup> 1

MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
MUS 3xxx Small Ensemble <sup>2</sup>		1
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		17

**Fifth Term**

SPECIAL CONSIDERATION <sup>3</sup>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
Select one of the following: <sup>1,2</sup>		1
MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
MUS 3410	Music History And Literature II (WAC)	3
MUS 3500	Conducting	2
MUS 3xxx Small Ensemble <sup>2</sup>		1
MUS 3800	Applied Music	4
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Arts/Humanities Core (Communication)		3
Hours		17

**Sixth Term**

MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 2220	History Of Jazz (Diversity of US)	3
Select one of the following: <sup>1,2</sup>		1
MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
MUS 3420	Music History And Literature III (WAC)	3
MUS 3800	Applied Music	3
MUS 3810	Recital	1
MUS 4xxx Elective		3
Arts/Humanities Core (History)		3
Hours		17

**Seventh Term**

MUS 1000	Performance Laboratory	0
Select one of the following:		2
MUS 1510	Percussion Class	
MUS 1530	Brass Class	
MUS 1550	Woodwinds Class	
MUS 2420	Cultures And Music Of Non-Western Styles (Non-US Diversity)	3
Select one of the following: <sup>1,2</sup>		1
MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
Select one of the following: <sup>2</sup>		1

MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 3610	Form And Analysis	3
MUS 4800	Applied Music	4
Social Sciences Core		3
Hours		17

**Eighth Term**

MUS 1000	Performance Laboratory	0
Select one of the following: <sup>1,2</sup>		1
MUS 3010	University Band	
MUS 3020	Jazz Ensemble	
MUS 3090	University Orchestra	
MUS 4410	Instrumental Music Literature	3
MUS 4620	Counterpoint: Introduction	3
MUS 4xxx Elective		3
MUS 4800	Applied Music	3
MUS 4810	Recital	1
Core elective		3
Hours		17
Total Hours		134

<sup>1</sup> Minimum of 2 semesters of MUS 3010 ; minimum of 2 semesters of MUS 3090; MUS 3020 can only count once.

<sup>2</sup> Does not count toward graduation.

<sup>3</sup> Students must successfully pass Upper Division Applied Music Jury.

Code	Title	Hours
Total Credit Hours		134
Minus credits that do not count toward graduation		-10
Total Earned Credit Hours		124

## Bachelor of Music Education

For details on the baccalaureate program in music education, see The Judith Herb College of Education (p. 473) catalog.

## Instrumental Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting

a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (2 semesters)	0
MUS 1010	Concert Attendance (3 semesters)	0
Select one of the following: <sup>1</sup>		1
MUS 1570	Piano Class For Music Majors I	
MUS 1590	Jazz Piano Class	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 1800	Applied Music <sup>3</sup>	8
or MUS 2800	Applied Music	
Select four hours of one of the following:		4
MUS 3010	University Band (4 semesters)	
MUS 3050	Chamber Music Ensembles (MUS 3050:36)	
MUS 3090	University Orchestra	
MUS 2410	Music History And Literature I: World Music And Jazz <sup>2</sup>	3
Electives. Select 2 hours of MUS Major level courses only, excluding ensembles		2
Total Hours		22

<sup>1</sup> Placement test required. Grade of C or better is required.

<sup>2</sup> A grade of C or better is required.

<sup>3</sup> At least 6 hours must be in the same instrument or voice.

## Jazz Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (2 semesters)	0
MUS 1010	Concert Attendance (3 semesters)	0
Select one of the following: <sup>1</sup>		1
MUS 1570	Piano Class For Music Majors I	
MUS 1590	Jazz Piano Class	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	
MUS 1700	Jazz Fundamentals	2
MUS 2700	Jazz Improvisation I	2
MUS 2710	Jazz Improvisation II	2
MUS 1800	Applied Music (Applied Jazz Music) <sup>2</sup>	8
or MUS 2800	Applied Music	
Select 4 hours of one of the following:		4
MUS 3020	Jazz Ensemble (4 semesters)	
MUS 3150	Jazz Vocalstra	
MUS 3050	Chamber Music Ensembles (MUS 3050:136)	
MUS 3050	Chamber Music Ensembles (MUS 3050:137)	
MUS 3450	Jazz History And Literature	3
Total Hours		22

<sup>1</sup> Placement test required. Grade of C or better is required.

<sup>2</sup> At least 6 hours must be in the same instrument or voice.

## Keyboard Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (2 semesters)	0
MUS 1010	Concert Attendance (3 semesters)	0
MUS 1610	Music Theory And Ear Training I <sup>1</sup>	4

MUS 1800	Applied Music (take for a total of eight hours)) <sup>2</sup>	8
or MUS 2800	Applied Music	
Select four hours of the following:		4
MUS 3010	University Band (4 semesters)	
MUS 3050	Chamber Music Ensembles (MUS 3050:44)	
MUS 3090	University Orchestra	
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 2410	Music History And Literature I: World Music And Jazz <sup>1</sup>	3
MUS 3580	Functional Piano Techniques	2
Electives. Select 2 hours of MUS Major level courses only, excluding ensembles		1
Total Hours		22

<sup>1</sup> A grade of C or better is required.

<sup>2</sup> At least 6 hours must be in the same instrument or voice.

## Music Business and Recording Arts Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 25 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (one semester taken concurrently with MUS 3270)	0
MUS 1010	Concert Attendance (3 semesters)	0
Select one of the following: <sup>1</sup>		1
MUS 1570	Piano Class For Music Majors I	
MUS 1580	Piano Class For Music Majors II	
MUS 1590	Jazz Piano Class	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	

MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 2270	Recording Techniques	2
MUS 2280	Survey Of The Music Business	3
MUS 3270	Advanced Recording Techniques	2
MUS 3280	Concert And Event Production	3
MUS 3290	Music Industry Practicum	1
MUS 4290	Music Industry Internship (Internships are available for 2, 3, 4, or 6 hours)	6
PHYS 1310	Physics Of Music And Sound	3
Total Hours		25

<sup>1</sup> Placement test required. Grade of C or better is required.

<sup>2</sup> A grade of C or better is required.

## Music History and Literature Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (2 semesters)	0
MUS 1010	Concert Attendance (3 semesters)	0
Select one of the following: <sup>1</sup>		1
MUS 1570	Piano Class For Music Majors I	
MUS 1580	Piano Class For Music Majors II	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 2410	Music History And Literature I: World Music And Jazz <sup>2</sup>	3
MUS 3410	Music History And Literature II <sup>2</sup>	3
MUS 3420	Music History And Literature III <sup>2</sup>	3
Music History Class, MUS 4000 level		3



Electives. Select 5 hours of MUS Major level courses only, excluding ensembles 5

Total Hours 22

<sup>1</sup> Placement test required. Grade of C or better is required.

<sup>2</sup> A grade of C or better is required.

## Music Technology Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (0 hours - to be taken concurrently with MUS 3270)	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 2260	Electronic Music	2
MUS 2270	Recording Techniques	2
MUS 3260	Advanced Electronic Music	3
MUS 3270	Advanced Recording Techniques	2
MUS 3470	Theatre Sound	3
MUS 4990	Special Projects (must take a total of 6 hours)	6
PHYS 1310	Physics Of Music And Sound (taken as one of the Natural Science requirements in the Gen Ed)	3
Total Hours		26

## Music Theory Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation

with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (2 semesters)	0
MUS 1010	Concert Attendance (3 semesters)	0
Select 3 hours of the following: <sup>1</sup>		3
MUS 1570	Piano Class For Music Majors I	
MUS 1580	Piano Class For Music Majors II	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 1620	Music Theory And Ear Training II <sup>2</sup>	4
MUS 2610	Music Theory And Ear Training III <sup>2</sup>	4
MUS 2620	Music Theory And Ear Training IV <sup>2</sup>	4
MUS 2410	Music History And Literature I: World Music And Jazz <sup>2</sup>	3
Total Hours		22

<sup>1</sup> Placement test required. Grade of C or better is required.

<sup>2</sup> A grade of C or better is required.

## Vocal Minor

Admission to the minor program requires the following:

1. approval of the Department of Music; and
2. an approved placement audition level on an acceptable instrument or voice (interview for music business and recording arts minor).

Students electing to pursue a minor in music choose one of the seven minors outlined below. It is the student's responsibility, in consultation with the student's major Advisor and the music Advisor, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should ensure that the minor in music is an approved program within their college. Candidates for the minor in music must have their course work verified and approved by the Advisor for the Department of Music prior to making formal application for graduation. This can be done by presenting a transcript to the music Advisor and completing the verification form for the minor in music.

Students must maintain a minimum GPA of 2.0 for all course work completed in the minor.

Total of 22 Hours

Code	Title	Hours
MUS 1000	Performance Laboratory (2 semesters)	0
MUS 1010	Concert Attendance (3 semesters)	0
Select one of the following: <sup>1</sup>		1
MUS 1570	Piano Class For Music Majors I	
MUS 1580	Piano Class For Music Majors II	
MUS 2570	Piano Class For Music Majors III	
MUS 2580	Piano Class For Music Majors IV	
MUS 1610	Music Theory And Ear Training I <sup>2</sup>	4
MUS 1800	Applied Music <sup>3</sup>	8
or MUS 2800	Applied Music	
Select four hours of one of the following:		4
MUS 3140	Concert Chorale (4 semesters)	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
MUS 2410	Music History And Literature I: World Music And Jazz <sup>2</sup>	3
Electives. Select 2 hours of MUS Major level courses only, excluding ensembles		2
Total Hours		22

<sup>1</sup> Placement test required. Grade of C or better is required.<sup>2</sup> A grade of C or better is required.<sup>3</sup> At least 6 hours must be in the same instrument or voice.

## Department of Philosophy and Religious Studies

John Sarnecki, Department Chair

### Philosophy AT THE UNIVERSITY OF TOLEDO

Philosophy at the University of Toledo is historically oriented, pluralistic department with an outstanding faculty and vibrant graduate program. Our undergraduate program exposes students from all majors to the richness of philosophical thought and the importance of critical thinking, and it gives its majors a deep and broad education in diverse philosophical traditions.

### Religious Studies at the University of Toledo

The Religious Studies Program at the University of Toledo offers undergraduates the opportunity to explore religion—one of the most powerful forces shaping human civilizations and individuals. Religion wrestles with the deepest questions humans can ask, such as: What is ultimate reality? What is the meaning of life and of death? Why is there both good and evil? What is the destiny of humanity and the universe as a whole? The world's religions offer different answers to these questions. Our program explores these answers and the robust traditions of religious practice, ethics, social institutions, sacred texts, rituals, and lived experiences that accompany them.

Our program offers both an undergraduate major and minor. Students can opt to focus their studies in the major in focal area such as Jewish and Christian Studies, Islamic Studies, or other areas they design in

conjunction with a faculty advisor. We work hard to see that all our majors and minors have a course of study that reflects their career goals and interests so they can flourish professionally and personally.

Our majors are also invited to intern with local, national and/or international organizations as part of their curriculum and to be involved with outreach work done by the Department's Center for Religious Understanding.

## Degrees Offered

- B.A. in Philosophy (p. 106)
- B.A. in Religious Studies (p. 107)
- Minor in Philosophy (p. 109)
- Religious Studies Minor (p. 110)

### PHIL 1010 Introduction To Logic

[0-3 credit hours]

(not for major credit) An introduction to the symbolic analysis of argument components and structures. Topics include definition, syllogistic reasoning, semantics, sentential logic and probability.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

### PHIL 1020 Critical Thinking

[0-3 credit hours]

(not for major credit) A study of principles and patterns of good reasoning and writing, including the evaluation and construction of arguments and the identification and avoidance of fallacies.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

### PHIL 2200 Introduction To Philosophy

[3 credit hours]

An introduction to philosophical reflection on such issues as the existence of God, free will, knowledge and objectivity, social justice and moral responsibility. Humanities core course.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

### PHIL 2400 Contemporary Moral Problems

[3 credit hours]

A study of topics such as abortion, euthanasia, environmental responsibility, famine relief, affirmative action and sexuality. Attention is paid to moral argument and the bases of moral decisions.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

### PHIL 3000 Symbolic Logic

[3 credit hours]

A study of propositional and predicate logic, techniques used to evaluate deductive arguments. Topics may include computability, set theory, Bayesianism and other formal systems with philosophical and mathematical relevance.

**Term Offered:** Spring, Fall

### PHIL 3060 Philosophy Of Language

[3 credit hours]

A historical and critical examination of topics in the philosophy of language such as truth, reference, representation, metaphor and interpretation.

**Term Offered:** Fall

**PHIL 3120 Business Ethics**

[3 credit hours]

An examination of the ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, the law and the environment.

**Term Offered:** Spring, Summer, Fall

**PHIL 3140 Computers And Culture**

[3 credit hours]

A study of the philosophical issues computers raise which affect and reflect human values. Topics include censorship and privacy on the internet, virtual reality and the possibility of artificial intelligence.

**Term Offered:** Spring, Fall

**PHIL 3160 Data Science Ethics**

[3 credit hours]

A course which covers ethical and social implications of big data science and management. Topics include big data research ethics, privacy, identity, healthcare, and social justice.

**Term Offered:** Spring, Fall

**PHIL 3180 Environmental Ethics**

[3 credit hours]

An examination of our relation and responsibility to the natural environment. Topics include risk assessment, the value of non-human living things, resource use, economics, technology, environmental racism and ecology.

**Term Offered:** Spring, Summer, Fall

**PHIL 3210 Ancient And Medieval Philosophy**

[3 credit hours]

A study of ancient and medieval philosophy from the pre-Socratics to Aquinas.

**Term Offered:** Fall

**PHIL 3230 Modern Philosophy**

[3 credit hours]

A study of early modern philosophy from Descartes to Kant. Writing intensive course.

**Term Offered:** Spring

**PHIL 3240 Existentialism**

[3 credit hours]

An examination of existentialist philosophy from the 19th Century to the present as represented in the works of Kierkegaard, Nietzsche, Heidegger, Camus, Sartre, de Beauvoir, Fanon and others. Topics may include anxiety, meaning and meaninglessness, freedom, and community.

**Term Offered:** Spring, Fall

**PHIL 3310 Science And Society**

[3 credit hours]

A study of twentieth-century science and its relationships with government, industry, religion and medicine, including the emergence of Big Science and the future of science education and research.

**Term Offered:** Spring

**PHIL 3370 Medical Ethics**

[3 credit hours]

The application of ethics to the practice of medical professionals. Topics include authority, paternalism, truth-telling, informed consent, health care reform, genetic manipulation, abortion, infanticide and euthanasia.

**Term Offered:** Spring, Summer, Fall

**PHIL 3400 Ethical Theory**

[3 credit hours]

A examination of the assumptions, methods and content of major theories of ethics, with an emphasis on the nature of the good, moral obligations, rights and duties. Questions to be examined include: What is the best life for a human being? What is the foundation of the distinction between right and wrong? What motives do I have for acting morally?

**Term Offered:** Spring, Fall

**PHIL 3500 Eastern Thought**

[3 credit hours]

An examination of major philosophies of Asia and the Far East, their specific concerns and their relevance to contemporary problems.

**Term Offered:** Spring

Multicultural Non-US Diversity

**PHIL 3540 Feminism And Philosophy**

[3 credit hours]

An examination of feminist perspectives in philosophy, exploring the relevance of gender to central questions in ethics, political theory and epistemology.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**PHIL 3560 Aesthetics**

[3 credit hours]

An analysis and evaluation of aesthetic topics such as the definition of art, truth in the arts, the role of representation, the nature of aesthetic value and the character of aesthetic experience.

**Term Offered:** Spring, Fall

**PHIL 3570 Philosophy Of Religion**

[3 credit hours]

A critical, philosophical exploration of questions about the nature of religion, including the existence and nature of God, the problem of evil, and the relation between faith and knowledge. Other topics may include the relation of religion to science and morality, as well as the role of religious experience and miracles in religious belief.

**Term Offered:** Spring, Fall

**PHIL 3630 Philosophy Of Psychology**

[3 credit hours]

A philosophical examination of problems concerning the nature of mind such as the relation between mind and body, consciousness, free will and personal identity.

**Term Offered:** Fall

**PHIL 3750 Social And Political Philosophy**

[3 credit hours]

A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.

**Term Offered:** Spring, Fall

**PHIL 3760 Crime And Punishment**

[3 credit hours]

A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

**Term Offered:** Spring, Fall

**PHIL 3900 Seminar**

[3 credit hours]

Topics vary.

**Term Offered:** Spring, Fall

**PHIL 4210 Ancient Philosophy Seminar**

[3 credit hours]

An intensive study of the texts and arguments of Presocratic philosophers, Plato, Aristotle, or Hellenistic philosophers. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4230 Modern Philosophy Seminar**

[3 credit hours]

An intensive study of one or more Continental or British philosophers from the sixteenth through eighteenth centuries. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4240 19th Century European Philosophy**

[3 credit hours]

An intensive study of European philosophy after Kant, including Hegel, Marx, Kierkegaard and Nietzsche.

**Term Offered:** Fall

**PHIL 4250 Phenomenology**

[3 credit hours]

An intensive study of major works from phenomenological philosophers, such as Husserl, Heidegger, Sartre, or Merleau-Ponty. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4260 Recent European Philosophy**

[3 credit hours]

An examination of texts and problems in the Frankfurt school, post-structuralism, deconstruction and post-modernism, or of such thinkers as Habermas, Foucault, Derrida and Lyotard. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4270 American Philosophy**

[3 credit hours]

A study of the development of American Philosophy, or one or more of Pierce, James, Dewey, or Mead. Course may be repeated as topics vary.

**Term Offered:** Fall

**PHIL 4280 20th Century Analytic Philosophy**

[3 credit hours]

Selected readings from Frege, Russell, Wittgenstein, the Vienna Circle, the Ordinary Language school, and American neo-pragmatists such as Quine, Rorty and Davidson. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4300 Philosophy Of Natural Science**

[3 credit hours]

A study of scientific inquiry including the structure of scientific explanations, relations of evidence and confirmation, the metaphysics of theoretical entities, and the nature of scientific change and progress.

**Term Offered:** Spring, Fall

**PHIL 4400 Ethics Seminar**

[3 credit hours]

Selected topics or philosophers in ethical theory. Course may be repeated as topics vary.

**Term Offered:** Spring

**PHIL 4650 Philosophy Of Mind**

[3 credit hours]

Advanced study of issues in the philosophy of mind such as: intentionality and misrepresentation, rationality and interpretation, supervenience and reductionism, folk psychology and eliminative materialism. Course may be repeated as topics vary.

**Term Offered:** Spring

**PHIL 4750 Political Philosophy Seminar**

[3 credit hours]

Selected topics or philosophers in political philosophy. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4900 Advanced Seminar**

[2-4 credit hours]

Topics vary.

**Term Offered:** Spring, Fall

**PHIL 4920 Directed Readings**

[1-4 credit hours]

**PHIL 4990 Independent Study - Honors**

[3 credit hours]

**REL 1220 World Religions**

[3 credit hours]

A study of the major religions of the world, with an emphasis on their histories, beliefs and practices

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**REL 2000 Introduction To Religion**

[3 credit hours]

Critical and thematic study of the concepts, values, practices and world-views intrinsic to the religious life.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

**REL 2070 Early Judaism**

[3 credit hours]

Institutions, culture and religion from the earliest times through the Biblical period to the Medieval period.

**REL 2300 Understanding The Monotheistic Religions**

[3 credit hours]

A critical examination of the similarities and differences between the three major manifestations of monotheistic religion in the Western Tradition, Islam, Judaism and Christianity.

Core Arts &amp; Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**REL 2310 Old Testament/Tanakh**

[3 credit hours]

An examination of the history and ideas of the Jewish scriptures within the context of Judaism and their appropriation within Christian traditions.

**Term Offered:** Fall

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

**REL 2330 New Testament History And Ideas**

[3 credit hours]

Examination of the history and ideas of the New Testament.

**Term Offered:** Spring

Core Arts &amp; Humanities, Trans Mod Arts and Humanities

**REL 2350 Bible And Church Authority**

[3 credit hours]

This course will explore issues related to the sources and exercise of religious authority within Christianity, with an extended consideration given to a particular Christian tradition determined by the instructor.

**REL 2380 Topics In Catholic Thought**

[3 credit hours]

Critical examination of selected topics in contemporary Catholic thought and life.

**Term Offered:** Spring, Fall**REL 2410 Introduction To Christian Thought**

[3 credit hours]

This course will introduce students to the fundamental creedal commitments of Christianity, with an extended consideration given to a particular Christian tradition determined by the instructor.

**Term Offered:** Fall**REL 2500 Introduction To Islam**

[3 credit hours]

An introduction to the academic understanding of Islam. Topics may include; faith, rituals, law (Shari'h), jurisprudence (Figh), theology (Kalam), and stories from the Islamic heritage. Non-Western multicultural course. Multicultural Non-US Diversity

**REL 2610 Religious Studies Topics In The Humanities**

[3 credit hours]

Cross-listings with 2000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**REL 2980 Special Topics In Religious Studies**

[3 credit hours]

Special topics courses. Course may be repeated for credit as topics vary.

**Term Offered:** Spring, Fall**REL 3000 Religious Studies Proseminar**

[1 credit hour]

This course enhances students' professional development in fields related to religious studies.

**REL 3080 Jewish Biblical Studies**

[3 credit hours]

An examination of the texts and methods of historical and contemporary Jewish scriptural studies.

**Term Offered:** Spring, Fall**REL 3100 Islam**

[3 credit hours]

An overview of the central doctrines and the many cultural expressions of Islam, the role of the Qur'an and the Prophet Muhammad, Hadith as religious narrative, and tensions between law, modernity, and mysticism. Multicultural Non-US Diversity

**REL 3210 Ancient And Medieval Philosophy**

[3 credit hours]

A study of ancient and medieval philosophy from the pre-Socratics to Aquinas.

**Term Offered:** Fall**REL 3350 The Qur'an And Hadith**

[3 credit hours]

A study of the two main texts for Islamic belief and practice: Qur'an and the Hadith (the tradition of the Prophet Muhammad). Topics include their thematic structure, methods of interpretation, and their unique authority within Islam.

**REL 3420 Christian Ethical Perspectives**

[3 credit hours]

This course will study fundamental ethical concerns in Christian thought, with an extended consideration given to a particular Christian tradition determined by the instructor.

**Term Offered:** Spring**REL 3500 Eastern Thought**

[3 credit hours]

An examination of major philosophies of Asia and the Far East, their specific concerns and their relevance to contemporary problems.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**REL 3510 Comparative Religion: Living Non-Western Religions**

[3 credit hours]

Study of the major attitudes toward life, human existence and the world embodied in such major religions of the world as Buddhism, Confucianism, Hinduism, Islam and Taoism. Non-U.S. Diversity

**REL 3570 Philosophy Of Religion**

[3 credit hours]

A critical, philosophical exploration of questions about the nature of religion, including the existence and nature of God, the problem of evil, and the relation between faith and knowledge. Other topics may include the relation of religion to science and morality, as well as the role of religious experience and miracles in religious belief.

**Term Offered:** Spring, Fall**REL 3580 Contemporary Issues In Islam**

[3 credit hours]

An examination of key contemporary issues facing Islamic thought and culture, such as the changing and contested understandings of religious authority, jihad, role of women, courting, and family norms and the effects on all these of globalization and social media. Course may be repeated for credit as topics vary. Non-Western multicultural course.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity



**REL 3610 Religious Studies Topics In The Humanities**

[3 credit hours]

Cross listings with 3000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**REL 3670 Christian Worship And Ritual**

[3 credit hours]

This course will explore the history of both Christian ritual practice and the diverse theological understandings of that practice, with a focus on a particular Christian tradition determined by the instructor.

**REL 3710 Literature Of The Old Testament**

[3 credit hours]

A study of the Old Testament from the literary point of view, including ancient poetry, history, romance, short story, hymn, prophecy and wisdom writing. Recommended: ENGL 2700 or 2800.

**Term Offered:** Spring, Summer**REL 3720 Literature And Mythology**

[3 credit hours]

Study of classical and biblical mythologies in modern Western literature, private mythologies and literary adaptations of patterns from legend and folklore. Recommended: ENGL 2700 or 2800.

**Term Offered:** Fall**REL 3900 Seminar-Contemporary Religious Thought**

[3 credit hours]

A critical examination of selected topics in the area of religion.

**Term Offered:** Spring, Fall**REL 3980 Special Topics In Religious Studies**

[3 credit hours]

Special topics courses. Course may be repeated for credit as topics vary.

**Term Offered:** Spring, Fall**REL 4520 History Of The Middle East From 600 - 1500**

[3 credit hours]

A survey of Middle East history from the emergence of Islam and the formation of Islamic states until the establishment of the Ottoman and Persian empires in the 15th-16th centuries.

**REL 4600 Religious Studies Topics In The Arts**

[3 credit hours]

Cross listings with 4000-level courses offered in the visual and performing arts departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**Term Offered:** Fall**REL 4610 Religious Studies Topics In The Humanities**

[3 credit hours]

Cross listings with 4000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**Term Offered:** Spring, Fall**REL 4630 Religion, Violence and Peace**

[3 credit hours]

This seminar is a sustained exploration of whether religion is related to the occurrence of violence, peace or community-building, and if so, when and how.

**REL 4820 Anthropology Of Religion**

[3 credit hours]

Cross-cultural comparison of religious concepts, roles, and practices. The analysis of religious symbolism as well as their sociopolitical and economic basis.

**Prerequisites:** ANTH 2800 with a minimum grade of D-**REL 4900 Seminar In Religious Studies**

[3 credit hours]

Topics vary. Course may be repeated for credit as topics vary. See adviser for Seminar Request Form.

**Term Offered:** Spring**REL 4920 Directed Readings In Religious Studies**

[1-4 credit hours]

Critical inquiry of selected works under the guidance of an instructor on a topic not offered as a regular course.

**Term Offered:** Fall**REL 4940 Internship In Religious Studies**

[1-6 credit hours]

Student is placed in a campus or community setting approved by the instructor of record to work on issues pertaining to religion, and analyzes verbally and in writing how religion functioned in this setting.

**Term Offered:** Spring, Summer, Fall**REL 4960 Senior Thesis for Honors**

[3 credit hours]

Prerequisite: Junior standing and consent of program director

**Term Offered:** Spring, Summer, Fall**REL 4980 Special Topics In Religious Studies**

[3 credit hours]

Topics vary. Course may be repeated for credit as topics vary.

**Term Offered:** Spring, Fall**REL 4990 Independent Study In Religious Studies**

[1-4 credit hours]

Directed study in religious studies under the supervision of a religious studies instructor.

**Term Offered:** Spring, Fall

## B.A. in Philosophy

Code	Title	Hours
<b>History of Philosophy</b>		
PHIL 3210	Ancient And Medieval Philosophy	3
PHIL 3230	Modern Philosophy	3
<b>Analytical Philosophy</b>		
Select at least one of the following:		3
PHIL 3000	Symbolic Logic	
PHIL 3060	Philosophy Of Language	
<b>Ethical and Political Theory</b>		
Select at least one of the following:		3
PHIL 3400	Ethical Theory	
PHIL 3750	Social And Political Philosophy (every year)	
<b>Diverse Philosophical Traditions</b>		
Select at least one of the following:		3
PHIL 3240	Existentialism	

PHIL 3500	Eastern Thought	
PHIL 3540	Feminism And Philosophy	
PHIL 4240	19th Century European Philosophy	
PHIL 4250	Phenomenology	
PHIL 4260	Recent European Philosophy	
PHIL 4270	American Philosophy	
<b>Advanced Classes</b>		
Select at least two 4000-level philosophy courses		
<b>Related Courses</b>		
Select 18 hours of related courses <sup>1</sup>		18
Total Hours		33

<sup>1</sup> These courses should be selected in consultation with the Advisor. Majors planning to pursue graduate study in Philosophy are encouraged to take PHIL 3000, PHIL 3060, PHIL 3400 and PHIL 3750, as well as PHIL 3600 or 4000-level courses in these core areas of philosophy. Specialized programs of study can be designed for majors preparing for professional careers in law, medicine, or business. See the undergraduate advisor for details.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
PHIL 2200	Introduction To Philosophy	3
ENGL 1110	College Composition I	3
Elementary Foreign Language I		4
MATH 1180	Reasoning With Mathematics	3
	Hours	14
<b>Second Term</b>		
PHIL 2400	Contemporary Moral Problems	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
HIST 1010-1200 Arts/Humanities Core (History)		3
Social Sciences Core		3
	Hours	16
<b>Third Term</b>		
PHIL 3210	Ancient And Medieval Philosophy	3
Arts/Humanities Core (Fine Arts)		3
Intermediate Foreign Language I or approved culture course		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Natural Sciences Core		3
	Hours	15
<b>Fourth Term</b>		
PHIL 3230	Modern Philosophy	3
PHIL 3000	Symbolic Logic	3
or PHIL 3060	or Philosophy Of Language	
Intermediate Foreign Language II or approved culture course		3
Social Sciences Core		3

Related or Minor course	3
Hours	15

#### Fifth Term

PHIL Major Elective (Ethical or Social Political)	3
Diversity of US	3
Social Sciences Core	3
Natural Sciences Core	3
Natural Sciences Core (Lab)	1
Related or Minor course	3
Hours	16

#### Sixth Term

PHIL Major Elective (4000-level Seminar)	3
Natural Sciences Core	3
Related or Minor course	6
Elective	3
Hours	15

#### Seventh Term

PHIL Major Elective (4000-level Seminar)	3
PHIL Major Elective (Post-Kantian Philosophy)	3
Related or Minor course	3
Non-US Diversity	3
Elective	3
Hours	15

#### Eighth Term

PHIL 2000- PHIL4000	Major Elective	3
Related or Minor course		3
Elective		12
Hours		18
Total Hours		124

## Honors in Philosophy

- Admission: Junior and senior majors with an overall minimum GPA of 3.3 may work for the citation "honors in philosophy."
- Requirements  
Upon graduation, the student shall have a 3.6 GPA in philosophy courses. The student shall complete a substantial term paper in each of two courses with two different philosophy faculty members.
  - One paper shall be work completed for a regular 4000-level seminar.
  - One paper shall be an honors thesis completed while registered for PHIL 4990 under the direction of a second faculty member.

Upon the recommendation of the two respective instructors and with the approval of a majority of the philosophy faculty, the student shall be awarded the citation "honors in philosophy."

## B.A. in Religious Studies

All students majoring in Religious Studies must take a minimum of 31 hours in Religious Studies plus 18 hours of related courses. The course requirements for the major are as follows:

Code	Title	Hours
<b>Required Courses</b>		
REL 2000	Introduction To Religion	3
REL 3570	Philosophy Of Religion	3
REL 3000	Religious Studies Proseminar	1
<b>Distribution Requirements</b>		
At least one course must be taken in each of the three areas listed below. At least one course must be taken at the 3000-4000 level. The student may petition their advisor to have other courses substituted for the list below in fulfillment of the distribution requirement. <sup>1</sup>		9
<b>Group One</b>		
REL 2310	Old Testament/Tanakh	
REL 2330	New Testament History And Ideas	
REL 2350	Bible And Church Authority	
REL 2410	Introduction To Christian Thought	
REL 3420	Christian Ethical Perspectives	
REL 3080	Jewish Biblical Studies	
REL 3670	Christian Worship And Ritual	
<b>Group Two</b>		
REL 2300	Understanding The Monotheistic Religions	
REL 2500	Introduction To Islam	
REL 3350	The Qur'an And Hadith	
REL 3580	Contemporary Issues In Islam	
<b>Group Three</b>		
REL 3500	Eastern Thought	
<b>Electives</b>		
All majors take 15 hours of electives, i.e., any 2000-4000 level REL course not counted toward the above requirements. At least 6 hours of these 15 hours must be taken at the 4000 level. Students may consider directing some of these hours toward a concentration, toward a Religious Studies Internship REL 4940 taken concurrently or after the Proseminar, or toward a Senior Thesis for Honors REL 4960 if pursuing departmental honors. <sup>2</sup>		15
<b>Optional: Concentration Areas</b>		
Students may opt to dedicate 12 hours toward a concentration in one of the four sub-fields of religious studies below to receive a BA degree in religious studies with a concentration in this subfield. Students may also opt out of concentrating to receive a BA in religious studies per se. Distribution courses, elective courses, courses in related fields an independent students that align with the concentration in question can all count toward a concentration with prior approval of the Advisor. <sup>3</sup>		
<b>Christian Studies</b>		
Select 12 hours related to the study of Christianity, selected from courses including but not limited to:		
REL 2300	Understanding The Monotheistic Religions	
REL 2310	Old Testament/Tanakh	
REL 2330	New Testament History And Ideas	
REL 2350	Bible And Church Authority	
REL 2380	Topics In Catholic Thought	
REL 2410	Introduction To Christian Thought	
REL 3210	Ancient And Medieval Philosophy	
REL 3420	Christian Ethical Perspectives	
REL 3670	Christian Worship And Ritual	
<b>Islamic Studies</b>		
Select 12 hours related to the study of Islam, selected from courses including but not limited to:		
REL 2300	Understanding The Monotheistic Religions	
REL 2500	Introduction To Islam	
REL 3210	Ancient And Medieval Philosophy	
REL 3100	Islam	
REL 3350	The Qur'an And Hadith	
REL 3580	Contemporary Issues In Islam	
REL 4520	History Of The Middle East From 600 - 1500	
<b>Interreligious Studies</b>		
Select 12 hours related to the study of interreligion, selected from courses including but not limited to:		
REL 3210	Ancient And Medieval Philosophy	
REL 3510	Comparative Religion: Living Non-Western Religions	
REL 4900	Seminar In Religious Studies	
REL 4920	Directed Readings In Religious Studies (interreligious focus)	
REL 4940	Internship In Religious Studies (interreligious focus)	
3 interdisciplinary courses in interreligious studies selected in consultation with the advisor.		
<b>Philosophy of Religion</b>		
Select 12 hours related to the study of philosophy of religion, selected from courses including but not limited to:		
PHIL 1010	Introduction To Logic or PHIL 102C Critical Thinking	
PHIL 2200	Introduction To Philosophy	
PHIL 3000	Symbolic Logic	
PHIL/REL 3210	Ancient And Medieval Philosophy	
PHIL 3230	Modern Philosophy	
REL 3570	Philosophy Of Religion	
4000-level seminars cross-listed in PHIL/REL		
PHIL/REL 4920	Directed Readings (Philosophy of religion focus)	
PHIL/REL 4990	Independent Study - Honors (Philosophy of religion focus)	
Total Hours		31

REL 2000	Introduction To Religion	3
REL 3570	Philosophy Of Religion	3
REL 3000	Religious Studies Proseminar	1

**Distribution Requirements**

At least one course must be taken in each of the three areas listed below. At least one course must be taken at the 3000-4000 level. The student may petition their advisor to have other courses substituted for the list below in fulfillment of the distribution requirement.<sup>1</sup>

#### Group One

REL 2310	Old Testament/Tanakh
REL 2330	New Testament History And Ideas
REL 2350	Bible And Church Authority
REL 2410	Introduction To Christian Thought
REL 3420	Christian Ethical Perspectives
REL 3080	Jewish Biblical Studies
REL 3670	Christian Worship And Ritual

#### Group Two

REL 2300	Understanding The Monotheistic Religions
REL 2500	Introduction To Islam
REL 3350	The Qur'an And Hadith
REL 3580	Contemporary Issues In Islam

#### Group Three

REL 3500	Eastern Thought
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#### Electives

All majors take 15 hours of electives, i.e., any 2000-4000 level REL course not counted toward the above requirements. At least 6 hours of these 15 hours must be taken at the 4000 level. Students may consider directing some of these hours toward a concentration, toward a Religious Studies Internship REL 4940 taken concurrently or after the Proseminar, or toward a Senior Thesis for Honors REL 4960 if pursuing departmental honors.<sup>2</sup>

#### Optional: Concentration Areas

Students may opt to dedicate 12 hours toward a concentration in one of the four sub-fields of religious studies below to receive a BA degree in religious studies with a concentration in this subfield. Students may also opt out of concentrating to receive a BA in religious studies per se. Distribution courses, elective courses, courses in related fields an independent students that align with the concentration in question can all count toward a concentration with prior approval of the Advisor.<sup>3</sup>

#### Christian Studies

Select 12 hours related to the study of Christianity, selected from courses including but not limited to:

REL 2300	Understanding The Monotheistic Religions
REL 2310	Old Testament/Tanakh
REL 2330	New Testament History And Ideas
REL 2350	Bible And Church Authority
REL 2380	Topics In Catholic Thought
REL 2410	Introduction To Christian Thought
REL 3210	Ancient And Medieval Philosophy

REL 3420	Christian Ethical Perspectives
REL 3670	Christian Worship And Ritual
<b>Islamic Studies</b>	
Select 12 hours related to the study of Islam, selected from courses including but not limited to:	
REL 2300	Understanding The Monotheistic Religions
REL 2500	Introduction To Islam
REL 3210	Ancient And Medieval Philosophy
REL 3100	Islam
REL 3350	The Qur'an And Hadith
REL 3580	Contemporary Issues In Islam
REL 4520	History Of The Middle East From 600 - 1500
<b>Interreligious Studies</b>	
Select 12 hours related to the study of interreligion, selected from courses including but not limited to:	
REL 3210	Ancient And Medieval Philosophy
REL 3510	Comparative Religion: Living Non-Western Religions
REL 4900	Seminar In Religious Studies
REL 4920	Directed Readings In Religious Studies (interreligious focus)
REL 4940	Internship In Religious Studies (interreligious focus)
3 interdisciplinary courses in interreligious studies selected in consultation with the advisor.	
<b>Philosophy of Religion</b>	
Select 12 hours related to the study of philosophy of religion, selected from courses including but not limited to:	
PHIL 1010	Introduction To Logic or PHIL 102C Critical Thinking
PHIL 2200	Introduction To Philosophy
PHIL 3000	Symbolic Logic
PHIL/REL 3210	Ancient And Medieval Philosophy
PHIL 3230	Modern Philosophy
REL 3570	Philosophy Of Religion
4000-level seminars cross-listed in PHIL/REL	
PHIL/REL 4920	Directed Readings (Philosophy of religion focus)
PHIL/REL 4990	Independent Study - Honors (Philosophy of religion focus)
Total Hours	
31	

## Related Courses

As part of the general College of Arts and Letters requirements, students must take 18 hours of related courses outside the Religious Studies program that have been approved by the student's advisor. A minimum of 9 of these hours must be taken at the 3000 level or above. A Minor or major in another department may be used to satisfy the related courses requirement.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
REL 1220	World Religions	3
ENGL 1110	College Composition I	3
Elementary Foreign Language I		4
Arts/Humanities Core (Fine Arts)		3
MATH 1180	Reasoning With Mathematics	3
Hours		17
<b>Second Term</b>		
REL 2000	Introduction To Religion	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
HIST 1010-1200 Arts/Humanities Core (History)		3
Social Sciences Core		3
Hours		16
<b>Third Term</b>		
Select one course from Group 1:		3
REL 2310	Old Testament/Tanakh	
REL 2330	New Testament History And Ideas	
REL 2350	Bible And Church Authority	
REL 2410	Introduction To Christian Thought	
REL 3080	Jewish Biblical Studies	
REL 3420	Christian Ethical Perspectives	
REL 3670	Christian Worship And Ritual	
Select one course from Group 2:		3
REL 2300	Understanding The Monotheistic Religions	
REL 2980	Special Topics In Religious Studies (Intro to Islam)	
REL 3350	The Qur'an And Hadith	
REL 3580	Contemporary Issues In Islam	
Intermediate Foreign Language I or approved culture course		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Natural Sciences Core		3
Hours		15
<b>Fourth Term</b>		
REL 3570	Philosophy Of Religion	3
Select one course from Group 3:		3
REL 3500	Eastern Thought	
Intermediate Foreign Language II or approved culture course		3
Social Sciences Core		3
Related or Minor course		3
Hours		15
<b>Fifth Term</b>		
REL Major Elective		6
Elective (WAC)		3

Natural Sciences Core	3
Natural Sciences Core (Lab)	1
Related or Minor course	3
Hours	16

<b>Sixth Term</b>		
REL 3000	Religious Studies Proseminar	1
REL Major Elective		3
Elective		6
Social Sciences Core		3
Diversity of US		3
Hours		16

<b>Seventh Term</b>		
REL 4XXX Major Elective, REL seminar, Internship, or Honors Thesis		3
Related or Minor course		3
Elective		9
Hours		15

<b>Eighth Term</b>		
REL 4XXXX Seminar, Internship, or Honors Thesis		3
Related or Minor course 3000-4000 level		6
Elective		5
Hours		14
Total Hours		124

## Honors in Religious Studies

Meet with the departmental major advisor to discuss the qualifications and to develop a plan to meet the honors requirements. May be combined with any concentration or not. Requires:

1. A 3.0 cumulative GPA and junior or senior status in order to seek honors
2. A 3.4 minimum cumulative GPA in REL courses. Transfer courses are not included
3. Honors Thesis: REL 4960
4. Paper from 4000-level Honors seminar course.

## Minor in Philosophy

Specific predesigned programs of study are available in the following areas:

- Prelaw
- Philosophy and medicine
- Philosophy and education
- Philosophy of natural science
- Philosophy of social science

Also available is a philosophy minor with honors. Specific requirements are:

1. Requirements, list under the "Requirements" tab.
2. At least two courses at the 4000 level.

3. Either an honors section of a 3000-level course or a 3000-level course taken under an honors contract.
4. A minimum GPA of 3.3 in philosophy.

A minor in Philosophy complements a variety of University major programs in the humanities, the social and natural sciences, education and business. All minors in Philosophy must meet the following requirements:

1. 21 hours in philosophy with a minimum GPA of 2.0.
2. PHIL 3210 or PHIL 3230.
3. At least one course numbered 4000 or above.
4. No more than one independent study, PHIL 4920, will count toward the completion of the minor.
5. The program of study must be approved by the department undergraduate Adviser and verified before graduation.

## Religious Studies Minor

The University of Toledo offers a Religious Studies Minor program. All students minoring in Religious must take a minimum of 18 hours in Religious Studies according to the following program:

Code	Title	Hours
<b>Required Courses</b>		
REL 2000	Introduction To Religion	3
REL 3570	Philosophy Of Religion	3
Recommended but not required: Proseminar		
<b>Distribution Requirements</b>		
Select one course each of the three of the following distributions. See major for details.		9
<i>Group One: Judaism and Christianity</i>		
<i>Group Two: Islam</i>		
<i>Group Three: Eastern (Asian) Religions</i>		
<b>Elective Course</b>		
Select one course at the 4000 level. See major for details.		3
Total Hours		18

## Department of Political Science

### Political Science cCONTACTS

Sam Nelson, Chair and Undergraduate Adviser, Pre-law Adviser  
 Renee Heberle, Undergraduate Honors in Political Science  
 Jami Taylor, Internship Coordinator

### Advanced Placement Program

Refer to the University of Toledo's Registrar page at [https://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](https://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Degrees Offered

- B.A. in Political Science (p. 114)
- Minor in Political Science (p. 115)

### PSC 1200 American National Government

[3 credit hours]

An introductory survey of the institutions, processes and politics of the government of the United States and its relationship to state governments. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

### PSC 1710 Current International Problems

[3 credit hours]

A course designed to give the student a perspective on world affairs through an examination of some contemporary international problems like war, human rights, democratization, regional politics, and global health and the environment.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

### PSC 2210 Women And Politics

[3 credit hours]

An exploration of women and gender relations in US political life. Special attention is paid to differences among women, their socializing experiences, political power bases, and legal status. Multicultural US Diversity

### PSC 2300 Principles Of State And Local Government

[3 credit hours]

A study of the political processes and institutions of American state and local governments, with attention given to selected areas of public policy and intergovernmental relations.

**Term Offered:** Spring, Summer

### PSC 2400 Topics in Political Science

[3 credit hours]

Examination of current topics in Political Science. Area and topic to be determined by instructor.

**Term Offered:** Spring

### PSC 2600 Principles of Comparative Politics

[3 credit hours]

How can we explain the vast array of political systems around the world? This course examines the political systems of various countries and the internal and external factors shaping their political decisions. We will focus on institutional arrangements at the country level and the shaping forces behind their design, as well as on broad global topics affecting national politics

**Term Offered:** Spring, Fall

### PSC 2700 Principles Of International Relations

[3 credit hours]

An examination of the theoretical and methodological foundations of the international system. Through case studies, students will analyze and predict issues of cooperation and competition among states. For example, why does war occur? Why does the international system have particular international institutions rather than others? What best explains a state's foreign policy?

**Term Offered:** Spring, Summer, Fall



**PSC 2800 Principles Of Political Theory**

[3 credit hours]

This course investigates core concepts in the history of political theory such as justice, liberty, and equality. We discuss how and why the influence of certain authors and ideas persists. Contemporary issues are interpreted using these authors and ideas in order to strengthen critical thinking skills and broaden students' thinking about politics.

**Term Offered:** Spring, Fall**PSC 3150 Research and Writing in Political Science**

[3 credit hours]

This course introduces the student to academic writing and research techniques in the political science discipline. Topics covered include: research ethics, scholarly literature review, peer-review process, research questions and research design, methodological approaches, and data analysis, among others.

**Term Offered:** Spring**PSC 3210 Political Parties**

[3 credit hours]

Why are political parties central to organizing democracy? This course examines how they set the terms of public debate, mobilize citizens, inform voter preferences, and shape policy.

**Term Offered:** Spring**PSC 3250 Public Opinion**

[3 credit hours]

This course explores the role of public opinion in American politics. It also develops data analysis skills and familiarizes students with survey development.

**Term Offered:** Spring, Fall**PSC 3270 Campaign and Elections**

[3 credit hours]

Campaigns and elections are vital components of democracy in the United States. In this course, we examine how candidates, parties, and citizens participate in the electoral process. Topics covered throughout the semester include candidate recruitment, voting behavior, advocacy groups, campaign finance, and the impact of new technology on voter mobilization.

**Term Offered:** Spring, Fall**PSC 3280 Race and American Politics**

[3 credit hours]

This course examines the role that race plays in the development of American politics. The class investigates definitions of race, how they have evolved, and how they continue to influence policy debates. This seminar assesses the impact that different racial groups, and their struggles for equality, have had on American democracy. This course examines the leading theoretical frameworks and empirical findings to analyze the relationship between race and American political development.

**Term Offered:** Spring, Summer, Fall  
Multicultural US Diversity**PSC 3410 Principles of Public Policy**

[3 credit hours]

This course is an introduction to public policy. It is focused on the factors that affect policymaking in the United States.

**Term Offered:** Spring, Summer, Fall**PSC 3500 Principles Of Law**

[3 credit hours]

An overview of the politics of law. We examine such questions as the sources and existence of law, the legal process in civil and criminal cases, the nature of rights and the search for justice through participation in the legal system. Addresses specific issues such as plea bargaining and jury trials, personal injury lawsuits, national security and police powers, and the nomination and confirmation of federal judges.

**Term Offered:** Spring, Summer, Fall**PSC 3510 Constitutional Law I**

[3 credit hours]

Examines the political and institutional role of the U.S. Supreme Court in the development of the American legal system, the separation of powers between the executive, legislative, and judicial branches of the federal government, and the relationship between the federal government and the states. The course focuses on the analysis of Supreme Court cases as well as political science and legal scholarship.

**Term Offered:** Fall**PSC 3520 Constitutional Law and Politics II**

[3 credit hours]

Examines the political and institutional role of the Supreme Court in the development of the U.S. system of civil liberties, the relationship between judicial decisions and state actions affecting rights such as free speech, religion, and privacy, and the underlying theories of civil liberty in a democratic society. The course focuses on the analysis of Supreme Court cases as well as political science and legal scholarship.

**Term Offered:** Spring**PSC 3600 Fascism and Populism in Comparative Perspective**

[3 credit hours]

A comparative survey of historical fascist regimes and contemporary populist governance, mainly in Europe and Latin America. Contemporary populist rule is frequently equated with fascism but the differences are significant. In this course we will examine the differences and similarities between the two regime types.

**PSC 3690 Peasant Politics**

[3 credit hours]

The study of political science has become increasingly urban but peasant movements remain a significant political force around the world, particularly in less-developed regions. In this course we will study peasants and their politics worldwide from both a historical and contemporary perspective.

**PSC 3730 American Foreign Policy**

[3 credit hours]

An examination of the American foreign policy-making process as well as an analysis of the major problems facing the United States in its interaction with the international environment.

**Prerequisites:** (PSC 1200 with a minimum grade of D- or PSC 1300 with a minimum grade of D-) or (PSC 1400 with a minimum grade of D- or PSC 1710 with a minimum grade of D-) or PSC 2700 with a minimum grade of D-

**PSC 3790 Model United Nations/Model European Union**

[1 credit hour]

This is a faculty-advised, student-led simulation course. Students are exposed to the decision-making procedures of one of two major international organizations: The United Nations or The European Union. Through role-play, students will represent countries, delegates, prime ministers, foreign ministers, and government officials. Whenever possible, the organization represented in a given semester (UN or EU) will be chosen based on the opportunity to attend a conference where students will apply the concepts learned throughout the semester.

**PSC 3800 Sexual Politics**

[3 credit hours]

This course critically examines gender, sex and sexuality as identities, practices, and relationships. Through readings in feminist political theory and history, we study state practices, social norms, and historical movements for change to understand why and how various forms of gender, sex and sexuality become normal or are challenged in unexpected ways.

**Term Offered:** Spring, Fall**PSC 3820 Contemporary Political Ideas**

[3 credit hours]

Surveys developments and themes in political theory since the early 20th century. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity politics.

**Term Offered:** Spring**PSC 3850 Sports, Politics and Policy**

[3 credit hours]

This course explores the intersection of sports with politics and policy-making. Topics covered include sports and nationalism, sports and international diplomacy, globalization and sports, economic development and sport stadiums, baseball and antitrust law, Title IX and women's athletics, college athletics and race, and athletes and political advocacy.

**PSC 3990 Independent Study For Honors Students**

[3 credit hours]

Individual reading and research in selected topics for honors students.

**Term Offered:** Spring, Summer, Fall**PSC 4220 Advocacy Groups in US Politics**

[3 credit hours]

This course investigates the role of advocacy groups in American politics. It develops practical lobbying skills through experiential learning and covers topics such as the role of advocacy groups in campaigns and elections, grass roots mobilization, and agenda setting.

**Term Offered:** Spring, Fall**PSC 4230 Presidency**

[3 credit hours]

Presidents enjoy special prominence in the American political system. However, they are strongly influenced by their interactions with other political institutions, such as Congress, courts, the bureaucracy, and political parties. This course examines the presidency's original design and how the office has developed over time. We also investigate contemporary cases and controversies in presidential power.

**Term Offered:** Spring**PSC 4280 U.s. Congress**

[3 credit hours]

Despite its key role in our political system, the U.S. Congress is not well understood by the public. This course examines how it works: the committee system, parties, and arcane legislative procedures. We consider topics like the impact of party polarization on congressional gridlock, the impact of divided government on policymaking, and how to improve representation.

**Term Offered:** Spring, Summer, Fall**PSC 4300 Principles of Public Administration**

[3 credit hours]

This course provides an overview of public administration. It addresses organization theory, decision making, budgeting, public policy, and the changing role of public institutions. It covers important democratic, professional, ethical and human values that are central to public administration.

**PSC 4320 Urban Policy And Administration**

[3 credit hours]

What does it take to govern a city and its environs? In this course, we examine the balance between the pressing needs of a city and the many economic and political constraints that citizens, leaders, and experts must navigate to achieve their goals.

**Term Offered:** Fall**PSC 4340 Environmental Policy**

[3 credit hours]

Policy for air and water pollution control, hazardous wastes, nuclear wastes. Examination of EPA, Congressional committees, state and city agencies. Some international issues.

**Term Offered:** Fall**PSC 4360 Ethics In Public Policy And Administration**

[3 credit hours]

Examination of values and principles which influence public policy and public administration. Applications to policy problems and responsibilities of public administrators will be emphasized.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Spring**PSC 4410 Management Of Nonprofit Organizations**

[3 credit hours]

Examination of forces that influence management of nonprofit organizations in the United States, and their roles and responsibilities. Consideration of organizational structures, leadership, fiscal administration, and relations with citizens and other organizations.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Spring**PSC 4430 Public Personnel Administration**

[3 credit hours]

The organization, operation and problems of public personnel systems in the functions of selection, training, classification and employee relations.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Fall

**PSC 4440 Budgeting And Financial Administration**

[3 credit hours]

An examination of the institutions and techniques of financial administration, including government accounting, budgeting, financial management and governmental choice. Prior knowledge of spreadsheet applications recommended.

**Prerequisites:** PSC 3420 with a minimum grade of D-

**Term Offered:** Spring

**PSC 4520 The Politics of Development and Underdevelopment**

[3 credit hours]

This course examines political and economic development through a comparative lens. We focus on developing regions of the world to explore successes, possibilities, outcomes, and setbacks in their path towards achieving "developed" status.

**PSC 4530 Civil Rights**

[3 credit hours]

Examines the role of the US Supreme Court, judicial policy-making, and administrative implementation in the development of policies involving race, gender, sexual orientation, and the family. Issues covered include equal protection, voting rights, and affirmative action.

**Term Offered:** Summer, Fall

**PSC 4550 CONTEMPORARY ISSUES IN LAW AND POLITICS**

[3 credit hours]

Examines current controversies in US law and politics drawing on recent research in political theory, constitutional history, and legal doctrine. Includes issues such as freedom of speech, presidential war powers, and religious freedom.

**Term Offered:** Spring, Fall

**PSC 4560 Law And Public Administration**

[3 credit hours]

The impact of law on public administration with emphasis on judicial review, agency rule making and procedures.

**Prerequisites:** PSC 3420 with a minimum grade of D-

**PSC 4580 International Law**

[3 credit hours]

A course focusing on the foundations of international law and the current use of international law in cases covering a wide range of issues such as war, weapons, diplomacy, the environment, economics, and human rights.

**PSC 4590 Law, Policy, And The Politics of Sexuality**

[3 credit hours]

This course explores the public policies that affect the lesbian, gay, bisexual and transgender communities in the United States and in other countries. It examines the factors that affect policymaking in this area.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**PSC 4640 The European Union**

[3 credit hours]

An analysis of the evolution, institutional structure, and operation of the European Union. Issue areas include human rights, trade, migration and refugees, international and domestic law, and foreign policy.

**Term Offered:** Spring, Fall

**PSC 4660 Politics of Africa**

[3 credit hours]

There are multiple political systems, ethnic identities and external interests among the countries in Sub-Saharan Africa. Applying a comparative lens, we will survey Africa's pre-colonial and colonial heritage; and economic, cultural, social and environmental characteristics that help define Africa. We will delve deeper into a few countries as case studies as well as examine the international and regional influences, thereby gaining a broad understanding of the political, social and economic implications surrounding Africa today.

**Term Offered:** Fall

Multicultural Non-US Diversity

**PSC 4680 Politics of Latin America**

[3 credit hours]

This course provides a survey of the Latin American region, its political transformation, and place in international politics. It covers an array of issues that have shaped and continue to shape the region: its history, its people, its culture, institutions and politics, and social and economic issues. Themes are approached both from a regional and country-level perspective.

Multicultural Non-US Diversity

**PSC 4720 International Organization**

[3 credit hours]

A study of the background, general concepts and problems of international organizations including the United Nations, regional organizations and non-governmental organizations. Issues covered include war, security, human rights, trade, international law, and global health.

**Term Offered:** Fall

**PSC 4740 Politics of the Middle East**

[3 credit hours]

An advanced examination of international relations theory applied to the Middle East and a survey of modern Middle Eastern governments, cultures, and institutions with case studies on key issues facing the region.

Multicultural Non-US Diversity

**PSC 4750 Terrorism in International Relations**

[3 credit hours]

This course will give students a comparative historical, empirical, and theoretical overview of the causes, strategies, and goals of terrorist and counter-terrorism. The primary focus of the course is on the comparative and international nature of terrorism. Global and regional case studies will be used to better understand issues related to terrorism.

**PSC 4770 Human Rights**

[3 credit hours]

What are human rights? How are human rights created? Why do states protect or repress human rights? This class answers these questions by examining both the theoretical and empirical contributions to the study of human rights from the social sciences and law. In addition, human rights best (and worst) practices are considered.

**Term Offered:** Spring

**PSC 4810 Environmental Justice**

[3 credit hours]

Environmental Justice examines the unequal distribution of environmental benefits and burdens among vulnerable communities. This course will examine the challenges and solutions associated with environmental justice, both as a social movement and as a public policy initiative. We will discuss several different policy areas like health, pollution, hazardous waste siting, climate change, food, and natural disasters; and strategies applied by NGOs and interest groups, to understand the patterns of environmental inequality and injustice.

**PSC 4900 Politics of Asia**

[3 credit hours]

Asia is the largest of all continents and hosts more than half the world's population. This course will apply a comparative framework to explore the historical, cultural, and social forces shaping the politics of Asia. We will explore the similarities and variations across countries, regional influences of countries on one another, and the role of the international community, with special focus on U.S. - Asia relations (such as North-South Korea, Japan, India, China).

Multicultural Non-US Diversity

**PSC 4940 Applied Politics Internship**

[3 credit hours]

A study of electoral politics, public decision-making or policy implementation through internships with candidates, political parties, public officials or governmental or nonprofit agencies.

**Term Offered:** Spring, Summer, Fall**PSC 4950 Capstone in Political Science**

[1 credit hour]

This course provides the opportunity to integrate and reflect on knowledge and experiences gained during completion of the political science major with an eye towards post-graduation endeavors such as graduate or professional study, or employment. Topics include how to construct a portfolio and write cover letters, resumes, and CVs.

**PSC 4960 Senior Honors Thesis**

[3 credit hours]

Supervised research and writing for honors students only.

**Term Offered:** Spring, Summer, Fall**PSC 4980 Current Topics In Political Science**

[3 credit hours]

Timely examination of emerging issues within the various segments of the discipline of political science.

**Term Offered:** Spring, Fall**PSC 4990 Independent Study In Political Science**

[1-3 credit hours]

Individual study and research in a selected political science topic under mentorship of a faculty member.

**Term Offered:** Spring, Summer, Fall

Departmental Honors prepares majors for post-graduate study, for law school, for advanced work in policy research, and for other professional pursuits. It emphasizes intellectual organization and concept formation through the processes of research and writing. Honors work fosters intellectual growth through independent study, involves students in research, prepares students for the intellectual rigor of graduate study, and makes students more competitive for the best employment opportunities upon graduation.

These are the skills you will need in many professional positions—whether in governmental service, non-profit organizations, or the private sector. Departmental Honors offers the opportunity to specialize in one of the sub-disciplines of Political Science and to work closely with faculty in the Student's areas of interest.

If you aspire to do the kind of work required for Departmental Honors, we encourage you to contact the Honors Adviser (Dr. Heberle). Judge for yourself whether this individualized, intensive program is right for you.

Departmental Honors work is distinct from the University Honors Program, but works closely with it. You must have an overall UT GPA of at least 3.0 and a GPA of 3.3 or higher in the major and be in your third year of study to sign up for honors work. You must also complete PSC 4960 Senior Honors Thesis. PSC 3150 Research and Writing in Political Science is strongly recommended no later than Spring semester of your junior year.

## B.A. in Political Science

Code	Title	Hours
PSC 1200	American National Government	3
In addition, students must take three of the following:		9
PSC 2600	Principles of Comparative Politics	
PSC 2700	Principles Of International Relations	
PSC 2800	Principles Of Political Theory	
PSC 3410	Principles of Public Policy	
PSC 4950	Capstone in Political Science	1
Complete additional courses in the department to satisfy the 31-hour requirement. PSC 3150 Research and Writing in Political Science is highly recommended.		18
Total Hours		31

### Optional Legal Studies Concentration

This program is designed to allow students to focus their studies on law, legal processes, and legal institutions for careers in the legal profession, for leadership in public affairs, as well as for an interesting major. This solid liberal arts specialization provides excellent preparation for law school and a subsequent career as a lawyer or judge.

Code	Title	Hours
<b>Concentration in Legal Studies</b>		
The foundation for this specialization is a B.A. in Political Science, within which the student must have included the following two courses:		
PSC 1200	American National Government	3
PSC 3500	Principles Of Law	3
At least four courses from the department's specialized law and legal studies course offerings:		12
PSC 3510	Constitutional Law I	
PSC 3520	Constitutional Law and Politics II	
PSC 4530	Civil Rights	
PSC 4550	CONTEMPORARY ISSUES IN LAW AND POLITICS	
PSC 4580	International Law	
Three courses from the following four:		9

PSC 2600	Principles of Comparative Politics	
PSC 2700	Principles Of International Relations	
PSC 2800	Principles Of Political Theory	
PSC 3410	Principles of Public Policy	
Major Electives <sup>1</sup>		6
Total Hours		33

<sup>1</sup> While only two additional electives within political science are required for the Legal Studies specialization, students may elect to complete additional classes in the discipline.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
PSC 1200	American National Government	3
	Elementary Foreign Language I	4
	HIST 1010-1200 Arts/Humanities Core (History)	3
	Hours	17

<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
	Elementary Foreign Language II	4
PSC 2700	Principles Of International Relations	3
	Natural Sciences Core	3
	Natural Sciences Core (Lab)	1
	Hours	14

<b>Third Term</b>		
PSC 2600	Principles of Comparative Politics	3
PSC 2800	Principles Of Political Theory (WAC)	3
	Intermediate Foreign Language I or approved culture course	3
	ENGL 2710-2800 Arts/Humanities Core (English Lit)	3
	Arts/Humanities Core (Fine Art)	3
	Hours	15

<b>Fourth Term</b>		
PSC 3410	Principles of Public Policy	3
	Intermediate Foreign Language II or approved culture course	3
	Natural Sciences Core	3
	Social Sciences Core	3
	Elective	3
	Hours	15

<b>Fifth Term</b>		
	PSC Major Elective	6
	Related or Minor course (WAC)	3
	Related or Minor course	3
	Elective	3
	Hours	15

<b>Sixth Term</b>		
	PSC Major Elective	3
	PSC Major Elective	3
	Related or Minor course	3
	Elective	3
	Diversity of US	3
	Hours	15

<b>Seventh Term</b>		
	PSC Major Elective	6
	Non-US Diversity	3
	Elective	3
	Related or Minor course	3
	Hours	15

<b>Eighth Term</b>		
PSC 4950	Capstone in Political Science	1
	Elective	10
	Related or Minor course	3
	Hours	14
	Total Hours	120

## Minor in Political Science

Students seeking a minor in political science must complete at least 21 hours of course work at the 2000 level or above in the discipline, chosen in consultation with a departmental adviser. It is recommended that minors include in their undergraduate program the introductory course in American Government (PSC 1200) and three of the four gateway subfields. At least 9 of the 21-credit hour minimum must be at the 3000-4000 levels.

## Department of Psychology

Kim L. Gratz, Ph.D, Chair  
Kamala London, PhD., Associate Chair and Undergraduate Coordinator  
Alexandria Harris, Undergraduate Advising

Ms. Harris can answer basic questions about degree requirements, help you tailor your course selections to meet your goals, and fill out graduation progress evaluations. She is available on a walk-in basis. Students may also make an appointment by calling her office as 419.530.2235, or emailing her at Alexandria.harris@utoledo.edu.

### Advanced Placement Program

Refer to the University of Toledo's Registrar page at [https://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](https://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Degrees Offered

- B.A. in Psychology (p. 116)
- Minor in Psychology (p. 117)



## Requirements for Admission

Psychology majors are encouraged to earn the graduation citation "Honors in Psychology" through the Department of Psychology honors program. A student can be admitted at any time but no later than the end of the first semester of their junior year. The following criteria must be met for admission to the program:

1. An overall GPA of 3.8 or higher *or* Good standing in the College Honors program
2. A grade of B or higher in PSY 2100
3. A GPA in Psychology courses of 3.4 or higher
4. Recommendation by two Department faculty members

Check with your advisor about your suitability for honors. If interested, contact the Department Honors Advisor for application materials.

## Requirements for Graduation with Honors in Psychology

Once admitted, Honors students must meet all Requirements for the Undergraduate Major with the addition of:

Code	Title	Hours
PSY 3800	Honors Proposal (Review a topic under the guidance of a faculty member and design and write a proposal for an empirical research project)	3
PSY 3910	Honors Research (Carry out the proposed research project)	3
PSY 4960	Honors Thesis (Analyze the data from the research project, write the results for a research publication in APA style, and present it formally to department faculty)	3
Total Hours		9

The final GPA in all Psychology courses must be 3.4 or higher.

## B.A. in Psychology

New undergraduates and some new transfers are admitted as pre-majors in Pre-Psychology. You cannot earn a degree in Pre-Psychology. To be fully admitted to the BA Psychology degree program, a student must have completed a minimum of 4 psychology classes (including Psychology 1010) with a psychology-specific GPA of 2.5. Students who do not meet this requirement will be considered "Pre-Psychology" majors and will be advised by Psychology advisers. The major in Psychology requires a minimum of 34 semester hours of Psychology courses, with at least 22 of these hours taken at the University of Toledo, plus 18 hours of related courses. Courses for the major in Psychology cannot be taken as P/NC except for PSY 4100.

### The B.A. Curriculum

The B.A. degree in psychology is designed to provide a liberal arts education and to prepare students for graduate training either in a specialized area of psychology (e.g., Experimental or Clinical graduate programs), or for graduate work in related disciplines. Students will be exposed to all of the major fields of psychology. Related courses come from a list pre-approved by faculty in the department and available

on the Psychology Department website. These courses are taught by other departments, but are relevant to various areas of psychology. Fundamentals of Biology or Biodiversity (BIOL 2150 or EEES 2150) with lab (BIOL 2160 or EEES 2160) is on the list and is the only related course required of all majors. Students who wish to do so can use these BIOL or EEES hours toward their natural science requirement. Students are free to choose any other courses from the related list, but should do so in consultation with their advisers.

The core psychology curriculum is as follows:

Code	Title	Hours
<b>Basic Psychology Courses</b>		
Select 5 of the following:		15
PSY 2200	Abnormal Psychology	
PSY 2400	Cognitive Psychology	
PSY 2510	Lifespan Developmental Psychology	
PSY 2600	Psychobiology	
PSY 2610	Learning And Motivation	
PSY 2700	Social Psychology	
<b>Methodological Courses</b>		
PSY 2100	Statistical Methods <sup>1,2</sup>	3
PSY 3110	Research Methods In Psychology	4
<b>Advanced Research Courses</b>		
Strongly advised - select one of the following: <sup>3</sup>		3
PSY 4100	Research Practicum	
PSY 4700	Research In Social Psychology	
PSY 4910	Independent Research	
PSY 4960	Honors Thesis	
<b>Elective Psychology Courses</b>		
Select 12-18 hours of electives <sup>4</sup>		12-18
<b>Related Courses</b>		
Select 18 hours of related courses <sup>5</sup>		18
Total Hours		55-61

<sup>1</sup> Must earn a C- or higher in MATH 1320 or higher before taking PSY 2100.

<sup>2</sup> Must earn a grade of C- or higher before taking PSY 3110.

<sup>3</sup> An Advanced Research Course is not required of all majors but students planning to pursue graduate work in psychology are strongly advised to take an advanced research course from the list.

<sup>4</sup> This category includes all Psychology courses at the 3000- or 4000-level that are not taken to meet requirements A and B. At least 12 hours of electives must be taken at a 3000-level or higher. No more than a total of 8 hours of PSY 3940 Externship In Psychology, PSY 4100 Research Practicum, PSY 4990 Independent Study, PSY 4910 Independent Research, and/or PSY 4960 Honors Thesis combined can count toward the Psychology major.

<sup>5</sup> The 18 hours of related courses are taken outside the Department of Psychology, and must be on the related list and/or approved by the student's Department advisor.

At least 9 hours must be courses numbered 3000 or higher. Fundamentals of Biology (BIOL 2150) or Biodiversity (EEES 2150), with lab (BIOL 2160 or EEES 2160), must be included in the Related Courses category (or taken as part of the natural science requirement).

A minor in another department or a second major may be used to complete the remaining Related Courses requirement, with the advisor's approval.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
PSY 1010	Principles Of Psychology	3
ENGL 1110	College Composition I	3
MATH 1320	College Algebra	3
Elementary Foreign Language I		4
HIST 1010	Europe To 1600	3
or HIST 1200	or Main Themes In American History	
Hours		17
<b>Second Term</b>		
PSY 2200-PSY 2700	Major Elective	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
Arts/Humanities Core (Fine Art)		3
Elective		3
Hours		16
<b>Third Term</b>		
PSY 2200-PSY 2700	Major Elective	3
PSY 2200-PSY 2700	Major Elective	3
Intermediate Foreign Language I		3
UT Core Natural Science		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Hours		15
<b>Fourth Term</b>		
PSY 2100	Statistical Methods	3
Intermediate Foreign Language II		3
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation ((Natural Sciences Core))	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation (Natural Sciences Core Lab)	1
Related or Minor course		3

Arts/Humanities Core 3

#### **SPECIAL CONSIDERATION:** <sup>1</sup>

Hours 17

#### **Fifth Term**

PSY 2200-PSY 2700 Major Elective 3

PSY 2200-PSY 2700 Major Elective 3

PSY 3110 Research Methods In Psychology (WAC) 4

Non-US Diversity 3

Related or Minor course 3

Hours 16

#### **Sixth Term**

PSY 3000-PSY 4999 Major Elective 3

PSY 3000-PSYI 4999 Major Elective 3

Related or Minor course 6

Diversity of US 3

Hours 15

#### **Seventh Term**

PSY 3000-PSY 4999 Major Elective 3

Related or Minor course 3

Elective 9

Hours 15

#### **Eighth Term**

PSY 3000-PSY 4999 Major Elective 3

Related or Minor course 3

Elective 7

Hours 13

Total Hours 124

<sup>1</sup> Students must have completed a minimum of 12 hours with a GPA of 2.5 before declaring the Psychology Major. Until this criterion is met students can declare pre-Psychology.

## Minor in Psychology

Students electing to minor in psychology at the University of Toledo must complete a minimum of 21 semester hours of course work: 12 hours of basic courses in Psychology and an additional 9 hours of advanced Psychology courses. Each program of study must be approved by a department adviser. A minimum GPA of 2.0 must be achieved in courses within the minor. Courses in the minor may NOT be taken as P/NC. The curriculum is as follows:

Code	Title	Hours
<b>Basic Psychology Courses</b>		
Select 4 of the following: <sup>1</sup>		12
PSY 2200	Abnormal Psychology	
PSY 2400	Cognitive Psychology	

PSY 2510	Lifespan Developmental Psychology	
PSY 2600	Psychobiology	
PSY 2700	Social Psychology	
<b>Advanced Courses</b>		
Select 9 hours of Psychology courses numbered 3000-4990 <sup>2</sup>		9
Total Hours		21

<sup>1</sup> With the approval of a Department advisor.

<sup>2</sup> With the approval of a Department advisor, the student must select 9 hours of Psychology courses 3000-4990. It should be noted that no more than a total of 4 hours of PSY 4100 Research Practicum, PSY 4990 Independent Study, and/or PSY 4910 Independent Research may be included.

## Department of Sociology and Anthropology

Dwight Haase, Chair

Shahna Arps, Anthropology Advisor

Monita Mungo, Sociology Undergraduate Advisor

**Sociology is the study of people in the context of the groups in which they live.**

- This social science equips a student to better understand human relationships within families, community, social class, stratification, gender, race and ethnicity.
- In our evolving world of globalization, multiculturalism, sustainability, environmental, and terrorism a degree in sociology can promote unification and understanding of human relationships in short and long term interactions.
- A degree in this discipline can prepare a student for a career in different fields including public service, medical and international relationships.

**Anthropology is the study of people around the world, over time and in different settings.** It looks at the nature of human societies from the beginning of our existence to our present day and toward our future.

This discipline focuses on the past and present record of human societies and investigates human existence from several subfields, including:

- Archaeology
- Biological (or Physical) Anthropology
- Linguistic Anthropology
- Cultural Anthropology
- Medical Anthropology
- Cultural Ecology

An Anthropology Degree prepares a student for the evolving job market of international (globalization), multiculturalism and other cultural shifts in today's world. Additionally, students are exposed to investigative learning to look for solutions to issues facing humankind including sustainability, environmental, and the changing medical needs of the present generation.

## Degrees Offered

- B.A. in Anthropology (p. 123)
- B.A. in Sociology (p. 124)
- Minor in Anthropology (p. 125)
- Minor in Sociology (p. 126)

### ANTH 1020 Introduction To Anthropology

[3 credit hours]

A survey of the varied aspects of anthropology, including cultural anthropology, prehistory, physical anthropology and linguistics. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

### ANTH 2000 Proseminar In Anthropology I

[1 credit hour]

Students are introduced to the academic and professional nature of Anthropology. Topics covered include professional socialization, honor theses, portfolio construction, preparation for graduate studies, and career development.

**Term Offered:** Spring

### ANTH 2020 Introduction To Archaeology

[3 credit hours]

An introduction to the history, methods and techniques of archaeology and how the discipline of archaeology is related to anthropology, ethnohistory, history and geology. (not for major credit)

**Term Offered:** Fall

Core Social Sciences, Trans Mod Social Science

### ANTH 2100 Human Society Through Film

[3 credit hours]

An introduction through the use of ethnographic film to various aspects of non-western culture and the development of the use of film in anthropology.

**Term Offered:** Spring, Fall

Core Social Sciences, Multicultural Non-US Diversity

### ANTH 2700 Human Evolution

[3 credit hours]

A survey of the human species in time, place and culture and the investigation of the factors underlying human biological variation.

**Term Offered:** Summer, Fall

Core Social Sciences

### ANTH 2750 World Prehistory

[3 credit hours]

A survey of the processes of cultural development from the lower Pleistocene to development of writing.

**Term Offered:** Spring, Summer

Core Social Sciences, Trans Mod Social Science

### ANTH 2800 Cultural Anthropology

[3 credit hours]

Introduction to culture patterns and processes and their relationship to human society and language.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

**ANTH 2900 African American Culture**

[3 credit hours]

A survey of the socio-historical and cultural factors of African Americans in the U.S.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

**ANTH 2980 Topics in Anthropology**

[3 credit hours]

Examination of Special Topics in Anthropology. May be repeated on different topics.

**Term Offered:** Spring, Summer, Fall

**ANTH 3000 Environmental Anthropology**

[3 credit hours]

A study of the functional interrelationships of humans and their biophysical environment in cross cultural perspective, with special emphasis on non-western cultures.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring

**ANTH 3020 Ohio Prehistory**

[3 credit hours]

A study of the prehistoric peoples in Ohio from the end of the Ice Age to the arrival of the Europeans.

**ANTH 3330 Food, Health, Society**

[3 credit hours]

This course deals with multi-cultural dietary patterns through time and space, as well as cross-cultural influences on health and disease.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ANTH 3500 Cultural Diversity in Business**

[3 credit hours]

Drawing on ethnographic and case studies to compare and contrast cultural institutions and behavioral patterns of diverse cultures, this course explores the influence of culture on business operations across cultures.

**Term Offered:** Fall

Multicultural Non-US Diversity

**ANTH 3800 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall

**ANTH 3850 Peoples Of World: An Evolutionary Approach**

[3 credit hours]

An introduction to the socioeconomic activities in societies of varying sociocultural complexity.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ANTH 3900 North American Archaeology**

[3 credit hours]

This course focuses on the history of North America as known from the archaeological record; from the peopling of North America through early historical contexts.

**Prerequisites:** ANTH 1020 with a minimum grade of D- or ANTH 2020 with a minimum grade of D-

Multicultural US Diversity

**ANTH 3920 Indians Of North America**

[3 credit hours]

A survey of North America Indians from prehistoric times to the present.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring, Fall

Multicultural US Diversity

**ANTH 3940 Peoples Of Sub-Saharan Africa**

[3 credit hours]

The cultures and societies of the Sub-Saharan peoples of Africa.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring

Multicultural Non-US Diversity

**ANTH 4000 Proseminar In Anthropology II**

[2 credit hours]

Discussion among faculty and students devoted to the study of Anthropology with a special focus on the development of a professional portfolio for graduate work or career.

**Prerequisites:** ANTH 2000 with a minimum grade of D-

**Term Offered:** Spring

**ANTH 4200 History and Theory in Anthropology-WAC**

[3 credit hours]

This course acquaints students with various schools of anthropological theory, stressing the influence of traditional approaches on contemporary thought and the impact of historical context on the development of theory.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ANTH 4300 Cultural Resource Management - WAC**

[3 credit hours]

Course explores the history, theory, and contemporary issues behind the historic preservation movement and emergence of Cultural Resource Management in the United States; topics engaged include legislation, federal and state programs, the national register, regional planning, and research orientations.

**Prerequisites:** ANTH 2020 with a minimum grade of D- and ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ANTH 4450 Exploring the City**

[3 credit hours]

This course takes an interdisciplinary approach to life in cities around the world, with emphasis on the ethnographic exploration of how power, cultural difference, and social inequality in cities are produced and experienced.

**Term Offered:** Fall

**ANTH 4510 Field Methods in Archaeology**

[6 credit hours]

Methods of excavation and recovery of archaeological data. Field school conducted during excavation of a prehistoric site in the Toledo area.

**ANTH 4520 Laboratory Methods In Archaeology**

[3 credit hours]

Instruction in the methods and techniques employed by the archaeologist to analyze cultural material recovered in the field.

**Term Offered:** Fall

**ANTH 4530 Qualitative Approaches in Social Science Research**

[3 credit hours]

This course examines qualitative methods used in social science research. Focusing on ethnographic and qualitative methods, the course provides students the skills necessary to design and conduct qualitative research studies.

**ANTH 4560 Ethnographic Fieldwork**

[6 credit hours]

Consists of field work involving the student in meaningful research problems at the community level. Introduces the student to the methods and problems of participant research.

**Term Offered:** Summer, Fall

**ANTH 4760 Medical Anthropology**

[3 credit hours]

An examination of the biocultural nature of health and illness, with special emphasis on changing patterns of disease in non-western societies.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ANTH 4790 Human Osteology**

[3 credit hours]

This course focuses on human skeletal anatomy and bone morphology using an evolutionary and biocultural perspective. Students are introduced to skeletal elements, their major landmarks, and methods for analyzing materials and assessing variation.

**Prerequisites:** ANTH 2700 with a minimum grade of D-

**Term Offered:** Spring

**ANTH 4820 Anthropology Of Religion**

[3 credit hours]

A cross-cultural approach to the description and analyses of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Fall

Multicultural Non-US Diversity

**ANTH 4860 The Irish-American Experience**

[3 credit hours]

A survey of the sociohistorical and cultural factors related to the immigration and adaptation of the Irish in America.

**Term Offered:** Spring

Multicultural US Diversity

**ANTH 4910 Independent Research In Anthropology**

[1-3 credit hours]

Supervised independent research in anthropology.

**Term Offered:** Spring, Summer, Fall

**ANTH 4920 Directed Readings In Anthropology**

[1-3 credit hours]

Designed for those wishing to continue course work in greater depth or seeking contact with unlisted subject areas. Written proposal and consent required.

**Term Offered:** Spring, Summer, Fall

**ANTH 4940 Internship in Anthropology**

[1-6 credit hours]

This course provides students supervised field placement related to the field of anthropology. Qualified students will work in approved organizations, such as museums, parks, research libraries, government agencies, community organizations, businesses, schools, etc.

**Term Offered:** Spring, Summer, Fall

**ANTH 4950 Senior Research Project**

[3-6 credit hours]

Supervised opportunity for senior majors to apply the anthropological approach to a theoretical or applied cultural historical/biocultural problem through individual research, an internship, professional participation or a public education experience.

**Term Offered:** Summer

**ANTH 4960 Honors Thesis**

[3-6 credit hours]

The student completes a thesis under the direction and guidance of their faculty adviser.

**Term Offered:** Spring, Summer, Fall

**ANTH 4980 Problems In Anthropology**

[3 credit hours]

Courses on varied anthropological specialties. May be repeated in different specialty areas such as religion, ethnohistory, ethnic conflict and area courses.

**Term Offered:** Spring, Summer, Fall

**SOC 1010 Introduction To Sociology**

[3 credit hours]

(not for major credit) Sociological topics regarding social behavior, institutional dynamics and social change are examined, and the principles and basic concepts used by sociologists are taught.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

**SOC 1020 Social Problems**

[3 credit hours]

(Not for major credit) Introduces students to the sociological perspective through the analysis of various social problems including inequality, population, environment, workplace and deviant behavior.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

**SOC 2000 Proseminar In Sociology I**

[1 credit hour]

Students are introduced to the academic and professional nature of Sociology. Topics covered include professional socialization, honor theses, portfolio construction, preparation for graduate studies, and career development.

**Term Offered:** Spring



**SOC 2150 The Family and Society**

[3 credit hours]

Examines evolving family structures, focusing on the impact that cultural, political, and social factors have on private personal relationships and the public social institution of the family.

**Term Offered:** Spring, Fall**SOC 2410 Communities - Writing Across the Curriculum**

[3 credit hours]

Examination of various forms and definitions of community with special focus on what the conceptualization of community means for how community issues are identified and addressed.

**Term Offered:** Spring, Fall

Core Social Sciences

**SOC 2500 Women's Roles: A Global Perspective**

[3 credit hours]

The course focuses on the current and evolving social, economic and political status of women in the United States and selected non-Western societies. For both men and women students.

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

**SOC 2640 Race, Class, And Gender**

[3 credit hours]

Introduction to the study of race, class and gender as factors in American stratification.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

**SOC 2750 Sociology Of Sport**

[3 credit hours]

This course examines sport as a microcosm of our society, exploring many sociological issues (socialization, social institutions, and inequality) within the framework of sport that exist in society as whole.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences

**SOC 2900 African American Culture**

[3 credit hours]

A survey of the sociohistorical and cultural factors related to the African American experience in the United States.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

**SOC 2980 Special Topics**

[3 credit hours]

Examination of a special topical area in sociology. May be repeated on different topics.

**SOC 3270 Social Research Methods**

[3 credit hours]

Introduction to procedures used in the various phases of sociological research.

**Term Offered:** Spring, Fall**SOC 3290 Social Statistics**

[3 credit hours]

Study of major statistical procedures and techniques in sociology.

**Prerequisites:** MATH 1180 with a minimum grade of D- or MATH 1200 with a minimum grade of D- or MATH 1210 with a minimum grade of D- or MATH 1320 with a minimum grade of D- or MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D- or MATH 1730 with a minimum grade of D- or MATH 1750 with a minimum grade of D- or MATH 1830 with a minimum grade of D- or MATH 1850 with a minimum grade of D- or MATH 2450 with a minimum grade of D- or MATH 2600 with a minimum grade of D- or MATH 2640 with a minimum grade of D-

**Term Offered:** Spring, Fall**SOC 3640 Social Inequality**

[3 credit hours]

This course examines the bases, varieties and consequences of systems of inequality, including the development of and changes in inequality patterns in the US and other societies.

**Term Offered:** Spring, Summer, Fall**SOC 3800 Social Psychology**

[3 credit hours]

An introduction to theory and research concerning social influences on the experience and behavior of individuals. Includes interaction patterns, interpersonal and intergroup relations.

**Term Offered:** Spring, Summer, Fall**SOC 3890 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall**SOC 4000 Proseminar In Sociology II**

[2 credit hours]

Discussion among faculty and students devoted to the study of Sociology with a special focus on the development of a professional portfolio for graduate work or career.

**Prerequisites:** SOC 2000 with a minimum grade of D-**Term Offered:** Spring**SOC 4040 Classical Theory**

[3 credit hours]

Foundations of social theory including works by Marx, Weber, Durkheim and Simmel as well as other classical theorists.

**Term Offered:** Spring, Fall**SOC 4100 Community Organizing and Development**

[3 credit hours]

This course focuses on attempt of communities to regain power and wealth lost through urban disinvestment occurring since World War II. The course will involve numerous practical workshops to learn how to do community organizing and community development and will include information on Toledo case studies.

**Term Offered:** Spring, Fall**SOC 4110 Political Sociology**

[3 credit hours]

Examination of political institutions, organizations and behavior with special attention to participation, power, ideology, decision making and conflict.

**SOC 4160 Health And Gender**

[3 credit hours]

An examination of sex and gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals.

**Term Offered:** Summer, Fall

**SOC 4170 Law And Society**

[3 credit hours]

Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

**SOC 4180 Medical Sociology**

[3 credit hours]

An analysis of the sociocultural factors in health and illness, and in medical and paramedical services, and in the field of health practice as a social institution.

**Term Offered:** Spring, Fall

**SOC 4190 Social Gerontology**

[3 credit hours]

A study of the changing proportions of older people in the population, their changing roles and statuses, and the problems and processes of adjustment.

**SOC 4340 Population And Society**

[3 credit hours]

Examination of the interaction among variables of population (fertility, mortality and migration) and other aspects of societal organization.

**Term Offered:** Fall

**SOC 4440 Methods Of Population Analysis**

[3 credit hours]

Methods of population analysis, including examination and evaluation of data sources.

**SOC 4450 Exploring the City**

[3 credit hours]

Examination of how cities are organized with special attention to economic, political, racial/ethnic, and sex/gender dynamics.

**Term Offered:** Fall

**SOC 4530 Qualitative Approaches in Social Science Research**

[3 credit hours]

This course examines qualitative methods used in social science research. Focusing on ethnographic and qualitative methods, the course provides students the skills necessary to design and conduct qualitative research studies.

**SOC 4560 Fieldwork in the Community**

[6 credit hours]

This course involves the student in meaningful social research at the community level. The student is introduced to methods in fieldwork in the social sciences.

**Term Offered:** Spring, Summer, Fall

**SOC 4580 Science, Technology, And Social Change**

[3 credit hours]

The impact of rapidly changing science and technology on North American society: social change in a technological age; the emergence of post industrial society.

**SOC 4610 Sociology Of Organizations**

[3 credit hours]

Study of the structures, functions, and processes of various types of organizations. Topics include bureaucracy, organizational leadership and management, and organizational culture.

**Term Offered:** Spring

**SOC 4650 SOCIOLOGY OF LATIN AMERICA AND CARIBBEAN**

[3 credit hours]

An overview of sociological literature on Latin American and the Caribbean. Topics include economic development, political change, gender and ethnicity, disability, culture and international migration.

**Prerequisites:** SOC 1010 with a minimum grade of D-

**SOC 4710 Criminology**

[3 credit hours]

Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

**Term Offered:** Summer

**SOC 4720 Deviant Behavior**

[3 credit hours]

Study and analysis of the nature, meaning and process of deviant behavior in terms of social norms, control and societal reaction.

**Term Offered:** Summer

**SOC 4740 Issues In Crime**

[3 credit hours]

Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

**SOC 4750 Legal Issues**

[3 credit hours]

Topics may include abortion, three strike sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.

**SOC 4760 Juvenile Delinquency**

[3 credit hours]

Delinquency and delinquent behavior, including definitions, extent, process, types and causes; methods of prevention, protective control and treatment; institutional and non-institutional facilities and services.

**SOC 4800 Social Change in Developing Nations**

[3 credit hours]

The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

**Term Offered:** Fall

Multicultural Non-US Diversity

**SOC 4810 Gender In Cross-Cultural Perspective**

[3 credit hours]

Analysis of gender stratification and its impact on culture in various nations and across ethnic groups in the United States.

Multicultural Non-US Diversity

**SOC 4830 Social Movements**

[3 credit hours]

This course analyzes how and why social protest movements form, and how and why they succeed or fail. Attention will be given to post-World War II social movements, including current examples.

**Term Offered:** Spring, Fall

**SOC 4840 Globalization**

[3 credit hours]

This course takes an interdisciplinary approach to studying globalization – increased integration and interdependence between nations. We will start by looking at the historical context of globalization, showing this process is not necessarily something new. From there we will focus on four dimensions of globalization: economic, political, demographic, and cultural. We also will stress the interconnectedness of these dimensions. We conclude by looking at reactions and resistance to globalization, including terrorism and nationalism.

**Term Offered:** Spring

**SOC 4910 Directed Research In Sociology**

[1-3 credit hours]

Student-selected research topic under the supervision of a sociology faculty member. Permission to enroll is contingent on the instructor's acceptance of the student's research proposal.

**Prerequisites:** SOC 3270 with a minimum grade of D-

**SOC 4920 Directed Readings In Sociology**

[1-3 credit hours]

Written proposal required. May be repeated for additional credit. For majors wishing to continue course work in greater depth or seeking contact with unlisted subject areas.

**Term Offered:** Spring, Fall

**SOC 4940 Internship in Sociology**

[3 credit hours]

**SOC 4960 Honors Thesis**

[3-6 credit hours]

**SOC 4980 Special Topics In Sociology**

[3 credit hours]

Sociological examination of a developing and/or important social issue or sociological topic. May be repeated for different specialized topics.

**Term Offered:** Spring, Summer, Fall

**SOC 4990 Independent Study-Sociology**

[1-3 credit hours]

## Honors in Anthropology

Qualified juniors and seniors may apply to work for honors in anthropology. The following are requirements for entrance into the Honors Program in anthropology.

1. Admission
  - a. 3.3 minimum GPA in anthropology courses
  - b. 3.0 minimum cumulative GPA
  - c. 12 hours completed work in anthropology
  - d. Qualification as an anthropology major
2. Requirements
  - a. A student must complete 9 hours of independent work in anthropology. During the final quarter before graduation, the student must pass a comprehensive examination or submit a

completed honors thesis. Students should discuss their special interests with faculty members or with the honors adviser, who will help identify an appropriate faculty member to guide the honors work.

## Honors in Sociology

Qualified juniors and seniors may apply to work for honors in sociology. The following are requirements for entrance into the Honors Program in sociology:

1. Admission
  - a. 3.3 minimum GPA in sociology courses
  - b. Minimum cumulative GPA of 3.0
  - c. Completion of 12 hours of sociology courses; and
  - d. Qualification as a sociology major
2. Requirements
  - a. A student must complete nine hours of independent work in sociology. During the final semester before graduation, the student must complete an honors paper. The honors topic and paper are to be developed in close conjunction with a faculty adviser. Students should discuss their special interests with faculty members or with the honors adviser, who will help identify an appropriate faculty member to guide the honors work.

## B.A. in Anthropology

A major in anthropology consists of a minimum of 33 hours of coursework: 21 hours of core courses in anthropology and an additional 12 hours of elective courses at the 3000/4000 level in anthropology. Also required are 18 hours of related course work in other fields.

The undergraduate major of 33 hours must include the following:

Code	Title	Hours
<b>Core Courses</b>		
ANTH 2700	Human Evolution	3
ANTH 2750	World Prehistory	3
ANTH 2800	Cultural Anthropology	3
ANTH 4530	Qualitative Approaches in Social Science Research	3
Select one of the following:		3
ANTH 3850	Peoples Of World: An Evolutionary Approach	
ANTH 3920	Indians Of North America	
ANTH 3940	Peoples Of Subsaharan Africa	
ANTH 4200	History and Theory in Anthropology-WAC	3
ANTH 2000	Proseminar In Anthropology I	1
ANTH 4000	Proseminar In Anthropology II	2
1 WAC in discipline		
<b>Electives</b>		
Select 12 additional elective hours of anthropology courses		12
Courses in the subfields of anthropology not listed in the catalog can sometimes be arranged through independent study with department faculty.		
ANTH 4910	Independent Research In Anthropology	
ANTH 4920	Directed Readings In Anthropology	

Other options include:

ANTH 3000	Environmental Anthropology	
ANTH 3900	North American Archaeology	
ANTH 4300	Cultural Resource Management - WAC	
ANTH 4760	Medical Anthropology	
ANTH 4820	Anthropology Of Religion	
Total Hours		33

Students should discuss their personal and professional interests with the undergraduate advisor before selecting elective courses to complete the major.

## Related Hours

The requirement of 18 related hours is to be met with the following:

Code	Title	Hours
<b>Related Hours</b>		
ARTH 2200	Ethnographic Art	3
LING 3150	Linguistic Principles	3
<b>Electives</b>		
Select 12 hours of electives		12
Total Hours		18

In special circumstances, the undergraduate advisor may approve alternatives to those courses listed above. Students may not take P/NC in major or related courses.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
ANTH 2700	Human Evolution	3
Elementary Foreign Language I		4
Arts/Humanities Core (Fine Art)		3
Hours		14
<b>Second Term</b>		
ANTH 2750	World Prehistory	3
ANTH 2000	Proseminar In Anthropology I	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180 or MATH 1200	Reasoning With Mathematics or Mathematical Modeling and Problem Solving	3
Elementary Foreign Language II		4
Natural Sciences Core		3
Hours		17
<b>Third Term</b>		
ANTH 2800	Cultural Anthropology (Non-US Diversity)	3
Intermediate Foreign Language I or approved culture course		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3

Arts/Humanities Core (HIST 1010 - 1200)		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16

<b>Fourth Term</b>		
ANTH 3000- ANTH 4000	Major Elective	3
ARTH 2200	Ethnographic Art	3
Related or Minor course		3
Intermediate Foreign Language II or approved culture course		3
Elective		3
Hours		15

<b>Fifth Term</b>		
ANTH 3850	Peoples Of World: An Evolutionary Approach	3
ENGL 3150	Linguistic Principles	3
ANTH 3000- ANTH 4000	Major Elective	3
Related or Minor course		3
Social Sciences Core		3
Hours		15

<b>Sixth Term</b>		
ANTH 3000- ANTH 4000	Major Elective	3
ANTH 4000	Proseminar In Anthropology II	2
ANTH 4530	Qualitative Approaches in Social Science Research	3
Related or Minor course (WAC)		3
Diversity of U.S.		3
Elective		2
Hours		16

<b>Seventh Term</b>		
ANTH 4200	History and Theory in Anthropology-WAC	3
ANTH 3000- ANTH 4000	Major Elective	3
ANTH 4XXX	Senior Project/Major Elective	3
Elective 3000-4000 level		6
Hours		15

<b>Eighth Term</b>		
Related or Minor course 3000-4000 level		3
ANTH 4XXX	Senior Project/Major Elective	3
Elective 3000-4000 level		6
Hours		12
Total Hours		120

## B.A. in Sociology

The undergraduate major of 33 hours must include the following:

Code	Title	Hours
SOC 2000	Proseminar In Sociology I	1
SOC 3270	Social Research Methods	3
SOC 3290	Social Statistics	3
SOC 4000	Proseminar In Sociology II	2
SOC 4040	Classical Theory	3
<b>Elective Courses</b>		
Select 21 hours <sup>1</sup>		21
<b>Related Hours</b>		
Select 18 related hours <sup>2</sup>		
Total Hours		33

<sup>1</sup> 21 additional elective hours of sociology courses, at least 15 of which must be at the 3000 or 4000 level. Students should discuss their personal and professional interests with the undergraduate adviser before selecting elective courses to complete the major.

<sup>2</sup> The requirement of 18 related hours is met with electives taken from at least four of the following disciplines: Africana Studies, Anthropology, Communications, Economics, Geography, History, Political Science, Psychology and Women's and Gender Studies. Fifteen of these hours must be taken at the 3000 or 4000 level. Students may not take P/NC in major or related courses.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
SOC 1010	Introduction To Sociology (Social Sciences Core)	3
ENGL 1110	College Composition I	3
	Elementary Foreign Language I	4
MATH 1180	Reasoning With Mathematics	3
HIST 1010 or HIST 1200	Europe To 1600 (Arts/Humanities Core) or Main Themes In American History	3
	Hours	17

#### Second Term

SOC 2000	Proseminar In Sociology I	1
SOC Major Elective		3
	Elementary Foreign Language II	4
	Natural Sciences Core	3
	Natural Sciences Core (Lab)	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
	Hours	15

#### Third Term

SOC Major Elective		3
	Intermediate Foreign Language I or approved culture course	3
ENGL 2710 or ENGL 2800	Reading Fiction or Writing About Literature	3
	Arts/Humanities Core (Fine Art)	3

Natural Sciences Core	3
Hours	15

#### Fourth Term

SOC Major Elective	3
SOC Major Elective	3
Intermediate Foreign Language II or approved culture course	3
Social Sciences Core	3
Non-US Diversity	3
Hours	15

#### Fifth Term

SOC 3290	Social Statistics	3
SOC 4040	Classical Theory	3
	Related or Minor course (WAC)	3
	Elective 3000-4000 level	5
	Hours	14

#### Sixth Term

SOC 3270	Social Research Methods	3
SOC 3000-SOC 4000	Major Elective (WAC)	3
	Related or Minor course 3000-4000 level	3
	Elective 3000-4000 level	3
	Diversity of US	3
	Hours	15

#### Seventh Term

	SOC Major Elective 3000-4000 level	3
	SOC Major Elective 3000-4000 level	3
	Related or Minor course 3000-4000 level	3
	Elective 3000-4000 level	6
	Hours	15

#### Eighth Term

SOC 4000	Proseminar In Sociology II	2
	Related or Minor course 3000-4000 level	6
	Elective 3000-4000 level	6
	Hours	14
	Total Hours	120

## Minor in Anthropology

To complete a minor in Anthropology, students must complete a minimum of 24 hours of course work-15 hours of core courses in Anthropology and an additional nine hours of advanced course work at the 3000 to 4000 levels in Anthropology.

Code	Title	Hours
<b>Required Courses</b>		
ANTH 2100	Human Society Through Film	3
ANTH 2700	Human Evolution	3
ANTH 2800	Cultural Anthropology	3
ANTH 3850 or ANTH 3920	Peoples Of World: An Evolutionary Approach Indians Of North America	3
ANTH 4530	Qualitative Approaches in Social Science Research	3



**Advanced Course**

Select nine hours of course work at the 3000 to 4000 levels in anthropology with the approval of the departmental advisor	9
Total Hours	24

## Minor in Sociology

Requirements for the undergraduate minor must include 21 hours configured as follows:

Code	Title	Hours
SOC 3270	Social Research Methods	3
SOC 3290	Social Statistics	3
SOC 4040	Classical Theory	3
<b>Elective Courses</b>		
Select 12 additional elective hours of sociology courses at the 3000 or 4000 level		12
Total Hours		21

## Department of Theatre and Film

### ACCREDITING BODY: National Association of Schools of Theatre (NAST)

Dr. Edmund Ligan, Chair, Theatre Advisor (Spring)  
 Holly Monsos, Interim Chair (Fall)  
 Dr. Matt Foss, Theatre Advisor  
 Daniel Thobias, Theatre Advisor  
 Steven Sakowski, Theatre Advisor  
 Holly Hey, Film Advisor  
 Tammy Kinsey, Film Advisor  
 Dr. Matt Yockey, Film Advisor

The Department of Theatre and Film at the University of Toledo, an undergraduate liberal arts department, actively engages students in creative practice, critical thinking and cross cultural/global exchange through the study and practice of live productions and cinema.

### Degrees Offered

- B.A. in Film/Video (p. 132)
- B.A. in Theatre (p. 134)
- Minor in Cinema Studies (p. 135)
- Minor in Film/Video (p. 136)
- Minor in Stage and Screen Performance (p. 136)
- Minor in Theatre Arts (p. 136)

The Bachelor of Arts programs in theatre and film/video are designed to prepare the student for a wide range of career options and/or postgraduate study through a strong liberal arts curriculum. Students may choose a bachelor of arts major in either theatre or film.

The BA in Theatre includes a total of 45 hours. Theatre majors take 33 required hours as well as an additional 12 hours in the concentration of their choice, either Stage and Screen Acting or Theatre Design and Technology. The BA in Film/Video includes 39 required hours and an additional 9 hours of required major electives.

### FILM 1310 Introduction To Film

[3 credit hours]

Introduction to the history and interpretation of cinema as art form, with emphasis on discovering how meaning is encoded in film at the levels of shot, sequence and narrative construction. (Not recommended or required for majors.)

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

### FILM 2230 Creative Approaches to Cinema

[3 credit hours]

An introductory course focused on visual storytelling through the examination and construction of the still image. Emphasis on interpreting photography, paintings and stories designed within the construct of the single image. This course uses lectures, readings and in-class exercises to produce creative narratives through photo-romans. Students must have taken or be co-enrolled in Critical Approaches to Cinema, Film 2340. 3 credit hours.

**Corequisites:** FILM 2340

**Term Offered:** Fall

### FILM 2310 Film I

[3 credit hours]

An intensive introduction to the theory and practice of creative filmmaking utilizing the professional 16mm format. Individual and group production exercises. Students must purchase supplies. Majors and minors only. Not to be taken simultaneously with FILM 2320. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring, Fall

### FILM 2320 Digital Cinema Production I - WAC

[3 credit hours]

An intensive seminar course where digital media is explored as a means for creative expression. Students purchase supplies. For majors and minors only, or by permission of instructor. Prerequisites: Comp I and Grade of C or better in FILM 2340. May not take simultaneously with FILM 2310. Writing Intensive (WAC) course.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring, Fall

### FILM 2330 Critical Approaches to Cinema

[3 credit hours]

A critical approach to the development of cinema as an industrial, artistic and ideological practice. Emphasis on theories of film construction and interpretation and the development of analytical skills for cinema studies. Screenings included in class.

**Term Offered:** Spring, Fall

### FILM 2350 Cinema History

[3 credit hours]

A study of the major movements and authors of Cinema History.

Screenings included in class.

**Term Offered:** Spring, Summer

### FILM 2980 Cinema Studies Topic I

[3 credit hours]

Topics of Cinema Studies, concentrating on a specific style, genre, or national cinema, such as, Italian Cinema, Non-Western Cinema, etc.

Topics vary. May be repeated for 9 hours.

**FILM 2990 Special Projects**

[1-3 credit hours]

Individual study provides the student an opportunity to work independently on a problem of special interest in Film/Video under the direction of the faculty. For Freshman and Sophomore students.

**FILM 3200 Directing Screen Acting**

[3 credit hours]

This studio course trains students to actively view a scene, assess the effectiveness of script, acting and directing, and discuss it critically. It identifies components of story, script and character - and how to build this with the cast. Focus is placed on characteristics required to play a role, successfully cast actors through auditions, and run an effective rehearsal. Lessons focus on production etiquette, communication, and techniques necessary to film a story.

**Prerequisites:** FILM 2340 with a minimum grade of D-

**Term Offered:** Fall

**FILM 3210 Film Theory**

[3 credit hours]

Course in fundamental concepts in film theory. Examines the history of film theory and its ongoing development in the face of changes in production and consumption practices. Theories covered include classical narrative, psychoanalysis, semiotics, feminism, genre, reception studies, and globalization. This course is Writing Intensive and incorporates frequent writing assignments in ways that help students learn both the subject matter of the course and discipline-specific ways of thinking and writing.

**Prerequisites:** FILM 2340 with a minimum grade of C

**FILM 3310 Film II**

[3 credit hours]

An intermediate production/seminar course for 16mm filmmaking. Emphasis on sync-sound and narrative film, advanced lighting and exposure techniques, and camera movement. Individual and group projects. Students are required to purchase supplies. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of C and FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3320 Video II**

[3 credit hours]

A production/seminar course for digital cinema production. Conceptual frameworks rotate; emphasis on personal and political storytelling and exploring methods of the auteur. Individual and group projects. Students are required to purchase supplies. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2320 with a minimum grade of C and FILM 2310 with a minimum grade of C

**Term Offered:** Spring

**FILM 3330 Critical Approaches to Cinema II**

[3 credit hours]

Intermediate critical analysis of film, concentrating on a specific style, genre, national cinema of the West, or filmmaker. Emphasis on theories of film construction and interpretation. Screenings included in class. Topics vary, may be repeated to 9 hours.

**Prerequisites:** FILM 2340 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FILM 3340 Media Storycraft**

[3 credit hours]

This course focuses on narrative storytelling thru film and addresses these questions through the practice of screenwriting. Emphasis is placed on telling a story in terms of action and characters. Students will learn the fundamentals of screenwriting by developing their own original screenplay that follows a traditional dramatic structure. This process will include in-class workshops, analysis of films, and peer-reviews.

**Term Offered:** Spring

**FILM 3350 Screenwriting - WAC**

[3 credit hours]

This course involves practical analysis of screenplays, emphasizing story structure and characterization. Students plan, write and refine story lines before writing actual scripts.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FILM 3360 Production Topic**

[3 credit hours]

Topics in production including Animation, Sound, Lighting, Editing, etc. Individual and group projects. Students must purchase supplies. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of C or FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3370 Documentary Film**

[3 credit hours]

A study of the major movements and authors of Documentary Film. Screenings included in class.

**Prerequisites:** (ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-) and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**FILM 3380 Experimental Film**

[3 credit hours]

A study of the major movements and authors of Experimental Film. Screenings included in class.

**Prerequisites:** (ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-) and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3390 History of Video Art**

[3 credit hours]

A study of the major movements of the History of Video Art and Installation. Screenings included in class.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3410 European Cinema**

[3 credit hours]

A study of the major movements and authors of European cinema. Screenings included in class. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3420 Third Cinema**

[3 credit hours]

A study of the major movements and authors of Third World Cinema. Screenings included in class. Majors and minors only. Interested non-majors should seek instructor permission to enroll. FILM 2350 is recommended before taking this class for non-majors.

**Prerequisites:** FILM 2340 with a minimum grade of C and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**FILM 3430 Global Cinema**

[3 credit hours]

A study of the major movements and authors of non-US cinema. Screenings included in class. Topics vary, may be repeated to 9 hours.

**Prerequisites:** FILM 2340 with a minimum grade of D- and ENGL 1130 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FILM 3510 Cinematography and Color Grading**

[3 credit hours]

A production/seminar course concentrating on how the language of the image is influenced by camera format fundamentals and color. In-class demonstrations and exercises, as well as outside of class workshops and individual production(s). Majors and minors only.

**Prerequisites:** FILM 2310 with a minimum grade of C and FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3530 Animation and Optical Printing**

[3 credit hours]

Intensive production/seminar course in the creation of animation and special effects for film and digital work. Hand-drawn, cut-out, stop-motion, pixilation and various optical effects are explored through in-class exercises and individual productions. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FILM 3550 Producing and Production Management**

[3 credit hours]

Inquiry into the financial, logistical, and organizational aspects of film and video production, focusing on the roles of the line producer, production manager, assistant director and their teams. No prerequisite.

**Term Offered:** Spring

**FILM 3560 Methods for the Professional Editor**

[3 credit hours]

A production/seminar course that prepares students for professional practice in digital post-production methods and concepts. In-class exercises and individual production work done outside of class are required for the course. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3730 Directing for Camera**

[3 credit hours]

A production/seminar course focusing on directing dramatic scenes for camera with emphasis on effective director/actor communication and the creation of dramatically meaningful camera and actor blocking. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of C and FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3820 Documentary Field Production**

[3 credit hours]

Advanced production class focusing on the unique challenges of field production. Various types of documentary work are explored through field assignments relating to social and scientific subjects. This course includes local and regional production work as well as study abroad options.

**Prerequisites:** FILM 2310 with a minimum grade of D- and FILM 2320 with a minimum grade of D-

**Term Offered:** Spring

**FILM 3980 Cinema Studies Topic II**

[3 credit hours]

A non-historical approach to specific topics of cinema studies, concentrating on problems of film theory and individual research projects. Topics vary. (May be repeated to 12 hours.) Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 4210 Film Censorship**

[3 credit hours]

Advanced cinema studies course focusing on the social, cultural, and political history of film censorship from early cinema through today. Covering early censorship questions, the Production Code Era, the Hollywood Ten, the shift toward the movie ratings system and the MPAA, and present-day concerns about film content.

**Prerequisites:** FILM 2340 with a minimum grade of D-

**Term Offered:** Spring

**FILM 4220 Media Studies**

[3 credit hours]

Covering issues concerned with film and media history, theory, and criticism and the interrelationship of film to television, radio, print, and/or the Internet. Particular focus of the course can change. Repeatable for credit.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 4230 Filmmakers**

[3 credit hours]

Theoretical and analytical examination of film authorship and its various forms, including directors, producers, and scriptwriters. Consideration is given to the cultural function of the designation of authorship and how this affects reception of films. Particular focus of the course can change. Repeatable for credit. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring

**FILM 4240 Genre Studies**

[3 credit hours]

Critical approaches to serial productions commonly called "genre" films. Consideration of how patterns of recognition form and are sustained in the modes of horror, melodrama, westerns, science fiction, musicals, and others. An emphasis on Hollywood genre production is facilitated by an analysis of cross-cultural influences and divergences. Particular focus of the course can change. Repeatable for credit.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 4310 Advanced Production**

[3 credit hours]

A production/seminar course focused on advanced production techniques. Emphasis on double system/sync-sound recording skills, advanced lighting instrument use, and the creative relationships between camera and editing language. Individual and group project work is required as is students purchasing supplies for their final projects. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 3510 with a minimum grade of D- and FILM 3560 with a minimum grade of D-

**Term Offered:** Spring

**FILM 4320 Film/Video Workshop**

[3 credit hours]

A production/seminar course for advanced independent production projects, including screenwriting. Regular critiques of work in progress. Requires proposal for admission. Larger projects may be completed over successive semesters. May be repeated up to 6 hours. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 3310 with a minimum grade of D- or FILM 3320 with a minimum grade of D- or FILM 3350 with a minimum grade of D- or FILM 3360 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FILM 4330 Critical Approaches to Cinema III**

[3 credit hours]

Advanced critical analysis of film, concentrating on a specific style, genre, national cinema of the West, or filmmaker. Emphasis on theories of film construction and interpretation. Screenings included in class. Topics vary, may be repeated to 9 hours.

**Prerequisites:** FILM 3340 with a minimum grade of D-

**Term Offered:** Fall

**FILM 4340 Topics In Feminist Cinema Studies**

[3 credit hours]

Crosslistings of film classes with the Department of Women's and Gender Studies. Specific topics vary. Check Course Schedule for specific subject and prerequisites.

**Term Offered:** Fall

**FILM 4350 Screenwriting II**

[3 credit hours]

For students familiar with the fundamental elements of screenplays, this course devotes attention to writing a complete script. Students are expected to come to the class with a planned story line.

**Prerequisites:** FILM 3350 with a minimum grade of C or ENGL 3060 with a minimum grade of C

**Term Offered:** Spring

**FILM 4360 Le Cinema Francais**

[3 credit hours]

A study of the development of French film and its place in world cinema.

**Term Offered:** Spring, Fall

**FILM 4370 Cinema Studies Seminar**

[3 credit hours]

A research oriented seminar concerning a specific topic of cinema studies, emphasizing original research culminating in individual research and/or writing project.

**Prerequisites:** (ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-) and FILM 2350 with a minimum grade of C

**Term Offered:** Fall

**FILM 4940 Internship**

[3 credit hours]

Internship with an approved program, company, or agency in Film. Video or television. (repeatable for 6 credit hours)

**Term Offered:** Spring, Summer, Fall

**FILM 4950 Honors Thesis**

[3 credit hours]

Research or a creative project on a topic in Film or Video. Required of all BA candidates seeking department honors. (Repeatable for 6 credit hours.)

**Term Offered:** Spring, Summer, Fall

**FILM 4990 Special Projects**

[1-3 credit hours]

Individual study provides the student an opportunity to work independently on a problem of special interest in Film/Video under the direction of the faculty. For Junior and senior students.

**Term Offered:** Spring, Summer, Fall

**THR 1010 Acting for Non Majors**

[3 credit hours]

Learn the fundamentals of acting through exercises, devised playmaking and scene study. Through active class participation, the student discovers an understanding of the basic artistic process of the performer and how that process may lead to self-realization and heightened awareness.

**Term Offered:** Spring, Fall

**THR 1030 Stagecraft and Theatre Technology**

[3 credit hours]

[3 hours] Introduction to theatre technology using the tools and practices utilized in set construction, properties scene painting and scene design. Lectures, readings and projects with practical laboratory experience.

**Term Offered:** Spring, Fall

**THR 1040 Stage Lighting and Sound Technology**

[3 credit hours]

Introduction to theory and practice in stage lighting and sound. Students will use lighting and sound tools and equipment in production crews on department productions.

**Term Offered:** Spring, Fall

**THR 1050 Costume Technology**

[3 credit hours]

Introduction to the theory and practice of stage costuming. Lectures, readings and projects offer practical laboratory experiences. Students will use tools and equipment of the costume shop on production crews.

**Term Offered:** Spring, Fall

**THR 1100 Introduction To Theatre**

[3 credit hours]

Introductory survey of the development of theatre and drama from the ancient world to the present day; discussion of representative plays; slides and films complement lectures. (Not recommended or required for majors.)

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**THR 2000 Theatre Practicum I**

[0 credit hours]

Students will be assigned a crew position for one of the department productions.

**Term Offered:** Spring, Fall

**THR 2020 Theatre Performance Practicum**

[1-3 credit hours]

Lab course introducing students to the departmental production program through participation as a performer.

**Term Offered:** Spring, Summer, Fall

**THR 2050 Theatre Practicum II**

[0 credit hours]

Lab course where students apply skills from foundational design and technology courses in support of the departmental production program. Practicum II students serve in departmental workshops throughout the semester. The course is credit/no credit.

**Prerequisites:** THR 1030 with a minimum grade of D- and THR 1040 with a minimum grade of D- and THR 1050 with a minimum grade of D-

**THR 2100 Departmental Ensemble**

[0 credit hours]

A collaborative colloquium course in support of departmental production and academic programming. This course is credit/no credit.

**THR 2200 Script Analysis**

[3 credit hours]

A survey of various playwriting and performance text composition structures from ancient to contemporary periods. Students will focus on the most prevalent and ground-breaking dramaturgical methods in the historical practice of dramatic composition.

**Term Offered:** Spring, Fall

**THR 2400 Fundamentals of Design**

[3 credit hours]

Fundamentals of Design is an introduction to visual communications, styles and techniques. It also includes a thorough exploration of basic aesthetic theory as it applies to all elements of visual design. Fundamentals of Design will develop skills of script analysis, as well as explore designing for the stage and screen as a means of communication, artistic expression and the organization of design information.

**Prerequisites:** THR 2200 with a minimum grade of D-

**Term Offered:** Fall

**THR 2420 Stage Makeup**

[3 credit hours]

[2 hours] Introduction to principles and techniques of makeup for the stage. Students explore practical executions of stage makeup problems. Topics may include special effects, old age techniques, creature design, period specific makeup and makeup design. Students are required to purchase supplies.

**Term Offered:** Spring, Fall

**THR 2600 Acting I**

[3 credit hours]

An introduction to the art and craft of acting. Through scene work and improvisation, students learn to use acting terminology, identify dramatic beats, develop character objectives and play actions. Students who are not theatre majors or minors must get permission of instructor.

**Term Offered:** Spring, Fall

**THR 2640 Voice And Movement**

[3 credit hours]

Theory and practice of vocal and physical techniques for the actor. Repeatable for up to 8 hours of credit.

**Prerequisites:** THR 2610 with a minimum grade of D- or THR 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**THR 2660 Acting for the Camera I**

[3 credit hours]

Performing dramatic material for camera with an emphasis on the differences between stage and screen performing.

**Prerequisites:** THR 2610 with a minimum grade of D-

**THR 2990 Special Projects**

[1-3 credit hours]

Individual study provides a student an opportunity to work independently on a problem of special interest in theatre under the direction of the faculty. (Seminar forms available in the department office.)

**Term Offered:** Spring, Fall

**THR 3150 Theatre History - Ancient to Contemporary - WAC**

[3 credit hours]

This course explores major developments and trends in theatrical production, theory, and playwriting from ancient times to the Present. The study of theatre history in this course is applied to the development of design and directorial approaches for plays by theatre artists. In addition, students will use performance techniques in class to explore historical production methods and theatrical theories through practice.

**Prerequisites:** ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Fall



**THR 3210 Playwriting**

[3 credit hours]

Creative writing for the theatre analyzing traditional and contemporary structure and style.

**Prerequisites:** ENGL 2720 with a minimum grade of D- or THR 2200 with a minimum grade of D-

**Term Offered:** Spring

**THR 3250 Theatre and Stage Management**

[3 credit hours]

Theatre & Stage Management will provide students with a general overview of the administrative and management functions of an arts organization as well as an introductory look at the responsibilities and process of stage management. Through readings and videos, interactive discussion forums, research projects, and practical assignments, the student will develop an understanding of the structure and business of the performing arts and its various management positions, translating traditional business practices into the language of the arts.

**Term Offered:** Spring

**THR 3340 Acting for the Camera II**

[3 credit hours]

This course is directed toward third and fourth year acting students at University of Toledo's Department of Theatre and Film who have completed Acting for the Camera I. It is designed to reinforce and build upon the principles explored in Acting for the Camera I.

**Prerequisites:** THR 3610 with a minimum grade of D- and THR 2660 with a minimum grade of D-

**Term Offered:** Spring

**THR 3410 Stage Lighting Design**

[3 credit hours]

Principles and theories of lighting design for theatrical productions are explored. Develop skills of script analysis, light study, light plot and related graphics for conceptualization and communication of design ideas.

**Prerequisites:** THR 1040 with a minimum grade of D- and THR 2400 with a minimum grade of D-

**Term Offered:** Spring

**THR 3420 Advanced Stage Management**

[3 credit hours]

Study and application of professional practices of the Stage Manager as they pertain to the theatrical production. Emphasis is placed on the duties, responsibilities and procedures from pre-production to post-production planning.

**Prerequisites:** THR 3250 with a minimum grade of D-

**Term Offered:** Fall

**THR 3430 Advanced Stagecraft and Technical Production**

[3 credit hours]

This course is designed to expand upon the foundation of scenic construction techniques formed in basic theatre practices: Stagecraft. Topics include welding/metalworking, advanced woodworking, scenic automation, theatrical rigging, and technical direction/project management/shop management.

**Prerequisites:** THR 1030 with a minimum grade of D-

**THR 3440 Stage Scenic Design**

[3 credit hours]

Theory and principles of scenic design for stage are the focus.

Conceptualization and communication of design ideas are explored through renderings, models, ground plans and elevations. Students are required to purchase supplies.

**Prerequisites:** THR 2400 with a minimum grade of D-

**Term Offered:** Fall

**THR 3450 Scene Painting**

[3 credit hours]

Students learn the fundamental skills of the scenic artist in large scale painting: preparing and sizing the surfaces, gridding and other layout, and painting techniques and tools used by the scenic artist.

**THR 3460 Advanced Costume Construction**

[3 credit hours]

This course builds upon the skills developed in THR 1050 Costuming. Advanced techniques will be explored such as pattern development, construction of several garments from pattern to finishing, as well as development of additional advanced hand sewing techniques.

**Prerequisites:** THR 1050 with a minimum grade of D-

**Term Offered:** Spring, Fall

**THR 3470 Stage Sound Design**

[3 credit hours]

Students study the methods and techniques of sound production and design used in the theatre. Tools and techniques of audio production are used in laboratory recording and mixdown.

**Prerequisites:** THR 1040 with a minimum grade of D- or MUS 2270 with a minimum grade of D-

**Term Offered:** Spring

**THR 3480 Stage Costume Design**

[3 credit hours]

Principles and theories of costume design for theatrical productions are explored. Develop skills of script analysis, sketching, fabric study and rendering for conceptualization and communication of design ideas. Students are required to purchase supplies.

**Prerequisites:** THR 1050 with a minimum grade of D-

**THR 3600 Acting II**

[3 credit hours]

Students are exposed to a range of techniques explicated by primary acting theorists/practitioners, including diagnosis of individual skills, work in voice, movement, textual analysis and scene preparation.

**Prerequisites:** THR 2610 with a minimum grade of D- or THR 2600 with a minimum grade of D-

**Term Offered:** Spring

**THR 3710 Directing I**

[3 credit hours]

The director's approach to analyzing a script, formulating a production concept and realizing that concept on stage. Discussions and exercises progress to directing scenes or short plays in class.

**Prerequisites:** THR 2400 with a minimum grade of D- and THR 2610 with a minimum grade of D- and THR 3150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**THR 3800 Production**

[1-3 credit hours]

Through study and practice the student contributes significantly to department productions. This course is for students who have auditioned for roles or applied for design/tech positions in department productions.

**Term Offered:** Spring, Summer, Fall

**THR 3990 Professional Conference-Festival Practicum**

[0 credit hours]

A lab course in support of preparation and participation in pre-professional experiences, conferences and/or festivals. There is a lab fee in support of student travel and expenses.

**Term Offered:** Spring, Fall

**THR 4150 Theatre Studies**

[3 credit hours]

Application of the methods of theatre history, theory, and criticism to the exploration of a specific theatrical theme, style, historical period, or practice.

**Prerequisites:** THR 3110 with a minimum grade of D- and THR 3120 with a minimum grade of D-

**THR 4310 Acting for the Camera III**

[3 credit hours]

This course is directed toward fourth year and Capstone acting students at University of Toledo's Department of Theatre and Film who have completed Acting for the Stage I and Acting for the Camera I and II. It is designed to reinforce and build upon the principles explored in Acting for the Camera II. The course will consist of developing characters from dialogue, improvisation and writing, while creating a story with advanced filmmakers from the Film Department.

**Prerequisites:** THR 2660 with a minimum grade of D-

**Term Offered:** Spring

**THR 4400 Seminar Topics In Design**

[3 credit hours]

Individual and group investigations of particular topics in all phases of design and technology, i.e. scene painting, advanced design and rendering technique, new technology.

**Term Offered:** Spring, Fall

**THR 4440 Theatre Design**

[3 credit hours]

Principles and theories for theatrical design are explored through real world implementation on departmental productions.

**Term Offered:** Spring, Fall

**THR 4600 Acting III**

[3 credit hours]

Advanced acting course with a focus on text analysis and the technique and craft of performance.

**Prerequisites:** (THR 2600 with a minimum grade of D- or THR 2610 with a minimum grade of D-) and (THR 2620 with a minimum grade of D- or THR 3600 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**THR 4940 Internship**

[3 credit hours]

Internship with an approved program, company, or agency in theatre. Students must submit proposal for approval of instructor. (Repeatable for 6 hours credit.)

**Term Offered:** Spring, Summer, Fall

**THR 4950 Honors Thesis**

[3 credit hours]

Research or a creative project on a topic in theatre. Required of all candidates seeking department honors. (Repeatable for 6 hours credit.)

**Term Offered:** Spring, Fall

**THR 4990 Special Projects**

[1-3 credit hours]

Individual study provides a student an opportunity to work independently on a problem of special interest in theatre under the direction of the faculty.

**Term Offered:** Spring, Fall

## B.A. in Film/Video

### General Guidelines for the Bachelor of Arts

No more than 50 hours in the major courses are allowed for the Bachelor of Arts major. Any hours over 50 will not count toward the degree.

A student majoring in theatre or film may petition to substitute a comparable course or courses for one or more of the required courses in the major. Such requests should be made in writing to the department Chair and are subject to approval by the department faculty.

The requirement of 18 hours in related courses must be met with courses chosen from a list of approved courses in the student's Degree Audit. Choose these courses in consultation with the departmental adviser. Related courses must be chosen from courses acceptable for major credit, not courses that were approved for general or distributive requirements at university or college level.

The P/NC option is available to theatre and film majors in the areas of the major.

When a FILM course is a prerequisite for another FILM course, a grade of C or better must have been earned in the prerequisite course.

A minimum of 48 hours in film/video to include the following:

Code	Title	Hours
FILM 2230	Creative Approaches to Cinema	3
FILM 2310	Film I	3
FILM 2320	Digital Cinema Production I - WAC	3
FILM 2330	Critical Approaches to Cinema	3
FILM 2350	Cinema History	3
FILM 3200	Directing Screen Acting	3
FILM 3330	Critical Approaches to Cinema II	3
FILM 3340	Media Storycraft	3
FILM 3430	Global Cinema	3
FILM 3550	Producing and Production Management	3
FILM 4220	Media Studies	3
or FILM 4310	Advanced Production	
FILM 4320	Film/Video Workshop <sup>1</sup>	3
FILM 4330	Critical Approaches to Cinema III	3
Select 3 hours from:		3

FILM 3370	Documentary Film	
FILM 3380	Experimental Film	
FILM 3390	History of Video Art	
Select 3 hours from:		3
FILM 3510	Cinematography and Color Grading	
FILM 3560	Methods for the Professional Editor	
Select 3 hours from:		3
FILM 3530	Animation and Optical Printing	
FILM 3730	Directing for Camera	
FILM 3820	Documentary Field Production	
Total Hours		48

<sup>1</sup> May be taken more than once.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Some Film courses are offered every other year.

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
Arts/Humanities Core (Communication)		3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
FILM 2230	Creative Approaches to Cinema	3
FILM 2330	Critical Approaches to Cinema	3
Hours		16
<b>Second Term</b>		
FILM 2350	Cinema History	3
FILM 2310	Film I	3
THR 1040	Stage Lighting and Sound Technology	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16
<b>Third Term</b>		
FILM 2320	Digital Cinema Production I - WAC	3
FILM 3410	European Cinema	3
or FILM 3420	or Third Cinema	
THR 2660	Acting for the Camera I (Related course)	3
or THR 2610	or	
Elementary Foreign Language I		4
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Hours		16
<b>Fourth Term</b>		
Select one of the following:		3
FILM 3370	Documentary Film	
FILM 3380	Experimental Film	
FILM 3390	History of Video Art	
FILM 3430	Global Cinema	3

Natural Sciences Core		3
THR 2400	Fundamentals of Design (Related)	3
or THR 2420	or Stage Makeup	
or THR 3410	or Stage Lighting Design	
Elementary Foreign Language II		4
Hours		16

#### Fifth Term

Select one of the following:		3
FILM 3510	Cinematography and Color Grading	
FILM 3560	Methods for the Professional Editor	
FILM 3330	Critical Approaches to Cinema II	3
Intermediate Foreign Language I or approved culture course		3
Arts/Humanities (History)		3
THR 1040	Stage Lighting and Sound Technology	3
Hours		15

#### Sixth Term

FILM 3340	Media Storycraft	3
Select one of the following:		3
FILM 3530	Animation and Optical Printing	
FILM 3730	Directing for Camera	
FILM 3820	Documentary Field Production	
Intermediate Foreign Language II or approved culture course		3
Social Sciences Core/Diversity of US		3
Social Sciences Core		3
Hours		15

#### Seventh Term

FILM 3200	Directing Screen Acting	3
FILM 4330	Critical Approaches to Cinema III	3
Related course		6
Diversity of US/Non-US Diversity		3
Hours		15

#### Eighth Term

FILM 4310	Advanced Production	3
or FILM 4220	or Media Studies	
FILM 4320	Film/Video Workshop	3
Related or minor course		3
Elective		6
Hours		15
Total Hours		124

## HONORS IN FILM/VIDEO

Qualified juniors and seniors may apply to work for honors in film/video. The following are requirements for entrance into the Honors Program in film/video:

- Admission:**
  - Minimum GPA of 3.3 in film/video courses;
  - Minimum cumulative GPA of 3.0; and
  - Completion of 12 hours in film/video
- Requirements:** A student must have completed nine hours of honors course work in film/video before beginning the thesis project. The

honors topic and project are to be developed in close conjunction with an honors faculty adviser. A student may enroll for the thesis paper/project in FILM 4950 Honors Thesis for a maximum of six hours of credit. The designation "honors" on the diploma will be given to students who receive a grade of A on the honors thesis and maintain a 3.3 GPA in film/video.

## B.A. in Theatre

### General Guidelines for the Bachelor of Arts

No more than 50 hours in the major courses are allowed for the Bachelor of Arts major. Any hours over 50 will not count toward the degree.

A student majoring in theatre or film may petition to substitute a comparable course or courses for one or more of the required courses in the major. Such requests should be made in writing to the department Chair and are subject to approval by the department faculty.

The requirement of 18 hours in related courses must be met with courses chosen from a list of approved courses in the student's Degree Audit. Choose these courses in consultation with the departmental adviser. Related courses must be chosen from courses acceptable for major credit, not courses that were approved for general or distributive requirements at university or college level.

The P/NC option is available to theatre and film majors in the areas of the major.

The BA in Theatre consists of 33 required hours, plus one 12 hour concentration, either Stage and Screen Acting or in Theatre Design & Technology, for a total of 45 hours:

Code	Title	Hours
<b>Required Courses</b>		
THR 1030	Stagecraft and Theatre Technology	3
THR 1040	Stage Lighting and Sound Technology	3
THR 1050	Costume Technology	3
THR 2000	Theatre Practicum I <sup>1</sup>	0
THR 2050	Theatre Practicum II <sup>1</sup>	0
THR 2100	Departmental Ensemble <sup>2</sup>	0
THR 2200	Script Analysis	3
THR 2400	Fundamentals of Design	3
THR 2660	Acting for the Camera I	3
THR 2600	Acting I	3
THR 3150	Theatre History - Ancient to Contemporary - WAC	3
THR 3250	Theatre and Stage Management	3
THR 3710	Directing I	3
THR 4150	Theatre Studies	3
Total Hours		33

Students also select one concentration for 12 additional hours:

Code	Title	Hours
<b>Concentration in Stage and Screen Acting</b>		
<i>Required</i>		
THR 3340	Acting for the Camera II	3
THR 3600	Acting II	3
<i>Select 6 hours from:</i>		6
THR 2420	Stage Makeup	
THR 2640	Voice And Movement	
THR 2990	Special Projects	
THR 3800	Production <sup>3</sup>	
THR 4310	Acting for the Camera III	
THR 4940	Internship	
THR 4600	Acting III	
THR 4950	Honors Thesis	
THR 4990	Special Projects	
Total Hours		12

Code	Title	Hours
<b>Concentration in Theatre Design &amp; Technology</b>		
<i>Select 12 hours from the following:</i>		12
THR 2420	Stage Makeup	
THR 2990	Special Projects	
THR 3410	Stage Lighting Design	
THR 3420	Advanced Stage Management	
THR 3430	Advanced Stagecraft and Technical Production	
THR 3440	Stage Scenic Design	
THR 3450	Scene Painting	
THR 3460	Advanced Costume Construction	
THR 3470	Stage Sound Design	
THR 3480	Stage Costume Design	
THR 3800	Production <sup>3</sup>	
THR 4440	Theatre Design	
THR 4940	Internship	
THR 4950	Honors Thesis	
THR 4990	Special Projects	
Total Hours		12

<sup>1</sup> Must be taken twice.

<sup>2</sup> Must be taken every semester to graduate.

<sup>3</sup> No more than 6 credits of 3800 can count toward graduation.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Note that some upper-level Theatre courses are offered every other year.

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
THR 1030	Stagecraft and Theatre Technology	3
THR 1040	Stage Lighting and Sound Technology	3
THR 2000	Theatre Practicum I	0

THR 2100	Departmental Ensemble	0
THR 2200	Script Analysis	3
ENGL 1110	College Composition I	3
Arts/Humanities Core (History)		3
Hours		16

**Second Term**

THR 1050	Costume Technology	3
THR 2000	Theatre Practicum I	0
THR 2100	Departmental Ensemble	0
THR 2600	Acting I	3
or THR 1030	or Stagecraft and Theatre Technology	
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
MATH 1180	Reasoning With Mathematics	3
Hours		16

**Third Term**

THR 2050	Theatre Practicum II	0
THR 2100	Departmental Ensemble	0
THR 2400	Fundamentals of Design	3
THR 2660	Acting for the Camera I	3
Elementary Foreign Language I		4
ENGL 2720	Reading Drama (Arts/Humanities Core (English Lit))	3
Social Sciences Core/Non-US Diversity		3
Hours		16

**Fourth Term**

THR 2050	Theatre Practicum II	0
THR 2100	Departmental Ensemble	0
THR 3150	Theatre History - Ancient to Contemporary - WAC	3
THR 3250	Theatre and Stage Management	3
Communication - Required Elective		3
Elementary Foreign Language II		4
Social Sciences Core		3
Hours		16

**Fifth Term**

THR 2100	Departmental Ensemble	0
THR 3710	Directing I	3
THR Concentration		3
Intermediate Foreign Language I or approved culture course		3
Related or Minor course		3
Diversity of US		3
Hours		15

**Sixth Term**

THR 2100	Departmental Ensemble	0
THR Concentration		3
Intermediate Foreign Language II or approved culture course		3
Related or minor course		3

Natural Sciences Core	3
Elective	3
Hours	15

**Seventh Term**

THR 2100	Departmental Ensemble	0
THR Concentration		3
Related or minor course		6
Elective		6
Hours		15

**Eighth Term**

THR 2100	Departmental Ensemble	0
THR 4150	Theatre Studies	3
THR Concentration		3
Related or minor course		6
Elective		3
Hours		15
Total Hours		124

## HONORS IN THEATRE

Qualified juniors and seniors may apply to work for honors in theatre. The following are requirements for entrance into the Honors program in theatre:

**1. Admission**

- Minimum GPA of 3.3 in theatre courses;
- Minimum cumulative GPA of 3.0; and
- Completion of 12 hours in theatre.

- Requirements:** A student must have completed a minimum of nine hours of honors course work in theatre before beginning the thesis project. The honors topic and paper are to be developed in close conjunction with an honors faculty adviser. A student may enroll for the thesis paper/project in THR 4950 Honors Thesis for a maximum of six hours of credit. The designation "honors" on the diploma will be given to students who receive a grade of A on the honors thesis and maintain a 3.3 GPA in theatre.

## Minor in Cinema Studies

A minimum of 21 hours is required for minors in theatre and film, as follows for each minor:

Code	Title	Hours
<b>Required Courses</b>		
FILM 2330	Critical Approaches to Cinema	3
FILM 2350	Cinema History	3
FILM 3410	European Cinema	3
or FILM 3420	Third Cinema	
Select one of the following:		3
FILM 3370	Documentary Film	
FILM 3380	Experimental Film	
FILM 3390	History of Video Art	
Select one of the following:		3



FILM 2310	Film I	
FILM 2320	Digital Cinema Production I - WAC	
FILM 3350	Screenwriting - WAC	
<b>Electives</b>		
Select 6 hours of film electives		6
Total Hours		21

## Minor in Film/Video

A minimum of 21 hours is required for minors in theatre and film, as follows for each minor:

Code	Title	Hours
<b>Required Courses</b>		
FILM 2310	Film I	3
FILM 2320	Digital Cinema Production I - WAC	3
FILM 2330	Critical Approaches to Cinema	3
FILM 2350	Cinema History	3
<b>Studies</b>		
Select 1 or 2 of the following:		3-6
FILM 2980	Cinema Studies Topic I <sup>1</sup>	
FILM 3370	Documentary Film	
FILM 3380	Experimental Film	
FILM 3390	History of Video Art	
FILM 3410	European Cinema	
FILM 3420	Third Cinema	
FILM 3980	Cinema Studies Topic II <sup>1</sup>	
FILM 4340	Topics In Feminist Cinema Studies	
FILM 4360	Le Cinema Francais	
FILM 4370	Cinema Studies Seminar <sup>1</sup>	
<b>Production</b>		
Select 1 or 2 of the following:		3-6
FILM 3310	Film II	
FILM 3320	Video II	
FILM 3350	Screenwriting - WAC	
FILM 3360	Production Topic <sup>1</sup>	
FILM 3730	Directing for Camera	
FILM 4320	Film/Video Workshop <sup>1</sup>	
FILM 4350	Screenwriting II	
Total Hours		18-24

<sup>1</sup> May be taken more than once.

## Minor in Stage and Screen Performance

Stage and Screen Performance - 21 hours required

Code	Title	Hours
<b>Required:</b>		
THR 2000	Theatre Practicum I	0

THR 2200	Script Analysis	3
THR 2600	Acting I	3
THR 2660	Acting for the Camera I	3
THR 3150	Theatre History - Ancient to Contemporary - WAC	3
THR 3250	Theatre and Stage Management	3
<b>Select 6 credits:</b>		
THR 2640	Voice And Movement	
THR 3600	Acting II	
THR 3340	Acting for the Camera II	
THR 3710	Directing I	
Total Hours		15

## Minor in Theatre Arts

Code	Title	Hours
<b>Select one:</b>		
THR 1030	Stagecraft and Theatre Technology	
THR 1040	Stage Lighting and Sound Technology	
THR 1050	Costume Technology	
<b>Required:</b>		
THR 2000	Theatre Practicum I	
THR 2200	Script Analysis	
THR 2400	Fundamentals of Design	
THR 2600	Acting I	
THR 3150	Theatre History - Ancient to Contemporary - WAC	
THR 3250	Theatre and Stage Management	
THR elective		
Total Hours		0

## Department of Women's and Gender Studies

### Interdisciplinary Major

Sharon Barnes, Chair and Advisor

The Department of Women's and Gender Studies (WGST) produces successful graduates who leave the University of Toledo with an interdisciplinary degree that prepares them for graduate school, professional degree programs, and the rapidly changing workplace. Our students pursue engaging careers in both the public and private sectors. Our recent alums can be found working in Washington, DC for the President's National Security Council or working locally for a women's advocacy organization. They can also be found in graduate programs in English, Higher Education, Theology, and Women's Studies as well as in law school, and health programs.

### WGST and Pre-Med

Students interested in the Pre-Med program may major in WGST. The Pre-Med program is a career track, not an official academic major. All students enrolled in the pre-med program must also choose a major. In the past few years, an increasing number of students interested in health-related careers have chosen WGST as their major. Students with

a particular interest in women's health and topics related to gender and healthcare may take the following: WGST 4810 Women's Health Care, WGST 4160 Health And Gender, and WGST 3980 Topics In Women's Studies in partial fulfillment of the Women's and Gender Studies major electives. In addition, WGST students pursuing the Pre-Med option will be assigned a mentor, from the medical profession, to provide guidance and advice as they develop their career goals. Students who would like to pursue the WGST and Pre-Med option should speak with the department adviser and the Pre-Med adviser.

## WGST and Pre-Law

Students interested in pursuing law school may major in WGST. Pre-Law is not a specific major at the University of Toledo. Students who would like to prepare themselves for law school may choose any academic major. According to the American Bar Association students interested in attending law school should prepare themselves by gaining the following skills: Analytic / Problem Solving Skills, Critical Reading and Writing Skills, Oral Communication / Listening Abilities, General Research Skills, Task Organization / Management Skills. The WGST degree provides students with the opportunity to gain all of the skills recommended for the successful pursuit of a career in law. In addition, undergraduates in Women's and Gender Studies who wish to study legal ideas, institutions, and procedures from the perspective of gender may pursue a concentration in Law and Social Thought by taking the following: LST 2010, LST 2500 (2 hours), and LST 4900 in partial fulfillment of the women's and gender studies major electives, and LST 4940 (3 to 6 hours) to satisfy the women's and gender studies internship requirement. Students should meet with the department adviser to discuss their specific academic plan.

## Concentrations

WGST has formal concentrations in Sexuality Studies and Law and Social Thought. Please speak to the department advisor for more information on these programs.

## Degrees Offered

- B.A. in Women's and Gender Studies (p. 140)
- Minor in Sexualities Studies (p. 140)
- Minor in Women's and Gender Studies (p. 141)

### WGST 1150 Proseminar In Women's And Gender Studies I

[1 credit hour]

Students reflect on the academic and professional and community activist dimensions of Women's and Gender Studies. Students develop a preliminary plan for the development of their portfolio.

**Term Offered:** Fall

### WGST 2010 Introduction To Gender Studies: Gender, Sex And Difference

[3 credit hours]

Interdisciplinary introduction to gender studies. Critically examines competing theories of gender and sex identification, construction, and biological determinism. Considers ethical and intersectional issues regarding differences of gender, sex and sexuality.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity

### WGST 2020 Girlhood and Adolescence

[3 credit hours]

This class examines the adolescent experience of the American teenage girl using historical documents, current films, magazines, and popular teen fiction. This class looks at the complexities that race, socioeconomic status, ethnicity and sexual orientation have on the experience of the teenage girl. Students will have several opportunities to share their own adolescent experiences as they relate to assigned readings.

**Prerequisites:** WGST 2010 with a minimum grade of D-Multicultural US Diversity

### WGST 2150 Proseminar In Women's & Gender Studies II

[1 credit hour]

Designed for majors only. Students reflect on the academic and professional and community activist dimensions of Women's and Gender Studies. Special emphasis will be dedicated to the completion of the portfolio for future career, community activism and graduate studies.

**Term Offered:** Spring, Summer

### WGST 2400 Women's Roles: A Global Perspective

[3 credit hours]

The course focuses on the current and evolving social, economic and political status of women in the United States and selected non-Western societies.

**Term Offered:** Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

### WGST 2610 Women In American Politics

[3 credit hours]

An examination of the role of women in the American political system with special attention to the socializing experiences, political power bases and legal status.

**Prerequisites:** PSC 1200 with a minimum grade of D-Multicultural US Diversity

### WGST 2640 Race, Class, And Gender

[3 credit hours]

Introduction to the study of race, class and gender as factors in American stratification.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

### WGST 2880 Contemporary U.S. Queer Cultures

[3 credit hours]

An interdisciplinary, multicultural examination of diverse lesbian, gay, bisexual, transgender, and other queer cultural productions, this course examines continuities and conflicts in aesthetics, issues, materials, and motivations for queer culture.

**Term Offered:** Spring, Fall

Multicultural US Diversity

### WGST 2980 Special Topics In Women's And Gender Studies

[3 credit hours]

Study of selected topics relevant to Women's and Gender Studies. May be repeated for major or minor credit when topic varies.

**Term Offered:** Spring, Summer, Fall

**WGST 3010 Issues In Women's Studies**

[3 credit hours]

Required for the major. An interdisciplinary introduction to basic works of feminist thought, feminist methodologies and current issues in the field world-wide. Writing Intensive (WAC) course.

**Prerequisites:** ENGL 1130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**WGST 3020 Visual Construction Of Gender**

[3 credit hours]

Writing intensive (WAC) course. This non-studio course focuses on the ways images reflect and shape our understanding of gender. Students will learn to analyze visual material in order to identify and articulate their cultural significance in relation to gender.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**WGST 3030 Women and the Body**

[3 credit hours]

This class will look at the complexities of women's relationships to their bodies and how the intersectionalities of race, gender identity, sexuality and societal pressures help shape the ways women feel about themselves. Using popular culture, feminist theory, and other mediums, this class expects students to participate in self-reflection, critical analysis, and the application of various feminist theories to their work.

**Prerequisites:** WGST 2010 with a minimum grade of D-

Multicultural US Diversity

**WGST 3200 Issues In Lesbian, Transgender, Bisexual And Gay Communities**

[3 credit hours]

This course will explore current issues facing diverse LTBGQ communities including historical, socio-cultural and political perspectives.

**Term Offered:** Fall

**WGST 3400 Feminist Approaches To Social Problems**

[3 credit hours]

This course will examine current social problems from a feminist perspective. The course will examine such issues as the feminization of poverty, violence against women, homeless, prostitution, teen pregnancy, HIV/AIDS and addictions.

**Term Offered:** Spring

**WGST 3550 Feminism And Philosophy**

[3 credit hours]

An examination of feminist perspectives on love, sex and marriage in philosophy, exploring the relevance of gender to central questions in ethics, political theory and epistemology.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**WGST 3650 Economics Of Gender**

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes; the feminization of poverty, persistent male-female wage differential, expanding proportion of female headed households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Summer, Fall

Multicultural US Diversity

**WGST 3700 Women's Studies Topics In Literature**

[3 credit hours]

Specific topics vary. Check schedule of classes for specific subject.

**Term Offered:** Spring, Fall

**WGST 3750 Women And Literature**

[3 credit hours]

Examines literary works in light of major issues raised by feminist criticism. Specific emphasis varies. Recommended ENGL 2700 or 3790

**Term Offered:** Spring, Summer

Multicultural US Diversity

**WGST 3800 Sexual Politics**

[3 credit hours]

This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

**Term Offered:** Spring, Fall

**WGST 3980 Topics In Women's Studies**

[3 credit hours]

Specific topics vary. Check schedule of courses for specific subject.

**Term Offered:** Spring, Summer, Fall

**WGST 4010 Women's Studies Topics In Film**

[3 credit hours]

Specific topics vary. Check schedule of courses for specific subject and prerequisites.

**Term Offered:** Spring, Fall

**WGST 4160 Health And Gender**

[3 credit hours]

An examination of gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals. Writing intensive (WAC) course.

**WGST 4190 Gender In Cross-Cultural Perspective**

[3 credit hours]

Analysis of gender stratification and its impact on culture in various nations and across ethnic groups in the United States.

Multicultural Non-US Diversity

**WGST 4200 Women's Studies Topics In Science**

[3 credit hours]

Cross-listings of 4000-level courses with biology, chemistry, geology, math, natural sciences, physics and pre-med. Specific topics vary. Check schedule of courses for specific subject and prerequisites.

**WGST 4350 Women's Studies Topics In Communication**

[3 credit hours]

Cross-listings of 4000-level courses with the communication department. Specific topics vary. Check schedule of courses for specific subject and prerequisites determined by the department of communication.

**Term Offered:** Summer, Fall

**WGST 4500 Women's Studies Topics In History**

[3 credit hours]

Crosslistings of 4000 level courses with the history department. Specific topics vary. Check schedule of courses for specific subject and prerequisites.

**Term Offered:** Spring, Fall**WGST 4510 Women In American History**

[3 credit hours]

This course presents American history from early settlement to the present by examining the contributions of women, in interaction with men, to the immensely complex fabric of American life.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**WGST 4540 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraft and its decline.

**Term Offered:** Spring**WGST 4590 Law, Policy, And The Politics of Sexuality**

[3 credit hours]

This course explores law, policymaking, and public attitudes that affect gay, lesbian, bisexual and transgendered individuals in the U.S. Topics include hate crimes legislation, discrimination law, and same-sex marriage.

**Term Offered:** Spring**WGST 4610 Feminist Political Theory**

[3 credit hours]

Readings in and interpretation of feminist political theories about the state, power, citizenship, and identity.

**Prerequisites:** PSC 2800 with a minimum grade of D-**WGST 4700 Women's Studies Topics In Literature**

[3 credit hours]

Specific topics vary. Check Course Schedules for specific subject.

**Term Offered:** Spring**WGST 4760 Feminist Readings Of Literature**

[3 credit hours]

Classic works by diverse American and English men and women considered in light of significant recent feminist scholarship and how such perspectives enhance classroom teaching and academic production.

**WGST 4770 American Women Writers**

[3 credit hours]

Author/authors vary with each offering. Consult schedule of courses for specific subject. Recommended ENGL 2700, 2800 or 3790.

**WGST 4810 Women's Health Care**

[3 credit hours]

The course is designed to consider those personal health topics of special interest and applicability to women. The focus will be upon the role of self-understanding and self-help in promotion of health and well-being.

**Term Offered:** Spring, Summer, Fall**WGST 4870 Feminisms**

[3 credit hours]

This introduction to global feminist thought familiarizes students with feminist terminology and a variety of feminist theoretical frameworks.

**Term Offered:** Spring, Fall**WGST 4880 Queer Theory WAC**

[3 credit hours]

This course explores the theoretical concepts/texts of Queer Theory and its locations in communities and identities, focusing principally on the theories that have emerged since the late 1990s.

**Prerequisites:** WGST 3010 with a minimum grade of D- or WGST 2010 with a minimum grade of D-**Term Offered:** Spring

Multicultural US Diversity

**WGST 4890 Women's Studies Research And Methodologies**

[4 credit hours]

Investigates and applies current trends in Women's Studies as a discipline and the ways in which Women's Studies methodologies inform other disciplines. Requires research project.

**Term Offered:** Fall**WGST 4900 Seminar In Women's Studies**

[3 credit hours]

Seminar focused on timely topics in Women's Studies chosen by rotating faculty.

**Term Offered:** Spring, Summer**WGST 4910 Honors Thesis In Women's And Gender Studies**

[1-3 credit hours]

Supervised research and writing for honors students only.

**Term Offered:** Spring, Summer, Fall**WGST 4940 Internship In Women's Studies**

[1-3 credit hours]

Practical field experience applying Women's Studies theories, arranged in conjunction with the department of women's and gender studies. Students must have pre-approval based on detailed written proposal.

**Term Offered:** Spring, Summer, Fall**WGST 4980 Advanced Topics In Women's Studies**

[3 credit hours]

A course on a special topic in Women's Studies. Consult schedule of courses for topic to be studied and semester offered. Recommended WGST 3010.

**Term Offered:** Spring, Fall**WGST 4990 Independent Study In Women's Studies**

[1-4 credit hours]

Supervised independent reading and research on selected topics. Before the end of open registration, students must present the supervising instructor a detailed written proposal and get written approval.

**Term Offered:** Spring, Summer, Fall

A student majoring in Women's and Gender Studies who is seeking departmental honors should make formal application near the end of the junior year. The following requirements must be met in order to earn the departmental honors designation at the time of graduation:

1. minimum cumulative GPA of 3.3 overall and 3.5 in WGST courses,
2. Two WGST 3000-4000-level elective courses and

3. WGST 4910 Thesis for three hours, an honors thesis, or a paper from a 4000-level class submitted for review by the department honors committee.

## B.A. in Women's and Gender Studies

Major, B. A. 33 hours (30 hours if double-major)

Code	Title	Hours
<b>Core Requirements</b>		
WGST 1150	Proseminar In Women's And Gender Studies I	1
WGST 2150	Proseminar In Women's & Gender Studies II	1
WGST 3010	Issues In Women's Studies	3
WGST 4870	Feminisms (Feminist Theory)	3
WGST 4890	Women's Studies Research And Methodologies	4
WGST 4900	Seminar In Women's Studies	3
WGST 4940	Internship In Women's Studies	3
<b>Electives</b>		
Select 15 hours <sup>1</sup>		15
Total Hours		33

<sup>1</sup> Students for whom WGST is a second major are required to take only 12 hours of electives. All cross-listed WGST classes or courses with WGST numbers (that are not core-classes) count as WGST electives. In some cases, where relevant, courses with other department alpha-codes may count as electives at the discretion of the adviser or chair.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
WGST 2010	Introduction To Gender Studies: Gender, Sex And Difference	3
Elementary Foreign Language I		4
MATH 1180	Reasoning With Mathematics	3
Social Sciences Core		3
Hours		17
<b>Second Term</b>		
WGST 2400	Women's Roles: A Global Perspective	3
Elementary Foreign Language II		4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
HIST 1010-1200	Arts/Humanities Core (History)	3
Natural Sciences Core		3
Hours		16
<b>Third Term</b>		
WGST 3010	Issues In Women's Studies	3
Intermediate Foreign Language I		3
Arts/Humanities Core (Fine Art)		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3

Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16
<b>Fourth Term</b>		
WGST Major Elective		3
WGST Major Elective		3
Intermediate Foreign Language II		3
SOC 1010	Introduction To Sociology (Social Sciences Core)	3
Arts/Humanities Core		3
Hours		15
<b>Fifth Term</b>		
WGST 1150	Proseminar In Women's And Gender Studies I	1
WGST 4890	Women's Studies Research And Methodologies	4
WGST Major Elective		3
Related or Minor course		6
Elective or Core Elective		3
Hours		17
<b>Sixth Term</b>		
WGST 2150	Proseminar In Women's & Gender Studies II	1
WGST 4870	Feminisms	3
Related or Minor course		3
Elective		6
Hours		13
<b>Seventh Term</b>		
WGST 4900	Seminar In Women's Studies	3
Related or Minor course		3
Elective		9
Hours		15
<b>Eighth Term</b>		
WGST 4940	Internship In Women's Studies	3
Related or Minor course		3
Elective		9
Hours		15
Total Hours		124

## Minor in Sexualities Studies

To complete the minor in Sexualities Studies, students must maintain a minimum GPA of 2.0 in the minor field, and complete 19 credits of coursework—10 of required core courses and 9 from a broad list of elective courses, subject to approval by the student's adviser and department chair.

Code	Title	Hours
<b>Required Core</b>		
WGST 2010	Introduction To Gender Studies: Gender, Sex And Difference	3
WGST 4980	Advanced Topics In Women's Studies	3



WGST 4890	Women's Studies Research And Methodologies	4
<b>Electives</b>		
Select 9 hours of the following:		9
WGST 2880	Contemporary U.S. Queer Cultures	
WGST 3200	Issues In Lesbian, Transgender, Bisexual And Gay Communities	
WGST 3550	Feminism And Philosophy	
WGST 3800	Sexual Politics	
WGST 4590	Law, Policy, And The Politics of Sexuality	
WGST 4870	Feminisms	
WGST 4980	Advanced Topics In Women's Studies <sup>1</sup>	
Total Hours		19

<sup>1</sup> Only one of these may count as an elective. The other will be counted as part of the core requirements.

## Minor in Women's and Gender Studies

Minor in Women's and Gender Studies: 23 hours

Code	Title	Hours
<b>Core Requirements</b>		
WGST 1150	Proseminar In Women's And Gender Studies I	1
or WGST 2150	Proseminar In Women's & Gender Studies II	
WGST 3010	Issues In Women's Studies	3
WGST 4870	Feminisms (Feminist Theory)	3
WGST 4890	Women's Studies Research And Methodologies	4
<b>Electives</b>		
Select 9 hours of elective courses <sup>1</sup>		9
Total Hours		20

<sup>1</sup> All cross-listed WGST classes or courses with WGST numbers (that are not core-classes) count as WGST electives. In some cases, where relevant, courses with other department alpha-codes may count as electives at the discretion of the adviser or chair.

## Department of World Languages and Cultures

### CONTACTS

Linda Rouillard, Chair

Friederike Emonds, Undergraduate Advisor, German

Joseph Hara, Undergraduate Advisor for Minors, Japanese

Juan Martin, Undergraduate Advisor for Majors and Minors, Spanish (A-H)

Linda Rouillard, Undergraduate Advisor for Majors and Minors, French

Gaby Semaan, Undergraduate Advisor for Minors, Arabic

Kathleen Thompson-Casado, Undergraduate Advisor for Majors and Minors, Spanish (I-Z)

**Degrees Offered:** The Department of World Languages and Cultures offers bachelor of arts degrees in French, German, and Spanish.

**The Department of World Languages and Cultures offers instruction in the following languages:**

- Arabic
- Chinese
- French
- German
- Japanese
- Latin
- Spanish

A major can be earned in the areas of French, German, and Spanish; Departmental Honors can be pursued in these same areas. A Minor can be earned in any of the major fields as well as Arabic and Japanese.

## Advanced Placement Program

Refer to the University of Toledo's Registrar page at [https://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](https://www.utoledo.edu/offices/registrar/student_records/advan_credits.html) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Study Abroad

Credit for foreign language study abroad will be given only for those accredited courses or programs approved in advance. Students should apply for approval at the Department of World Languages and Cultures at least one month prior to the anticipated date of departure. Credit will be granted only upon presentation of a formal certificate indicating the hours completed and examinations passed.

## Degrees Offered

- B.A. in Applied French (p. 151)
- B.A. in Applied German (p. 151)
- B.A. in Business Spanish (p. 151)
- B.A. in General French (p. 151)
- B.A. in General German (p. 152)
- B.A. in General Spanish (p. 153)
- Certificate in Intercultural Competency (p. 154)
- Certificate in Spanish Translation and Interpretation (p. 154)
- Certificate in World Language Proficiency (p. 154)
- Minor in Applied German (p. 155)
- Minor in Arabic (p. 155)
- Minor in French (p. 156)
- Minor in General German (p. 156)
- Minor in Japanese (p. 156)
- Minor in Spanish (p. 157)

**ARBC 1080 Culture and Commerce in the Arabic-Speaking World**  
[3 credit hours]

A study of the culture and society of the Arabic-speaking world with emphasis on business and economics. Taught in English.

**Term Offered:** Spring

Core Arts & Humanities, Multicultural Non-US Diversity

**ARBC 1090 Culture of the Arabic-Speaking World**

[3 credit hours]

An introduction to principal social, artistic, and literary aspect of modern culture in the Arabic-speaking world. Taught in English.

**Term Offered:** Fall

Core Arts &amp; Humanities, Multicultural Non-US Diversity

**ARBC 1110 Elementary Arabic I**

[4 credit hours]

An introduction to Arabic Language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Term Offered:** Fall**ARBC 1120 Elementary Arabic II**

[4 credit hours]

An introduction to Arabic language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Prerequisites:** ARBC 1110 with a minimum grade of D-**Term Offered:** Spring

Core Arts &amp; Humanities

**ARBC 2140 Intermediate Arabic I**

[3 credit hours]

Further practice of the four language skills with grammar building and readings of a literary-cultural nature.

**Prerequisites:** ARBC 1120 with a minimum grade of D-**Term Offered:** Spring, Fall

Core Arts &amp; Humanities

**ARBC 2150 Intermediate Arabic II**

[3 credit hours]

Further practice of the four language skills with grammar building and readings of a literary-cultural nature.

**Prerequisites:** ARBC 2140 with a minimum grade of D-**Term Offered:** Spring

Core Arts &amp; Humanities

**ARBC 3010 Conversation and Composition I**

[3 credit hours]

Work on advanced listening, speaking, reading, and writing skills through intensive work with authentic texts that deal contemporary issues relating to the Arabic-speaking world.

**Prerequisites:** ARBC 2150 with a minimum grade of D-**Term Offered:** Fall**ARBC 3020 Conversation and Composition II**

[3 credit hours]

Work on advanced listening, speaking, reading, and writing skills through intensive work with authentic texts that deal contemporary issues relating to the Arabic-speaking world.

**Prerequisites:** ARBC 3010 with a minimum grade of D-**Term Offered:** Spring**ARBC 3410 Survey of Arabic Civilization I**

[3 credit hours]

The course examines the Arabic culture and civilization from Arabic authors' literature published in English as well as in Arabic and compares that to Western thought and expression.

**Prerequisites:** ARBC 3020 with a minimum grade of D-**Term Offered:** Fall**ARBC 3420 Survey of Arabic Civilization II**

[3 credit hours]

This course further the students' knowledge of the Arabic civilization through examining the ways of thinking and social contexts as expected in literary works and poetry from different eras.

**Prerequisites:** ARBC 3020 with a minimum grade of D-**Term Offered:** Spring**ARBC 3430 Survey of Arabic Civilization III**

[3 credit hours]

This course further the students' knowledge of the Arabic civilization through examining the ways of thinking and social contexts as expressed in literary works and poetry from different eras.

**Prerequisites:** ARBC 3410 with a minimum grade of D- and ARBC 3420 with a minimum grade of D-**ARBC 3980 Special Topics in Arabic**

[1-3 credit hours]

Study of a selected topic in Arabic language, literature or culture. May be repeated when topic varies.

**Prerequisites:** ARBC 3010 with a minimum grade of D- and ARBC 3020 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**ARBC 4010 Arabic Syntax and Stylistics I**

[3 credit hours]

It provides thorough intensive work with authentic texts that allows further study of syntax, morphology and complex grammatical structure of Arabic and the relationship between aural/oral aspects of the language.

**Prerequisites:** ARBC 3020 with a minimum grade of D-**Term Offered:** Fall**ARBC 4020 Arabic Syntax and Stylistics II**

[3 credit hours]

It provides thorough intensive work with authentic texts that allows further study of syntax, morphology and complex grammatical structure of Arabic and the relationship between aural/oral aspects of the language.

**Prerequisites:** ARBC 4010 with a minimum grade of D-**Term Offered:** Spring**ARBC 4850 Media in the Arab World**

[3 credit hours]

The course provides an in-depth study and analysis of media and news sources in the Arab world and surveys major press and alternative publishing outlets produced in Arabic.

**ARBC 4980 Special Topics in Arabic**

[1-3 credit hours]

Study of a selected topic in Arabic language, literature or culture. May be repeated when topic varies.

**Prerequisites:** ARBC 3010 with a minimum grade of D- and ARBC 3020 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**CHIN 1090 Chinese Culture**

[3 credit hours]

Through a systematic study of Chinese values and patterns of behaviors, this course builds students' proficiency in cultural competence of Chinese.

**Term Offered:** Spring, Fall

**CHIN 1110 Elementary Chinese I**

[4 credit hours]

An introduction to Chinese language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Term Offered:** Fall**CHIN 1120 Elementary Chinese II**

[4 credit hours]

An introduction to Chinese language and culture through listening, speaking, reading and writing. Laboratory practice required. Prerequisite: CHIN 1110 or satisfactory score on placement test.

**Prerequisites:** CHIN 1110 with a minimum grade of D-**Term Offered:** Spring, Fall

Core Arts &amp; Humanities

**CHIN 2140 Intermediate Chinese I**

[3 credit hours]

**CHIN 2150 Intermediate Chinese II**

[3 credit hours]

**CHIN 3980 Special topics in Chinese**

[0-6 credit hours]

Study of a selected topic in Chinese language, literature or culture. May be repeated when topic varies.

**FLAN 1970 Special Topics**

[4 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall**FLAN 1980 Special Topics**

[4 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall**FLAN 2970 Special Topics**

[3 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall**FLAN 2980 Special Topics**

[3 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall**FLAN 3440 Intercultural Communication: Principles And Practice**

[4 credit hours]

This course offers a survey of major concepts in intercultural communication. It emphasizes a balance between theoretical and practical learning opportunities and seeks to promote intercultural understanding.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**FLAN 3980 Special Topics in Foreign Languages**

[0-6 credit hours]

Study of a selected topic in language, literature, or culture.

**Term Offered:** Spring, Summer, Fall**FLAN 4940 Internship in Foreign Languages**

[0-12 credit hours]

Educational work experience in a pre-approved professional field.

**Term Offered:** Spring, Fall**FLAN 4980 Special topics in Foreign Languages**

[0-6 credit hours]

Study of a selected topic in foreign languages. May be repeated when topic varies.

**FLAN 4990 Independent Study in World Languages and Cultures**

[3 credit hours]

Independent study of a selected topic in foreign languages, developed in consultation with a faculty member. 3 hours. May be repeated with a different topic.

**Term Offered:** Spring, Summer, Fall**FREN 1080 Culture And Commerce In The French-Speaking World**

[3 credit hours]

A study of the French-speaking world with emphasis on the relationship between its culture and its business and economic institutions and practices. Taught in English. (Not for major credit.)

**Term Offered:** Fall

Core Arts &amp; Humanities

**FREN 1090 French & Francophone Culture In The Modern World**

[3 credit hours]

This course focuses on modern French and Francophone culture and their historical and geographical sources. Taught in English. (Not for major credit.)

**Term Offered:** Spring

Core Arts &amp; Humanities

**FREN 1110 Elementary French I**

[4 credit hours]

A comprehensive introductory course in French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Term Offered:** Spring, Fall**FREN 1120 Elementary French II**

[4 credit hours]

A comprehensive introductory course in French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** FREN 1110 with a minimum grade of D- or French Language Placement with a score of 1120**Term Offered:** Spring, Fall

Core Arts &amp; Humanities

**FREN 1500 Review Of Elementary French**

[4 credit hours]

Review of first-year college French for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (not for major credit)

**FREN 2140 Intermediate French I**

[3 credit hours]

Review and further development of command of the French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** FREN 1120 with a minimum grade of D- or FREN 1500 with a minimum grade of D- or French Language Placement with a score of 2140

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**FREN 2150 Intermediate French II**

[3 credit hours]

Further review and development of command of the French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** FREN 2140 with a minimum grade of D- or French Language Placement with a score of 2150

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**FREN 2190 Study Abroad**

[1-3 credit hours]

This course is designed to permit and encourage non-majors to spend time in a country where French is spoken. Credit granted in accordance with established departmental procedures. (Not for major credit.)

**Prerequisites:** FREN 2150 with a minimum grade of D-

**FREN 3010 Conversation And Composition I**

[3 credit hours]

Idiomatic conversation practice, dictation and pronunciation drill as well as development of practical writing skills.

**Prerequisites:** FREN 2150 with a minimum grade of D- or French Language Placement with a score of 3000

**Term Offered:** Fall

**FREN 3020 Conversation And Composition II**

[3 credit hours]

Further aural/oral development with emphasis on the mechanics of writing in French and the organization of ideas. A writing-intensive course.

**Prerequisites:** FREN 3010 with a minimum grade of D-

**Term Offered:** Spring

**FREN 3170 Business French**

[3 credit hours]

An introduction to the language of the French-speaking world, with emphasis on business and commerce.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**FREN 3210 Survey Of French Literature I**

[3 credit hours]

French literature from its origins through the eighteenth century.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Fall

**FREN 3220 Survey Of French Literature II**

[3 credit hours]

French and Francophone literature from the 19th and 20th centuries.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Spring

**FREN 3400 Cross-Cultural Understanding**

[3 credit hours]

An examination of the notions of culture, multiculturalism and Francophone cultures. Course content emphasizes issues of race, class and gender in U.S. and Francophone contexts.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**FREN 3410 Survey Of French Civilization I**

[3 credit hours]

A study of the many ways in which France has contributed to world culture through architecture, painting, sculpture, music, literature, folklore, science, philosophy and education.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FREN 3420 Survey Of French And Francophone Civilization II**

[3 credit hours]

An introductory study of selected sociological, political, cultural and economic issues of contemporary France and Francophone areas.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Spring

**FREN 3980 Special Topics in French Studies**

[0-6 credit hours]

Study of a selected topic in French language, literature or culture. May be repeated when topic varies.

**Term Offered:** Spring

**FREN 4010 French Syntax And Stylistics I**

[3 credit hours]

A thorough study of syntax, morphology, phonetic principles and grammatical structure of French. Emphasizes various writing activities and styles.

**Prerequisites:** FREN 3020 with a minimum grade of D-

**Term Offered:** Fall

**FREN 4020 French Syntax And Stylistics II**

[4 credit hours]

Emphasizes various writing activities and styles. Includes a research component and basic literary criticism as well as a review of syntax and grammar. A writing-intensive and capstone course.

**Prerequisites:** FREN 4010 with a minimum grade of D-

**Term Offered:** Spring

**FREN 4050 Advanced Conversation**

[3 credit hours]

Advanced practice in speaking idiomatic French. Special attention to problems of pronunciation and oral proficiency.

**Prerequisites:** FREN 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FREN 4070 French Translation**

[3 credit hours]

Practice in translation of texts from French into English and English into French. Subject matter area will include commerce, natural, physical, and social sciences and the humanities.

**FREN 4160 Teaching Colloquium**

[3 credit hours]

A course in the theory and practice of teaching French and of second language acquisition in general.

**Term Offered:** Fall

**FREN 4190 Study Abroad**

[1-12 credit hours]

Designed to permit and encourage the French major to pursue study in a country where French is spoken. Credit granted in accordance with established departmental procedures.

**Prerequisites:** FREN 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer

**FREN 4200 Contemporary French And Francophone Civilization**

[3 credit hours]

A study of contemporary France and/or Francophone cultures including discussion of economics, daily life, the family, social groups, industry, politics and education.

**Term Offered:** Spring

**FREN 4810 French & Francophone Literature Of The 20th Century I**

[3 credit hours]

Literature of all genres from the period before World War I to the present.

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**Term Offered:** Spring

**FREN 4820 French & Francophone Literature Of The 20th Century II**

[3 credit hours]

Literature of all genres from the period before World War I to the present.

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**FREN 4850 Le Cinema Francais**

[3 credit hours]

A study of the development of French film and its place in world cinema.

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**FREN 4860 La Production Feminine**

[3 credit hours]

A study of texts produced by women in the French language in various fields (for example, literary theory, film, literature, philosophy, psychoanalysis, semiotics, post-colonial theory).

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**FREN 4910 Honors Research In French**

[3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**FREN 4940 Internship In French**

[0-12 credit hours]

Educational work experience, using French, in a pre-approved professional field.

**FREN 4980 Special Topics In French Studies**

[1-3 credit hours]

Study of a selected topic in French or Francophone language, literature, or culture. May be repeated when topic varies.

**Term Offered:** Spring, Summer, Fall

**FREN 4990 Independent Study In French**

[1-3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**GERM 1080 German Culture And Commerce**

[3 credit hours]

Study of German culture and society with emphasis on business and economics. Taught in English. (Not for major credit.)

**Term Offered:** Fall

Core Arts & Humanities

**GERM 1090 Introduction To Modern German Culture**

[3 credit hours]

An introduction to principal social, artistic and literary aspects of modern German culture. Taught in English. (Not for major credit.)

**Term Offered:** Spring, Fall

Core Arts & Humanities

**GERM 1110 Elementary German I**

[4 credit hours]

An introduction to German language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Term Offered:** Spring, Fall

**GERM 1120 Elementary German II**

[4 credit hours]

An introduction to German language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Prerequisites:** GERM 1110 with a minimum grade of D- or German Language Placement with a score of 1120

**Term Offered:** Spring, Fall

Core Arts & Humanities

**GERM 1500 Review Of Elementary German**

[4 credit hours]

Review of first-year college German for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (not for major credit)

**GERM 2140 Intermediate German I**

[3 credit hours]

Practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

**Prerequisites:** GERM 1120 with a minimum grade of D- or GERM 1500 with a minimum grade of D- or German Language Placement with a score of 2140

**Term Offered:** Spring, Fall

Core Arts & Humanities

**GERM 2150 Intermediate German II**

[3 credit hours]

Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (Not for major credit)

**Prerequisites:** GERM 2140 with a minimum grade of D- or German Language Placement with a score of 2150

**Term Offered:** Spring, Fall

Core Arts & Humanities

**GERM 2190 Study Abroad**

[1-3 credit hours]

The course permits beginning students of German to study or work in a country where German is spoken. Credit will be awarded in accordance with established departmental procedures. (Not for major credit.)

**Prerequisites:** GERM 2150 with a minimum grade of D-



**GERM 2980 Special Topics in German Studies**

[0-6 credit hours]

Study of a selected topic in German language, literature or culture. May be repeated when topic varies.

**GERM 3010 Conversation And Composition I**

[3 credit hours]

Work on advanced listening, speaking, reading and writing skills through intensive work with authentic texts that deal with contemporary issues relating to the German-speaking world.

**Prerequisites:** GERM 2150 with a minimum grade of D- or German Language Placement with a score of 3000

**Term Offered:** Fall

**GERM 3020 Conversation And Composition II**

[3 credit hours]

Work on advanced speaking, listening, reading and writing skills through intensive work with authentic texts that deal with contemporary issues relating to the German-speaking world. A writing-intensive course.

**Prerequisites:** GERM 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**GERM 3170 Business German**

[3 credit hours]

An introduction to the language and practices of German business and commerce.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**GERM 3180 Scientific And Technical German**

[3 credit hours]

An introduction to and the practical application of scientific and technical German language in the German-speaking world. Course is conducted in German.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**GERM 3200 Survey Of German Literature**

[3 credit hours]

A survey of German literature from its origins to the present, with emphasis on literature after 1750.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**GERM 3410 Survey Of German Civilization I**

[3 credit hours]

A study of different aspects of German culture and civilization such as fine arts, history, science and philosophy.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**GERM 3420 Survey Of German Civilization II**

[3 credit hours]

A study of different aspects of German culture and civilization such as fine arts, history, science and philosophy.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**GERM 3980 Special Topics in German Studies**

[0-6 credit hours]

Study of a selected topic in German language, literature, or culture. May be repeated for credit when topic varies.

**GERM 4010 German Syntax And Stylistics I**

[3 credit hours]

Refinement of conversation and composition skills through the analysis of texts and written and oral exercises.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**Term Offered:** Summer, Fall

**GERM 4020 Advanced Conversation And Composition II - WAC**

[4 credit hours]

A practical application of language skills in the preparation of a German-related project chosen, developed and presented by the student. A writing-intensive and capstone course.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer

**GERM 4160 Teaching Colloquium**

[3 credit hours]

A course in the theory and practice of teaching German and of second language acquisition in general.

**Term Offered:** Fall

**GERM 4190 Study Abroad**

[1-12 credit hours]

The course permits the German major or minor to study or work in a country where German is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**GERM 4200 German Culture And Civilization**

[3 credit hours]

Study of major trends and current developments in German Landeskunde. May be repeated when topic varies.

**GERM 4620 German Classicism**

[3 credit hours]

Study of Classical writers of Germany: Goethe, Schiller and their contemporaries.

**Term Offered:** Spring

**GERM 4710 German Literature Of The 19th Century**

[3 credit hours]

Study of selected works by authors from Büchner to Fontane.

**Term Offered:** Spring

**GERM 4720 German Romanticism**

[3 credit hours]

Study of Romantic writers of Germany such as Novalis, Eichendorff, E.T.A. Hoffmann and Bettina Brentano.

**GERM 4810 German Literature Of The 20th Century**

[3 credit hours]

Study of selected works by authors from the turn of the century to the present.

**Term Offered:** Spring, Fall

**GERM 4850 Genre Studies**

[3 credit hours]

Study of a selected literary or film genre, its development, and its influence on German culture. May be repeated for credit when topic varies.

**Term Offered:** Spring, Fall

**GERM 4870 German Literature In Translation**

[3 credit hours]

In-depth study of selected works of German literature in English translation. (Not for major credit).

**Term Offered:** Spring, Fall

**GERM 4900 Studies In The Works Of An Author Or Authors**

[1-3 credit hours]

Readings of the works of a major author or authors of German literature. May be repeated when topic varies.

**Term Offered:** Spring

**GERM 4910 Honors Research In German**

[3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**Term Offered:** Spring

**GERM 4940 Internship in German**

[1-12 credit hours]

Educational work experience, using the German language. Maximum of 3 hours may be applied to the German major or minor program.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**Term Offered:** Fall

**GERM 4980 Special Topics In German Studies**

[1-3 credit hours]

Study of a selected topic in German language, literature, or culture. May be repeated for credit when topic varies.

**Term Offered:** Spring, Summer, Fall

**GERM 4990 Independent Study In German**

[1-3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**Term Offered:** Spring, Fall

**JAPN 1080 Japanese Culture And Commerce**

[3 credit hours]

Study of Japanese culture and society with emphasis on business and economics. Taught in English. (not for major credit).

**Term Offered:** Summer

Core Arts & Humanities, Multicultural Non-US Diversity

**JAPN 1090 Introduction To Japanese Culture**

[3 credit hours]

An introduction to principal social, artistic and literary aspects of modern Japanese culture. Taught in English. (Not for major credit.)

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity

**JAPN 1110 Elementary Japanese I**

[4 credit hours]

An introduction to Japanese language and culture through aural comprehension, speaking, reading and writing. Laboratory practice required. (not for major credit)

**Term Offered:** Spring, Fall

**JAPN 1120 Elementary Japanese II**

[4 credit hours]

An introduction to Japanese language and culture through listening, speaking, reading and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** JAPN 1110 with a minimum grade of D- or Japanese Language Placement with a score of 1120

**Term Offered:** Spring, Fall  
Core Arts & Humanities

**JAPN 2140 Intermediate Japanese I**

[3 credit hours]

Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

**Prerequisites:** JAPN 1120 with a minimum grade of D- or Japanese Language Placement with a score of 2140

**Term Offered:** Spring, Fall  
Core Arts & Humanities

**JAPN 2150 Intermediate Japanese II**

[3 credit hours]

Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

**Prerequisites:** JAPN 2140 with a minimum grade of D- or Japanese Language Placement with a score of 2150

**Term Offered:** Spring, Fall  
Core Arts & Humanities

**JAPN 2190 Study Abroad**

[1-3 credit hours]

The course permits beginning students of Japanese to spend time in a country where Japanese is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** JAPN 2150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**JAPN 3010 Conversation And Composition I**

[3 credit hours]

Work on advanced aural comprehension, speaking, reading and writing skills through intensive work with authentic texts dealing with contemporary issues relating to Japan. Laboratory practice required.

**Prerequisites:** JAPN 2150 with a minimum grade of D- or Japanese Language Placement with a score of 3000

**Term Offered:** Fall

**JAPN 3020 Conversation And Composition II**

[3 credit hours]

Further work on advanced aural comprehension, speaking, reading and writing skills through intensive work with authentic texts dealing with contemporary issues relating to Japan. Laboratory practice required. A writing-intensive course.

**Prerequisites:** JAPN 3010 with a minimum grade of D-

**Term Offered:** Spring

**JAPN 3170 Business Japanese**

[3 credit hours]

An introduction to the language and practices of Japanese business and commerce.

**Term Offered:** Spring, Fall

**JAPN 3410 Survey Of Japanese Civilization I**

[3 credit hours]

A study of different aspects of Japanese culture and civilization such as fine arts, history, science and philosophy.

**Prerequisites:** JAPN 2150 with a minimum grade of D-

**Term Offered:** Fall

**JAPN 3980 Special Topics in Japanese Studies**

[0-6 credit hours]

Study of a selected topic in Japanese language, literature, or culture. May be repeated for credit when topic varies.

**JAPN 4010 Japanese Syntax And Stylistics I**

[3 credit hours]

A review of Japanese stylistic structures through the analysis of texts and written and oral exercises in Japanese.

**Prerequisites:** JAPN 3020 with a minimum grade of D-

**Term Offered:** Fall

**JAPN 4020 Japanese Syntax And Stylistics II**

[4 credit hours]

Further review of Japanese stylistic structures through the analysis of texts and written and oral exercises in Japanese. The course includes an introduction to Japanese calligraphy. A writing-intensive course.

**Prerequisites:** JAPN 4010 with a minimum grade of D-

**Term Offered:** Spring

**JAPN 4050 Advanced Conversation I**

[3 credit hours]

Practice in speaking idiomatic Japanese.

**Term Offered:** Fall

**JAPN 4060 Advanced Conversation II**

[3 credit hours]

Continued practice in speaking idiomatic Japanese.

**Term Offered:** Spring

**JAPN 4070 Japanese Translation**

[3 credit hours]

Practice in translation of texts from Japanese into English and English into Japanese. Subject matter area will include commerce, natural, physical and social sciences, and the humanities.

**JAPN 4190 Study Abroad**

[1-12 credit hours]

The course permits the student minoring in Japanese to spend time in a country where Japanese is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** JAPN 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**JAPN 4940 Internship in Japanese**

[0-12 credit hours]

Educational work experience, using Japanese, in a pre-approved professional field.

**JAPN 4980 Special Topics In Japanese Studies**

[1-3 credit hours]

Study of a selected topic in Japanese language, literature, or culture. May be repeated for credit when topic varies.

**Term Offered:** Spring, Summer, Fall

**JAPN 4990 Independent Study In Japanese**

[1-3 credit hours]

Independent research on special topics. May be repeated once for additional credit.

**Term Offered:** Spring, Summer, Fall

**SPAN 1010 Spanish for Health Care Professionals**

[3 credit hours]

Introductory presentation of the vocabulary, grammar, and customs of the Spanish-speaking world as they relate to the field of health care.

**Term Offered:** Spring

**SPAN 1080 Culture & Commerce In The Spanish-Speaking World**

[3 credit hours]

A study of the Hispanic world with emphasis on the relationship between its culture and business and economic institutions and practices. Taught in English. (Not for major credit)

**Term Offered:** Spring, Fall

Core Arts & Humanities

**SPAN 1090 Culture Of Latin America**

[3 credit hours]

A study of selected artistic, literary, philosophical, political and social aspects of present day Latin American culture. Taught in English. (Not for major credit)

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity

**SPAN 1100 Culture Of Spain**

[3 credit hours]

A study of the events, people and movements that have formed Spain.

Taught in English. (Not for major credit)

**Term Offered:** Fall

Core Arts & Humanities

**SPAN 1110 Elementary Spanish I**

[4 credit hours]

Practice in using and understanding Spanish to develop listening, speaking, reading and writing skills. Pronunciation, grammar, vocabulary and cultural topics. Lab practice required. (Not for major credit)

**Term Offered:** Spring, Summer, Fall

**SPAN 1120 Elementary Spanish II**

[4 credit hours]

A comprehensive introductory course in Spanish language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (Not for major credit)

**Prerequisites:** SPAN 1110 with a minimum grade of D- or Spanish Language Placement with a score of 1120

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**SPAN 1500 Review Of Elementary Spanish**

[4 credit hours]

Review of first-year college Spanish for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (Not for major credit)

**Term Offered:** Spring, Fall

Core Arts & Humanities

**SPAN 2140 Intermediate Spanish I**

[3 credit hours]

Intermediate-level review and development of aural comprehension, speaking, reading and writing skills. Topics in the cultures of the Spanish-speaking world. Lab practice required. (Not for major credit)

**Prerequisites:** SPAN 1120 with a minimum grade of D- or SPAN 1500 with a minimum grade of D- or Spanish Language Placement with a score of 2140

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**SPAN 2150 Intermediate Spanish II**

[3 credit hours]

Further review and development of aural comprehension, speaking, reading and writing skills. Topics in the cultures of the Spanish-speaking world. Lab practice required. (Not for major credit)

**Prerequisites:** SPAN 2140 with a minimum grade of D- or Spanish Language Placement with a score of 2150

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**SPAN 2190 Study Abroad**

[1-3 credit hours]

Designed to permit and encourage non-majors to spend time in a country where Spanish is spoken. Credit will be given in accordance with established departmental procedures. (Not for major credit.)

**Term Offered:** Summer

**SPAN 2980 Special Topics in Spanish Studies**

[0-6 credit hours]

Study of a selected topic in Spanish language, literature or culture. May be repeated when topic varies.

**Term Offered:** Spring

**SPAN 3000 Spanish Grammar**

[3 credit hours]

A study of all Spanish grammatical aspects with special emphasis on those which present greater difficulty for the English speaker.

**Prerequisites:** SPAN 2150 with a minimum grade of D- or Spanish Language Placement with a score of 3000

**Term Offered:** Spring, Fall

**SPAN 3010 Conversation And Composition I**

[3 credit hours]

Practice in speaking, listening, reading and writing. Vocabulary and fluency building in Spanish with special emphasis on oral practice.

**Prerequisites:** SPAN 2150 with a minimum grade of D- or Spanish Language Placement with a score of 3000

**Term Offered:** Spring, Fall

**SPAN 3020 Conversation And Composition II**

[3 credit hours]

Practice in speaking, listening, reading and writing. Vocabulary and fluency building in Spanish with special emphasis on writing practice. A writing-intensive course.

**Prerequisites:** SPAN 2150 with a minimum grade of D- or Spanish Language Placement with a score of 3000

**Term Offered:** Spring, Fall

**SPAN 3170 Business Spanish**

[3 credit hours]

An introduction to the language of the Hispanic world peculiar to the areas of business and commerce.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 3210 Survey Of Spanish Literature I**

[3 credit hours]

A survey of Spanish literature from its origins through the seventeenth century.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 3220 Survey Of Spanish Literature II**

[3 credit hours]

A survey of Spanish literature from the eighteenth century to the present.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3270 Survey Of Latin American Literature I**

[3 credit hours]

The literature of Latin America from the Colonial period to the end of the nineteenth century.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 3280 Survey Of Latin American Literature II**

[3 credit hours]

The literature of Latin America from the beginning of the twentieth century to the present.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3410 Spanish Culture And Civilization**

[3 credit hours]

A study of the events, people and movements that have formed Spain. Attention is also given to the nation's contemporary life-style and culture.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3420 Latin American Civilization**

[3 credit hours]

A study of Latin America's contributions to world culture in such fields as architecture, painting, sculpture, music, literature, folklore, sciences, philosophy and education.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3980 Special Topics in Spanish Studies**

[0-6 credit hours]

Study of a selected topic within Spanish studies. May be repeated for credit when topic varies.

**SPAN 4000 Advanced Spanish Grammar**

[3 credit hours]

An advanced study of Spanish grammar in preparation for higher levels of study in the language and for its use in professional pursuits.

**Term Offered:** Spring, Fall

**SPAN 4010 Syntax And Stylistics**

[4 credit hours]

A thorough study of the grammatical structure of Spanish with special attention to stylistic problems.

**Prerequisites:** (SPAN 3000 with a minimum grade of D- and SPAN 3010 with a minimum grade of D- and SPAN 3020 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**SPAN 4060 Translation & Interpretation In Spanish**

[3 credit hours]

A study of the techniques of translation and interpretation as they relate to English and Spanish based on a contrastive analysis of the two languages, both in theory and practice.

**Prerequisites:** SPAN 4010 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 4070 History Of The Spanish Language**

[3 credit hours]

A study of the development of the Spanish language from Vulgar Latin to the present, illustrated with selected texts.

**Term Offered:** Spring

**SPAN 4110 Introduction To Spanish Linguistics**

[4 credit hours]

Basic concepts of linguistics as applied to the study of the Spanish language and its dialectal systems. Emphasis on phonetics, phonology, morphology, syntax and semantics.

**Term Offered:** Spring, Fall

**SPAN 4120 Teaching Colloquium**

[3 credit hours]

A course in the theory and practice of teaching Spanish and of second language acquisition in general.

**Term Offered:** Fall

**SPAN 4170 Latin American Novel II**

[3 credit hours]

A study of the major developments in Latin American novel from the Boom to the present.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**SPAN 4190 Study Abroad**

[1-12 credit hours]

The course permits the Spanish major or minor to spend time in a country where Spanish is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**SPAN 4250 Latin American Short Story**

[3 credit hours]

Development of the Latin American short story from its origins with special emphasis on the contemporary authors such as Allende, Borges, Cortazar, Garcia Marquez and Rulfo among others.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 4260 Latin American Poetry I**

[3 credit hours]

The poetry of Latin America from Sor Juana Ines de la Cruz to Ruben Dario.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**SPAN 4270 Latin American Poetry II**

[3 credit hours]

Latin American poetry from Surrealism to the present, with emphasis on authors such as Borges, Huidobro, Neruda, Paz and Vallejo.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**SPAN 4370 Advanced Business Spanish**

[3 credit hours]

Advanced study of the business language, cultural attitudes and current business climate of the societies that comprise the Spanish-speaking world.

**Prerequisites:** SPAN 3170 with a minimum grade of D-

**SPAN 4820 Modern Spanish Drama**

[3 credit hours]

Critical readings of Spanish drama from Romanticism to the latest contemporary trends.

**SPAN 4830 Hispanic Cinema**

[3 credit hours]

Critical viewings of Spanish-language films from Spain and the Americas. Emphasis on cultural criticism.

**Term Offered:** Spring

**SPAN 4910 Honors Research In Spanish**

[3 credit hours]

Independent research in special topics. May be repeated once for credit.

**SPAN 4940 Internship in Spanish**

[0-12 credit hours]

Educational work experience, using Spanish, in a pre-approved professional field.

**Term Offered:** Spring, Fall

**SPAN 4980 Special Topics**

[3 credit hours]

Study and research in specific areas or authors with considerable reading of Spanish texts plus written reports in Spanish.

**Term Offered:** Spring, Fall

Qualified students are invited to pursue Honors in a French, German, or Spanish major and thereby earn the degree designation of "Departmental Honors" in their specific field upon graduation. Formal application for Departmental Honors must be made in the Department Office (Field House Room 2400). Normally, a petition for admission to the program should be made near the end of the sophomore year. Formal acceptance is based on the following:

1. Junior or senior standing;
2. A GPA of 3.3 overall in the major; and
3. Approval by the language Honors adviser and the Chairperson of the Department of World Languages and Cultures.

To graduate with the degree designation of "Departmental Honors," the student must:

1. Satisfy the standards requirements listed above for the major;
2. Maintain a GPA of 3.3 overall and in the major;
3. Satisfactorily complete a minimum of 12 hours of departmental honors course work at the 3000- or 4000 level; and



4. include among the 12 hours the Honors Research course (FREN 4910, GERM 4910, or SPAN 4910) that normally leads to the completion of an Honors thesis.

## B.A. in Applied French

### Requirements for the Major in French, German, and Spanish

A minimum of 34 hours is required for the undergraduate majors in French, German and Spanish. French, German, and Spanish offer two tracks for majors, the general and the applied language or business track.

A minimum of 34 credit hours is required for both French majors.

Code	Title	Hours
<b>Applied French Major</b>		
FREN 2140	Intermediate French I	3
FREN 2150	Intermediate French II	3
FREN 3010	Conversation And Composition I	3
FREN 3020	Conversation And Composition II	3
FREN 4010	French Syntax And Stylistics I	3
FREN 4020	French Syntax And Stylistics II	4
FREN 3220	Survey Of French Literature II (or other literature course)	3
Select two of the following:		6
FREN 3410	Survey Of French Civilization I	
FREN 3420	Survey Of French And Francophone Civilization II	
FREN 4200	Contemporary French And Francophone Civilization	
FREN 4980	Special Topics In French Studies	
FREN 3170	Business French	3
Select one of the following:		3
FREN 4070	French Translation	
FREN 4190	Study Abroad	
FREN 4980	Special Topics In French Studies	
Total Hours		34

## B.A. in Applied German

### Requirements for the Major in French, German, and Spanish

A minimum of 34 hours is required for the undergraduate majors in French, German and Spanish. French, German, and Spanish offer two tracks for majors, the general and the applied language or business track.

Code	Title	Hours
<b>Applied German Major</b>		
GERM 3010	Conversation And Composition I	3
GERM 3020	Conversation And Composition II	3
GERM 4010	German Syntax And Stylistics I	3
GERM 4020	Advanced Conversation And Composition II - WAC	4

GERM 3200	Survey Of German Literature (or other literature course)	3
Select two of the following:		6
GERM 3410	Survey Of German Civilization I	
GERM 3420	Survey Of German Civilization II	
GERM 4200	German Culture And Civilization	
GERM 4980	Special Topics In German Studies	
Select two of the following: <sup>1</sup>		6
GERM 3170	Business German	
GERM 3180	Scientific And Technical German	
GERM 4940	Internship in German	
GERM 4980	Special Topics In German Studies	
Additional 3000-4000 level courses		6
Total Hours		34

<sup>1</sup> Applied course work topics GERM 3170 or GERM 3180 must be taken.

## B.A. in Business Spanish

### Requirements for the Major in French, German, and Spanish

A minimum of 34 hours is required for the undergraduate majors in French, German and Spanish. French, German, and Spanish offer two tracks for majors, the general and the applied language or business track.

Code	Title	Hours
<b>Business Spanish Major</b>		
SPAN 3000	Spanish Grammar	3
SPAN 3010	Conversation And Composition I	3
SPAN 3020	Conversation And Composition II	3
SPAN 4000	Advanced Spanish Grammar	3
or SPAN 4010	Syntax And Stylistics	
SPAN 3220	Survey Of Spanish Literature II	3
or SPAN 3280	Survey Of Latin American Literature II	
SPAN 3410 & SPAN 3420	Spanish Culture And Civilization and Latin American Civilization	6
SPAN 3170	Business Spanish	3
SPAN 4370	Advanced Business Spanish	3
Additional 3000-4000 level courses		7
Total Hours		34

## B.A. in General French

### Requirements for the Major in French, German, and Spanish

A minimum of 34 hours is required for the undergraduate majors in French, German and Spanish. French, German, and Spanish offer two tracks for majors, the general and the applied language or business track.

A minimum of 34 credit hours is required for both French majors.

Code	Title	Hours
<b>General French Major</b>		
FREN 2140	Intermediate French I	3
FREN 2150	Intermediate French II	3
FREN 3010	Conversation And Composition I	3
FREN 3020	Conversation And Composition II	3
FREN 3210	Survey Of French Literature I	3
FREN 3220	Survey Of French Literature II	3
FREN 3410	Survey Of French Civilization I	3
FREN 3420	Survey Of French And Francophone Civilization II	3
FREN 4010	French Syntax And Stylistics I	3
FREN 4020	French Syntax And Stylistics II	4
Select additional 3000-4000 level course(s) with adviser's approval		3
Total Hours		34

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
FREN 1110	Elementary French I	4
Social Sciences Core		3
HIST 1010-1200 Arts/Humanities Core (History)		3
MATH 1180 Reasoning With Mathematics		3
Hours		17
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
FREN 1120	Elementary French II	4
Natural Sciences Core		3
Social Sciences Core		3
Arts/Humanities (Fine Art)		3
Hours		16
<b>Third Term</b>		
FREN 2140	Intermediate French I	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Diversity of US		3
Elective		3
Hours		16
<b>Fourth Term</b>		
FREN 2150	Intermediate French II	3
FREN Major Elective		3
Arts/Humanities Core		3
Non-US Diversity		3
Core Elective		3
Hours		15

<b>Fifth Term</b>		
FREN 3010	Conversation And Composition I	3
FREN 3410	Survey Of French Civilization I	3
Related or Minor course		3
Related or Minor course		3
Elective		3
Hours		15
<b>Sixth Term</b>		
FREN 3020	Conversation And Composition II	3
FREN 3420	Survey Of French And Francophone Civilization II	3
Elective		3
Related or Minor course		3
Related or Minor course		3
Hours		15
<b>Seventh Term</b>		
FREN 3210	Survey Of French Literature I	3
FREN 4010	French Syntax And Stylistics I	3
FREN Major Elective		3
Related or Minor course		3
Elective		3
Hours		15
<b>Eighth Term</b>		
FREN 3220	Survey Of French Literature II	3
FREN 4020	French Syntax And Stylistics II	4
FREN Major Elective		3
Related or Minor course		3
Elective		2
Hours		15
Total Hours		124

## B.A. in General German

### Requirements for the Major in French, German, and Spanish

A minimum of 34 hours is required for the undergraduate majors in French, German and Spanish. French, German, and Spanish offer two tracks for majors, the general and the applied language or business track.

Code	Title	Hours
<b>General German Major</b>		
GERM 3010	Conversation And Composition I	3
GERM 3020	Conversation And Composition II	3
GERM 3200	Survey Of German Literature	3
GERM 3410	Survey Of German Civilization I	3
or GERM 3420	Survey Of German Civilization II	
GERM 4010	German Syntax And Stylistics I	3
GERM 4020	Advanced Conversation And Composition II - WAC	4

Additional 3000-4000 level courses with adviser's approval	15
<b>Total Hours</b>	<b>34</b>

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
GERM 1110	Elementary German I	4
Social Sciences Core		3
HIST 1010-1200 Arts/Humanities Core (History)		3
MATH 1180	Reasoning With Mathematics	3
<b>Hours</b>		<b>17</b>

<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
GERM 1120	Elementary German II	4
Natural Sciences Core		3
Social Sciences Core		3
Arts/Humanities Core (Fine Art)		3
<b>Hours</b>		<b>16</b>

<b>Third Term</b>		
GERM 2140	Intermediate German I	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Diversity of US		3
Elective		3
<b>Hours</b>		<b>16</b>

<b>Fourth Term</b>		
GERM 2150	Intermediate German II (GERM Major Elective)	3
German Major course		3
Arts/Humanities Core		3
Non-US Diversity		3
Core Elective		3
<b>Hours</b>		<b>15</b>

<b>Fifth Term</b>		
GERM 3010	Conversation And Composition I	3
GERM 3200	Survey Of German Literature	3
GERM 3410	Survey Of German Civilization I	3
Related or Minor course		3
Elective		3
<b>Hours</b>		<b>15</b>

<b>Sixth Term</b>		
GERM 3020	Conversation And Composition II	3
GERM 3420	Survey Of German Civilization II	3
Elective		3

Related or Minor course	6
<b>Hours</b>	<b>15</b>

<b>Seventh Term</b>		
GERM 4010	German Syntax And Stylistics I	3
GERM Major Elective		3
GERM Major Elective		3
Related or Minor course		6
<b>Hours</b>		<b>15</b>

<b>Eighth Term</b>		
GERM 4020	Advanced Conversation And Composition II - WAC	4
GERM Major Elective		3
GERM Major Elective		3
Related or Minor course		3
Elective		2
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>124</b>

## B.A. in General Spanish

### Requirements for the Major in French, German, and Spanish

A minimum of 34 hours is required for the undergraduate majors in French, German and Spanish. French, German, and Spanish offer two tracks for majors, the general and the applied language or business track.

Code	Title	Hours
<b>General Spanish Major</b>		
SPAN 3000	Spanish Grammar	3
SPAN 3010	Conversation And Composition I	3
Select one of the following:		3
SPAN 3210	Survey Of Spanish Literature I	
SPAN 3020	Conversation And Composition II	
SPAN 3270	Survey Of Latin American Literature I	
SPAN 3280	Survey Of Latin American Literature II	
SPAN 3410	Spanish Culture And Civilization	3
or SPAN 3420	Latin American Civilization	
SPAN 4010	Syntax And Stylistics	4
or SPAN 4110	Introduction To Spanish Linguistics	
Additional 3000-4000 level courses with adviser's approval		18
<b>Total Hours</b>		<b>34</b>

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
SPAN 1110	Elementary Spanish I	4
Social Sciences Core		3

HIST 1010-1200 Arts/Humanities Core (History)	3
MATH 1180 Reasoning With Mathematics	3
Hours	17
<b>Second Term</b>	
SPAN 1120 Elementary Spanish II	4
ENGL 1130 College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core	3
Social Sciences Core	3
Arts/Humanities Core (Fine Art)	3
Hours	16
<b>Third Term</b>	
SPAN 2140 Intermediate Spanish I	3
Natural Sciences Core	3
Natural Sciences Core (Lab)	1
ENGL 2710-2800 Arts/Humanities Core (English Lit)	3
Diversity of US	3
Elective	3
Hours	16
<b>Fourth Term</b>	
SPAN 2150 Intermediate Spanish II	3
SPAN Major Elective	3
Arts/Humanities Core	3
Non-US Diversity	3
Core Elective	3
Hours	15
<b>Fifth Term</b>	
SPAN 3000 Spanish Grammar	3
SPAN 3210 Survey Of Spanish Literature I	3
Related or Minor course	6
Elective	3
Hours	15
<b>Sixth Term</b>	
SPAN 3010 Conversation And Composition I	3
SPAN 3220 Survey Of Spanish Literature II	3
Spanish Major Elective	3
Related or Minor course	3
WAC Requirement	3
Hours	15
<b>Seventh Term</b>	
SPAN 3410 Spanish Culture And Civilization	3
SPAN 4000 Advanced Spanish Grammar	3
SPAN 4010 Syntax And Stylistics	4
General Elective	2
Related or Minor course	3
Hours	15
<b>Eighth Term</b>	
SPAN 3020 Conversation And Composition II	3
SPAN 3280 Survey Of Latin American Literature II	3

SPAN Major Elective	3
Related or Minor course	6
Hours	15
Total Hours	124

## Certificate in Intercultural Competency

Code	Title	Hours
<b>Required</b>		
FLAN 3440	Intercultural Communication: Principles And Practice	4
<b>Select any two culture courses below (taught in English):</b>		6
ARBC 1080	Culture and Commerce in the Arabic-Speaking World	
ARBC 1090	Culture of the Arabic-Speaking World	
CHIN 1090	Chinese Culture	
FREN 1080	Culture And Commerce In The French-Speaking World	
FREN 1090	French & Francophone Culture In The Modern World	
FREN 3400	Cross-Cultural Understanding	
GERM 1080	German Culture And Commerce	
GERM 1090	Introduction To Modern German Culture	
JAPN 1080	Japanese Culture And Commerce	
JAPN 1090	Introduction To Japanese Culture	
SPAN 1080	Culture & Commerce In The Spanish-Speaking World	
SPAN 1090	Culture Of Latin America	
SPAN 1100	Culture Of Spain	
Total Hours		10

## Certificate in Spanish Translation and Interpretation

This program provides students with the language skills and cultural knowledge to do translation and interpretation. The certificate documents student outcomes relative to the underlying principles of this field, grounded through in-class and out of class experiences.

Code	Title	Hours
<b>Required:</b>		
SPAN 3170	Business Spanish	3
SPAN 4010	Syntax And Stylistics	4
SPAN 4060	Translation & Interpretation In Spanish	3
Total Hours		10

## Certificate in World Language Proficiency

The certificate in World Language Proficiency is issued based on language proficiency level on the ACTFL (American Council on the Teaching of Foreign Languages) proficiency scale, rather than exclusively on the course credit hours. Students may apply for the Certificate in World Language Proficiency after completing the second year courses in a world language. Students earn the certificate when they demonstrate a minimum of “Intermediate Low” level in French, German, and Spanish, or “Novice High” in Arabic, Chinese, and Japanese on the ACTFL proficiency scale, using the Assessment of the Performance toward Proficiency in Languages (AAPPL) test or the Avant Standards-based Measurement of Proficiency (STAMP) test in reading, writing, listening, and speaking.

#### World Language Proficiency in Arabic

Code	Title	Hours
ARBC 1120	Elementary Arabic II	4
ARBC 2140	Intermediate Arabic I	3
ARBC 2150	Intermediate Arabic II	3
Total Hours		10

#### World Language Proficiency in Chinese

Code	Title	Hours
CHIN 1120	Elementary Chinese II	4
CHIN 2140	Intermediate Chinese I	3
CHIN 2150	Intermediate Chinese II	3
Total Hours		10

#### World Language Proficiency in French

Code	Title	Hours
FREN 1120	Elementary French II	4
FREN 2140	Intermediate French I	3
FREN 2150	Intermediate French II	3
Total Hours		10

#### World Language Proficiency in German

Code	Title	Hours
GERM 1120	Elementary German II	4
GERM 2140	Intermediate German I	3
GERM 2150	Intermediate German II	3
Total Hours		10

#### World Language Proficiency in Japanese

Code	Title	Hours
JAPN 1120	Elementary Japanese II	4
JAPN 2140	Intermediate Japanese I	3
JAPN 2150	Intermediate Japanese II	3
Total Hours		10

#### World Language Proficiency in Spanish

Code	Title	Hours
SPAN 1120	Elementary Spanish II	4
SPAN 2140	Intermediate Spanish I	3
SPAN 2150	Intermediate Spanish II	3
Total Hours		10

## Minor in Applied German

### Minor in World Languages and Cultures

A minimum of 22 hours is required for the minor in German and Japanese. A minor in Spanish requires 21-22 hours. All course work must be in the same language and at the 3000 level or higher. A minimum of 18 hours is required for the minors in Arabic, General French, and Applied French.

Students wishing to receive a minor in World Languages and Cultures have the responsibility, in consultation with the advisor in their major, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should make sure that the minor in World Languages and Cultures is an approved program within their college.

Candidates for the minor in World Languages and Cultures must have their course work verified and approved by a World Languages and Cultures Department advisor or that department's chairperson at the time they make formal application for graduation. A form for this verification can be obtained from the college or department office.

Courses required for either the major or minor may not be taken P/NC; however, up to 12 hours of P/NC course work may be included in the related area.

Code	Title	Hours
<b>Required Courses</b>		
GERM 3010	Conversation And Composition I	3
GERM 3020	Conversation And Composition II	3
Select one of the following:		3
GERM 3410	Survey Of German Civilization I	
GERM 3420	Survey Of German Civilization II	
GERM 4200	German Culture And Civilization	
GERM 4980	Special Topics In German Studies (as applicable)	
GERM 3170	Business German	3
or GERM 3180 Scientific And Technical German		
GERM 4010	German Syntax And Stylistics I	3
GERM 4020	Advanced Conversation And Composition II - WAC	4
<b>Electives</b>		
Select 3 hours		3
Total Hours		22

## Minor in Arabic

### Minor in World Languages and Cultures

A minimum of 22 hours is required for the minor in German and Japanese. A minor in Spanish requires 21-22 hours. All course work must be in the same language and at the 3000 level or higher. A minimum of 18 hours is required for the minors in Arabic, General French, and Applied French.

Students wishing to receive a minor in World Languages and Cultures have the responsibility, in consultation with the advisor in their major, to see that the necessary course work is included in the total number of



undergraduate courses taken. Students outside the College of Arts and Letters should make sure that the minor in World Languages and Cultures is an approved program within their college.

Candidates for the minor in World Languages and Cultures must have their course work verified and approved by a World Languages and Cultures Department advisor or that department's chairperson at the time they make formal application for graduation. A form for this verification can be obtained from the college or department office.

Courses required for either the major or minor may not be taken P/NC; however, up to 12 hours of P/NC course work may be included in the related area.

Code	Title	Hours
<b>Required Courses</b>		
ARBC 2140	Intermediate Arabic I	3
ARBC 2150	Intermediate Arabic II	3
ARBC 3010	Conversation and Composition I	3
ARBC 3020	Conversation and Composition II	3
<b>Electives</b>		
Select 6 hours of 3000-4000 level courses		6
Total Hours		18

## Minor in French

### Minor in World Languages and Cultures

A minimum of 22 hours is required for the minor in German and Japanese. A minor in Spanish requires 21-22 hours. All course work must be in the same language and at the 3000 level or higher. A minimum of 18 hours is required for the minors in Arabic, General French, and Applied French.

Students wishing to receive a minor in World Languages and Cultures have the responsibility, in consultation with the advisor in their major, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should make sure that the minor in World Languages and Cultures is an approved program within their college.

Candidates for the minor in World Languages and Cultures must have their course work verified and approved by a World Languages and Cultures Department advisor or that department's chairperson at the time they make formal application for graduation. A form for this verification can be obtained from the college or department office.

Courses required for either the major or minor may not be taken P/NC; however, up to 12 hours of P/NC course work may be included in the related area.

### General and Applied French Minor

A minimum of 18 hours is required for the Minor in French. FREN 2140 and FREN 2150 may be included as electives.

Code	Title	Hours
<b>Required Courses</b>		
FREN 3010	Conversation And Composition I	3

FREN 3020	Conversation And Composition II	3
<b>Electives</b>		
Select 12 hours		12
Total Hours		18

## Minor in General German

### Minor in World Languages and Cultures

A minimum of 22 hours is required for the minor in German and Japanese. A minor in Spanish requires 21-22 hours. All course work must be in the same language and at the 3000 level or higher. A minimum of 18 hours is required for the minors in Arabic, General French, and Applied French.

Students wishing to receive a minor in World Languages and Cultures have the responsibility, in consultation with the advisor in their major, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should make sure that the minor in World Languages and Cultures is an approved program within their college.

Candidates for the minor in World Languages and Cultures must have their course work verified and approved by a World Languages and Cultures Department advisor or that department's chairperson at the time they make formal application for graduation. A form for this verification can be obtained from the college or department office.

Courses required for either the major or minor may not be taken P/NC; however, up to 12 hours of P/NC course work may be included in the related area.

Code	Title	Hours
<b>Required Courses</b>		
GERM 3010	Conversation And Composition I	3
GERM 3020	Conversation And Composition II	3
Select one of the following:		3
GERM 3200	Survey Of German Literature	
GERM 3410	Survey Of German Civilization I	
GERM 3420	Survey Of German Civilization II	
GERM 4010	German Syntax And Stylistics I	3
GERM 4020	Advanced Conversation And Composition II - WAC	4
<b>Electives</b>		
Select 6 hours		6
Total Hours		22

## Minor in Japanese

### Minor in World Languages and Cultures

A minimum of 22 hours is required for the minor in German and Japanese. A minor in Spanish requires 21-22 hours. All course work must be in the same language and at the 3000 level or higher. A minimum of 18 hours is required for the minors in Arabic, General French, and Applied French.

Students wishing to receive a minor in World Languages and Cultures have the responsibility, in consultation with the advisor in their major, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should make sure that the minor in World Languages and Cultures is an approved program within their college.

Candidates for the minor in World Languages and Cultures must have their course work verified and approved by a World Languages and Cultures Department advisor or that department's chairperson at the time they make formal application for graduation. A form for this verification can be obtained from the college or department office.

Courses required for either the major or minor may not be taken P/NC; however, up to 12 hours of P/NC course work may be included in the related area.

Code	Title	Hours
<b>Required Courses</b>		
JAPN 3010	Conversation And Composition I	3
JAPN 3020	Conversation And Composition II	3
JAPN 4010	Japanese Syntax And Stylistics I	3
JAPN 4020	Japanese Syntax And Stylistics II	4
<b>Electives</b>		
Select 9 hours		9
Total Hours		22

## Minor in Spanish

### Minor in World Languages and Cultures

A minimum of 22 hours is required for the minor in German and Japanese. A minor in Spanish requires 21-22 hours. All course work must be in the same language and at the 3000 level or higher. A minimum of 18 hours is required for the minors in Arabic, General French, and Applied French.

Students wishing to receive a minor in World Languages and Cultures have the responsibility, in consultation with the advisor in their major, to see that the necessary course work is included in the total number of undergraduate courses taken. Students outside the College of Arts and Letters should make sure that the minor in World Languages and Cultures is an approved program within their college.

Candidates for the minor in World Languages and Cultures must have their course work verified and approved by a World Languages and Cultures Department advisor or that department's chairperson at the time they make formal application for graduation. A form for this verification can be obtained from the college or department office.

Courses required for either the major or minor may not be taken P/NC; however, up to 12 hours of P/NC course work may be included in the related area.

Code	Title	Hours
<b>Required Courses</b>		
SPAN 3000	Spanish Grammar	3
SPAN 3010	Conversation And Composition I	3

SPAN 3020	Conversation And Composition II	3
Select one of the following:		3
SPAN 3210	Survey Of Spanish Literature I	
SPAN 3220	Survey Of Spanish Literature II	
SPAN 3270	Survey Of Latin American Literature I	
SPAN 3280	Survey Of Latin American Literature II	
SPAN 3410	Spanish Culture And Civilization	3
or SPAN 3420	Latin American Civilization	
SPAN 4010	Syntax And Stylistics	4
<b>Electives</b>		
Select 3-4 hours		3-4
Total Hours		22-23

## Interdisciplinary Majors and Minors Degrees Offered

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  - Minor in Africana Studies (p. 167)
- Asian Studies Program (p. 167)
  - B.A. in Asian Studies (p. 167)
- Disability Studies Program (p. 169)
  - B.A. in Disability Studies (p. 171)
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- Interdisciplinary Minors (p. 173)
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  - Middle East Studies Minor (p. 181)
- Urban Studies (p. 181)
  - B.A. in Urban Studies (p. 181)
- General Studies (p. 182)

### AFST 1100 Introduction To Africana Studies

[3 credit hours]

Introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to the African Diaspora (Africa, Caribbean and the Americas - South, Central and North, especially the USA.)

**Term Offered:** Spring, Summer, Fall  
Multicultural US Diversity

**AFST 1110 African Civilization**

[3 credit hours]

General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.

Core Arts & Humanities, Multicultural Non-US Diversity

**AFST 1200 Introduction To The African Experience**

[3 credit hours]

Introduction to the African experience through case studies of critical historical experiences: origin of humanity, origin of civilization, empire and traditional society.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**AFST 2100 Foundations Of Black Intellectual History**

[3 credit hours]

An examination of slavery and colonialism in the intellectual history of the African Diaspora, especially in the work of W.E.B. Dubois, C.L.R. James and Kwame Nkrumah.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

**Term Offered:** Spring

Multicultural US Diversity

**AFST 2200 Foundation Of Culture In The African Diaspora**

[3 credit hours]

Examination of culture in the African Diaspora by focusing on continuities and discontinuities in music and dance, material culture, language and folklore and the cultural practices of everyday life.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

Multicultural Non-US Diversity

**AFST 2220 History Of Jazz**

[3 credit hours]

A study of the development of jazz styles including listening skills and historical perspectives. Because the major innovations and stylistic interpretations of jazz are a result of African Americans, the course includes a study of how their culture influenced the development of jazz. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

**AFST 2300 Black Community Research Methods**

[3 credit hours]

Survey of basic social research methods and studies focusing on the Black community. Class conducts research on Black community of Toledo. Offered as companion to AFST 2400. Topics change each year. Course can be taken twice.

**Prerequisites:** AFST 1100 with a minimum grade of D-

**Term Offered:** Fall

**AFST 2660 Politics In Africa**

[3 credit hours]

The character and development of African political institutions and processes with a special emphasis on patterns in the post-independence period and prospects for the future.

**AFST 3250 African-American History To 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.

**Term Offered:** Fall

Multicultural US Diversity

**AFST 3260 African-American History From 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States since 1865.

**Term Offered:** Spring

Multicultural US Diversity

**AFST 3500 Environmental Inequalities & Opportunities**

[3 credit hours]

Explores environmental inequality along racial, ethnic, class and national lines. Applies diverse perspectives on the environment to explain, predict and correct environmental inequality in America and throughout the world.

**Term Offered:** Spring

**AFST 3600 Entrepreneurship and the Black Community**

[3 credit hours]

Explores the gap between entrepreneurial aspirations and the actual entrepreneurial enterprises in the black community. Examines the subject in a socio/historical context. Diverse sociological perspectives, methodologies and analyses are employed. Student would need 3 hours of Soci-Science or 3 hours of AFST.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**AFST 3700 African Women & the Environment**

[3 credit hours]

Overview of empirical evidence and interpretive models of African women with reference to environment. Specific topics: African women managing natural resources; implications of climate change in Africa; ecology and feminism. Student will need 3 hours of Soci-Science or 3 hours of AFST.

**Term Offered:** Spring, Fall

**AFST 3800 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall

**AFST 3850 Political Institutions and Grassroots Politics**

[3 credit hours]

Using a hybrid of professional experience and relevant literature, the instructor will educate students about macro and micro levels of political engagement. The course is taught by a seasoned politician, professional policy formulator, and/or experienced grassroots organizer who synergizes grassroots politics with mainstream political institutions to effect positive social change.

**AFST 3900 Perspectives on African American Education**

[3 credit hours]

Covers the history and cultural heritage of African Americans and an in-depth knowledge of experiences of African American student populations in preparation for a variety of career fields, including education, social work, criminal justice, business, nursing, and other professions. Examines key debates and policy proposals to better understand current issues impacting African American student populations. U.S. Diversity

**Term Offered:** Spring, Fall

Multicultural US Diversity

**AFST 4650 African American Writers Before The 20th Century**

[3 credit hours]

A survey of African-American prose, poetry, drama and fiction from 1760 to 1915. Recommended: ENGL 2700, 2800, or 3790.

**Term Offered:** Fall

Multicultural US Diversity

**AFST 4660 African American Literature In The 20th Century**

[3 credit hours]

Study of the literary achievement of major African-American writers beginning with DuBois and ending with Gwendolyn Brooks and Ed Bullins. Recommended: ENGL 2700, 2800, or 3790.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**AFST 4800 Social Change in Developing Nations**

[3 credit hours]

The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

**Term Offered:** Fall

Multicultural Non-US Diversity

**AFST 4900 Senior Seminar**

[3 credit hours]

General theoretical synthesis of the field focusing on a close reading of a recent biographical work of intellectual history, a recent work of cultural criticism and a recent work of social analysis.

**Term Offered:** Spring, Summer, Fall**AFST 4910 Directed Research**

[1-6 credit hours]

Student selected research topic under the supervision of faculty member and the Director of Africana Studies. Permission to enroll is contingent on a written proposal by the student being accepted by the two sponsoring faculty.

**Term Offered:** Spring, Summer**AFST 4920 Directed Readings**

[1-6 credit hours]

For advanced students wishing to read a specialized literature in the field. Requires a written proposal approved by faculty and Director of the Program.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

**AFST 4980 Special Topics In Africana Studies**

[3 credit hours]

Discussion of a substantial issue in scholarly research or public discourse relative to the African Diaspora. May be repeated for different issues. Maximum number of hours for AFST 4980 should not exceed 9 semester hours.

**Term Offered:** Spring, Summer, Fall**ASST 2100 Introduction to Asian Studies**

[3 credit hours]

Introduction to Asian studies will introduce students to important facet of Asian countries including their culture, historical and modern, social and economic systems. Students will learn the cultural bases of Asian countries or regions. The course will be an integral part of the education of those majoring or minoring in Asian Studies.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ASST 3010 Topic in Asian Studies**

[3 credit hours]

The course covers various topics in Asian Studies, from some specific topics such as Buddhism to the general area of Asian culture. the particular topic may vary depending on the areas of the instructor and the academic interest of the students. It can also serve various topics offered in the study-abroad program.

**Term Offered:** Spring, Summer, Fall**ASST 4910 Directed Research**

[1-4 credit hours]

Directed research on a specific topic in Asian Studies. The topic will vary on the instructor and the interest of student in the field.

**Term Offered:** Spring, Summer, Fall**ASST 4920 Directed Readings**

[1-4 credit hours]

Directed readings in Asian Studies of various natures or special topics in Asian Studies. The topic may vary depending on the areas of the instructor and the academic interest of the students.

**ASST 4980 Selected Topics in Asian Studies**

[3 credit hours]

This course examines various fields with the focus on selected academic topics and substantial Asian Studies. Topics may vary depending on the instructor. May be repeated for different topics.

**Term Offered:** Spring**DST 2020 Introduction to Disability Studies**

[3 credit hours]

An overview of the emergence of disability rights in the U.S. with an emphasis on the independent living movement, disability history, culture and representation in mass media. (Not for credit in the minor).

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**DST 2410 Introduction to Deaf Studies**

[3 credit hours]

Introduces students to Deaf culture and history, varieties within deaf experiences, and contemporary issues shaping the lives of those with hearing impairments. Recommended: DST 2020.

**DST 2980 SPECIAL TOPICS IN DISABILITY STUDIES**

[3 credit hours]

Special topics in Disability Studies. Topics vary by instructor; may be repeated for credit.

**Term Offered:** Fall

**DST 3030 Disability Culture**

[3 credit hours]

An interdisciplinary exploration of the history and culture of disability, including the issues of stigmatizing and stereotyping, communication barriers and breakthroughs, educational segregation and mainstreaming and the experience of "passing."

**Prerequisites:** ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**DST 3060 U.S. Disability History**

[3 credit hours]

This course provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States of America. We will consider how major historical forces such as capitalism, industrialization, colonialism, and democratic ideals have impacted and been shaped by people with disabilities.

**Term Offered:** Spring, Fall

**DST 3090 Disability in American Literature**

[3 credit hours]

Disability In American Literature addresses a wide range of contemporary literary productions, including novels, graphic novels, plays, short stories, poetry, memoir, and personal essays, connecting these productions to an American literary genealogy and recognizing the deployment and resistance to ableism in American Literature. At the course's conclusion, students will be able to understand how literature interacts with cultural stereotypes, ultimately understanding how literature can be utilized for disability justice and social change.

**Term Offered:** Spring, Summer

**DST 3100 Disability and Chronic Illness**

[3 credit hours]

This course investigates the relationship between chronic illness and disability, asking questions such as: Is chronic illness itself a disability? Does chronic illness cause disability? How do the social and medical models of disability affect our understanding of chronic illness? The course uses interdisciplinary texts (investigative journalism, memoir and literary nonfiction, philosophy, history, political science) to interrogate causes, treatments, cures and non-cures for people living with chronic illness.

**Term Offered:** Spring

**DST 3250 Disability and Life Narratives**

[3 credit hours]

This course will examine a diverse selection of disability life narratives and consider what they reveal about disability and the dominant culture.

**Term Offered:** Fall

**DST 3700 Disability and Communication**

[3 credit hours]

In this course we will explore several key communication aspects of disability in society. We will examine the rhetoric of disability, including the ways disability is conceptualized and talked about as well as the growth of disability movements; communication technology and disability; mass media and disability, including the ways the media portray people with disabilities and disability-related issues; and a number of other topics, including interpersonal communication issues around disability.

**Term Offered:** Spring, Fall

**DST 3980 Special Topics in Disability Studies**

[3 credit hours]

Special topics in Disability Studies. Topics vary by instructor, may be repeated for credit.

**Term Offered:** Spring, Summer, Fall

**DST 4000 Global Issues in Disability Studies**

[3 credit hours]

Special focus will be on global and contemporary issues as they arise in changing political and social environments. Geopolitical area of focus may vary based instructor expertise.

**Term Offered:** Fall

**DST 4100 Disability and Sexuality**

[3 credit hours]

Utilizing a cultural studies approach, this course investigates complex questions of how someone becomes understood as abnormal in contemporary culture. The course looks at the disability justice and LGBTQA+ justice; trans studies and disability studies; public health and private rights. The course uses interdisciplinary texts including memoir and life writing, philosophy, history, public health and sexuality studies to address questions central to disability justice and lived experience.

**Term Offered:** Spring, Fall

**DST 4200 Crip Arts, Crip Culture**

[3 credit hours]

This course explores disability art across media and considers its relationships both with disability culture and with the culture-at-large.

**Term Offered:** Spring

**DST 4300 Disability and Children's Literature - WAC**

[3 credit hours]

Disabled characters and disability themes abound in texts presented to young readers. This course explores the use of disabled characters in a variety of nonfiction and fiction for young through young-adult readers.

**Term Offered:** Spring, Fall

**DST 4400 Gender and Disability**

[3 credit hours]

This course examines gender and disability from both theoretical and lived perspectives, particularly as intersecting with other structures of power such as race, nationality, sexuality, and rights. Recommended: DST 2020, DST 3020.

**Term Offered:** Spring



**DST 4500 Asylums, Prisons and Total Institutions**

[3 credit hours]

This course is an important additional to our curriculum that builds on the research focuses of both Dr. Ben-Moshe and other campus scholars. Institutionalization has been a major factor in the daily experiences and understandings of disability in U.S. culture.

**Term Offered:** Fall**DST 4640 Disability Law and Human Right**

[3 credit hours]

Explores the intersections between disability rights and human rights by examining the development, the ideological framework, and the legal contexts of disability law in the U.S. and global contexts. Recommended: DST 2020, 3020, 3030, or 3060.

**Term Offered:** Spring, Fall**DST 4800 Autism and Culture**

[3 credit hours]

This course examines the ongoing construction of autism and the autism spectrum, exploring the many controversies around this remarkable range of human conditions.

**Term Offered:** Spring, Summer**DST 4890 Disability Studies Research And Methodologies**

[3 credit hours]

An interdisciplinary exploration and review of research issues and methodologies suited to the study of disability.

**Prerequisites:** DST 2020 with a minimum grade of D-**Term Offered:** Spring, Fall**DST 4940 Internship In Disability Studies**

[3 credit hours]

This course is a service learning model internship with on-campus and/or community agencies addressing disability studies issues. Sites must be approved by the instructor.

**Prerequisites:** DST 2020 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**DST 4950 Independent Study**

[1-4 credit hours]

Students engage in independent research projects with the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall**DST 4960 Honors Thesis and Capstone Project**

[1-4 credit hours]

Independent study projects for students seeking departmental honors.

**Term Offered:** Spring, Summer, Fall**DST 4980 Special Topics in Disability Studies**

[3 credit hours]

This course allows Disability Studies minors to take disability studies-related courses for DST credit.

**Term Offered:** Spring, Fall**DST 4990 Capstone in Disability Studies**

[3 credit hours]

Provides students with an opportunity to engage with professionals and professors in a seminar format for the intensive study of a topic related to Disability Studies. The focus of the seminar will change from year to year.

**Prerequisites:** DST 2020 with a minimum grade of D-**Term Offered:** Spring, Fall**GLST 2000 Principles Of Global Studies**

[3 credit hours]

A multidisciplinary exploration of the world. Global processes will be examined using many viewpoints, such as culture, politics, economics, geography and philosophy.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**GLST 2980 Topics In Global Studies**

[3 credit hours]

An exploration of a specific global issue. Approaches will be explicitly multidisciplinary and will make use of a variety of perspectives. May be repeated for credit.

**GLST 4900 Senior Seminar In Global Studies**

[3 credit hours]

Theories and research methods in global studies will be examined. A major component of the course will be a research project on some aspect of global studies.

**Prerequisites:** GLST 2000 with a minimum grade of D-**Term Offered:** Spring, Summer**GLST 4960 Honors Thesis In Global Studies**

[3 credit hours]

Supervised research and writing for honors students only. May be taken twice for credit.

**Prerequisites:** GLST 2000 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**GLST 4980 Advanced Topics In Global Studies**

[3 credit hours]

An advanced multidisciplinary exploration of a specific issue in global studies. May be repeated for credit.

**Term Offered:** Fall**LST 2010 Law And Social Thought**

[3 credit hours]

This course examines the function and force of law in society in an interdisciplinary context. Students are given the opportunity to think about law in relationship to society, morality, politics, language, history and power. Readings may include perspectives from philosophy, literature, psychology, sociology, history, anthropology and opinions of the court.

**Term Offered:** Spring, Fall**LST 2030 Cultural Geography**

[3 credit hours]

A learning-through-writing course. Systematic applications of the concept of cultural to geographic themes: culture areas, cultural landscapes, culture history, cultural ecology and cultural diversity.

**Term Offered:** Spring

Multicultural Non-US Diversity

**LST 2500 Proseminar I**

[1 credit hour]

For sophomore and junior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-**Term Offered:** Spring, Fall

**LST 2640 Race, Class, And Gender**

[3 credit hours]

Introduction to the study of race, class and gender as factors in American satisfaction.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

**LST 2700 Principles of Political Theory - WAC**

[3 credit hours]

This course investigates core concepts in the history of political theory such as justice, liberty, and equality. We discuss how and why the influence of certain authors and ideas persists. Contemporary issues are interpreted using these authors and ideas in order to strengthen critical thinking skills and broaden students' thinking about politics.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**LST 2800 Cultural Anthropology**

[3 credit hours]

Introduction to culture patterns and processes and their relationship to human society and language.

**Term Offered:** Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

**LST 2980 Special Topics**

[3 credit hours]

Special topics in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 3050 Economics Of Gender**

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportion of female headed households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**LST 3060 U.S. Disability History**

[3 credit hours]

This course provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States of America. We will consider how major historical forces such as capitalism, industrialization, colonialism, and democratic ideals have impacted and been shaped by people with disabilities.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 3070 Economics And Law**

[3 credit hours]

Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law, Common Law Process; Economics of Crime and Punishment.

**LST 3080 Economics Of Crime**

[3 credit hours]

Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

**Term Offered:** Spring, Fall

**LST 3180 Mass Communication Law**

[4 credit hours]

Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

**Term Offered:** Spring, Fall

**LST 3270 Campaign and Elections**

[3 credit hours]

In this course, we examine how citizens participate in electoral politics. Topics covered throughout the semester include candidate recruitment, voting behavior, interest groups, campaign finance, and the impact of how technologies on party mobilization.

**LST 3500 Proseminar II**

[1 credit hour]

For Junior and Senior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring

**LST 3510 Constitutional Law I**

[3 credit hours]

The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

**Prerequisites:** PSC 1200 with a minimum grade of D-

**Term Offered:** Fall

**LST 3520 Constitutional Law II**

[3 credit hours]

The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

**Prerequisites:** PSC 1200 with a minimum grade of D-

**Term Offered:** Spring, Fall

**LST 3550 Principles Of Law**

[3 credit hours]

An overview of law, legal procedures and the legal professions.

**Term Offered:** Spring, Summer, Fall

**LST 3710 Psychology And The Law**

[3 credit hours]

Emphasizes the utilization of theoretical and empirical notions of psychological science as they apply to both civil and criminal law.

**LST 3720 Philosophy Of Law**

[3 credit hours]

A study of philosophical issues raised by law such as the relation of law to morality, obligation to obey the law, paternalism, censorship and free speech.

**LST 3750 Social And Political Philosophy**

[3 credit hours]

A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.

**Term Offered:** Fall**LST 3760 Crime And Punishment**

[3 credit hours]

A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

**Term Offered:** Fall**LST 3770 Art and Disease - WAC**

[3 credit hours]

This WAC course considers how objects of material culture (film, photography, painting, sculpture, etc.) have intersected with disease while studying disease-related texts and histories of contagion (e.g., AIDS).

Web-assisted course.

**Prerequisites:** LST 2010 with a minimum grade of D-**LST 3800 Sexual Politics**

[3 credit hours]

This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

**Term Offered:** Spring, Fall**LST 3810 Political Geography**

[3 credit hours]

An examination of geopolitical and geostrategic issues at the nation-state and international level.

**Term Offered:** Spring, Fall**LST 3820 Contemporary Political Ideas**

[3 credit hours]

Surveys trends in 20th century political and social thought, including critical theory, post-structuralist theory, feminism and anti-racist politics. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity politics.

**Term Offered:** Spring**LST 3840 Visual Construction of Gender - WAC**

[3 credit hours]

This WAC course focuses on the ways in which images reflect and shape our understanding of gender. Students learn to analyze visual material to identify and articulate their cultural significance in relation to gender.

Web-assisted course.

**Prerequisites:** LST 2010 with a minimum grade of D-**LST 3860 Gender And Geography**

[3 credit hours]

Traces the development and institutionalization of gender roles and how these influence spatial decisions and the formation of perceptual landscapes.

**LST 3980 Special Topics**

[3 credit hours]

Special topics relating to issues in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**LST 4000 Global Issues in Disability Studies**

[3 credit hours]

Special focus will be on global and contemporary issues as they arise in changing political and social environments. Geopolitical area of focus may vary based on instructor expertise.

**Prerequisites:** LST 2010 with a minimum grade of D-**LST 4170 Law And Society**

[3 credit hours]

Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

**LST 4490 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

**LST 4530 Civil Rights**

[3 credit hours]

A study of judicial policy-making and administrative implementation of decisions affecting racial issues, freedom of expressions, national security and criminal procedures.

**LST 4550 Issues In Contemporary Law**

[3 credit hours]

Examination of contemporary approaches to the analyses of law and the judicial system with special focus on current issues facing the courts.

**Term Offered:** Spring, Fall**LST 4570 Legal Issues**

[3 credit hours]

Topics may include abortion, three strikes sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.

**LST 4580 International Law**

[3 credit hours]

An examination of the legal status of nation states and dependencies and the rules concerning international diplomacy, treatment of persons and peaceful settlement of disputes.

**LST 4590 Law, Policy, And The Politics of Sexuality**

[3 credit hours]

This course explores law, policymaking, and public attitudes that affect gay, lesbian, bisexual and transgendered individuals in the U.S. Topics include hate crimes legislation, discrimination law, and same-sex marriage.

**Term Offered:** Spring**LST 4640 Disability Law and Human Right**

[3 credit hours]

Explores the intersections between disability rights and human rights by examining the development, the ideological framework, and the legal contexts of disability law in the U.S. and global contexts.

**Prerequisites:** LST 2010 with a minimum grade of D-**LST 4710 Criminology**

[3 credit hours]

Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

**Term Offered:** Summer

**LST 4740 Issues In Crime**

[3 credit hours]

Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

**LST 4770 Human Rights**

[3 credit hours]

What are human rights? How are human rights created? Why do states protect or repress human rights? This class answers these questions by examining both the theoretical and empirical contributions to the study of human rights from the social sciences and law. In addition, human rights best (and worst) practices are considered.

**LST 4820 Anthropology Of Religion**

[3 credit hours]

A cross-cultural approach to the description and aliases of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.

Multicultural Non-US Diversity

**LST 4830 Theory Of Public History**

[3 credit hours]

The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

**LST 4840 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4900 Seminar In Law And Social Thought**

[3 credit hours]

Advanced seminar for the interdisciplinary study of law in society. Topics vary by instructor, may be repeated for credit. Required of LST majors.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4940 Field Experience**

[1-6 credit hours]

Community work, internship, or field study relating to law and society. May be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4980 Special Topics**

[3 credit hours]

Advanced seminar in Law and Social Thought. Topics vary by instructor, may be repeated for credit. Required of LST majors.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4990 Capstone in Law and Social Thought**

[3 credit hours]

The Capstone course in Law and Social Thought is an interdisciplinary, collaboratively taught seminar thematically organized around a topic in the study of law.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## Africana Studies Program

### Interdisciplinary Major

Angela M. Siner, Director and Advisor

The program seeks to promote greater understanding and improvement of socio-economic life in the black community, nationally and globally. Africana studies undergraduates take classes across disciplines. This is an excellent program for students who are intellectually curious and passionate about social justice.

## Degrees Offered

- B.A. in Africana Studies (p. 166)
- Minor in Africana Studies (p. 167)

**AFST 1100 Introduction To Africana Studies**

[3 credit hours]

Introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to the African Diaspora (Africa, Caribbean and the Americas - South, Central and North, especially the USA.)

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**AFST 1110 African Civilization**

[3 credit hours]

General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.

Core Arts & Humanities, Multicultural Non-US Diversity

**AFST 1200 Introduction To The African Experience**

[3 credit hours]

Introduction to the African experience through case studies of critical historical experiences: origin of humanity, origin of civilization, empire and traditional society.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**AFST 2100 Foundations Of Black Intellectual History**

[3 credit hours]

An examination of slavery and colonialism in the intellectual history of the African Diaspora, especially in the work of W.E.B. Dubois, C.L.R. James and Kwame Nkrumah.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

**Term Offered:** Spring

Multicultural US Diversity

**AFST 2200 Foundation Of Culture In The African Diaspora**

[3 credit hours]

Examination of culture in the African Diaspora by focusing on continuities and discontinuities in music and dance, material culture, language and folklore and the cultural practices of everyday life.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

Multicultural Non-US Diversity

**AFST 2220 History Of Jazz**

[3 credit hours]

A study of the development of jazz styles including listening skills and historical perspectives. Because the major innovations and stylistic interpretations of jazz are a result of African Americans, the course includes a study of how their culture influenced the development of jazz. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

Core Arts &amp; Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

**AFST 2300 Black Community Research Methods**

[3 credit hours]

Survey of basic social research methods and studies focusing on the Black community. Class conducts research on Black community of Toledo. Offered as companion to AFST 2400. Topics change each year. Course can be taken twice.

**Prerequisites:** AFST 1100 with a minimum grade of D-**Term Offered:** Fall**AFST 2660 Politics In Africa**

[3 credit hours]

The character and development of African political institutions and processes with a special emphasis on patterns in the post-independence period and prospects for the future.

**AFST 3250 African-American History To 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.

**Term Offered:** Fall

Multicultural US Diversity

**AFST 3260 African-American History From 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States since 1865.

**Term Offered:** Spring

Multicultural US Diversity

**AFST 3500 Environmental Inequalities & Opportunities**

[3 credit hours]

Explores environmental inequality along racial, ethnic, class and national lines. Applies diverse perspectives on the environment to explain, predict and correct environmental inequality in America and throughout the world.

**Term Offered:** Spring**AFST 3600 Entrepreneurship and the Black Community**

[3 credit hours]

Explores the gap between entrepreneurial aspirations and the actual entrepreneurial enterprises in the black community. Examines the subject in a socio'historical context. Diverse sociological perspectives, methodologies and analyses are employed. Student would need 3 hours of Soci-Science or 3 hours of AFST.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**AFST 3700 African Women & the Environment**

[3 credit hours]

Overview of empirical evidence and interpretive models of African women with reference to environment. Specific topics: African women managing natural resources; implications of climate change in Africa; ecology and feminism. Student will need 3 hours of Soci-Science or 3 hours of AFST.

**Term Offered:** Spring, Fall**AFST 3800 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall**AFST 3850 Political Institutions and Grassroots Politics**

[3 credit hours]

Using a hybrid of professional experience and relevant literature, the instructor will educate students about macro and micro levels of political engagement. The course is taught by a seasoned politician, professional policy formulator, and/or experienced grassroots organizer who synergizes grassroots politics with mainstream political institutions to effect positive social change.

**AFST 3900 Perspectives on African American Education**

[3 credit hours]

Covers the history and cultural heritage of African Americans and an in-depth knowledge of experiences of African American student populations in preparation for a variety of career fields, including education, social work, criminal justice, business, nursing, and other professions. Examines key debates and policy proposals to better understand current issues impacting African American student populations. U.S. Diversity

**Term Offered:** Spring, Fall

Multicultural US Diversity

**AFST 4650 African American Writers Before The 20th Century**

[3 credit hours]

A survey of African-American prose, poetry, drama and fiction from 1760 to 1915. Recommended: ENGL 2700, 2800, or 3790.

**Term Offered:** Fall

Multicultural US Diversity

**AFST 4660 African American Literature In The 20th Century**

[3 credit hours]

Study of the literary achievement of major African-American writers beginning with DuBois and ending with Gwendolyn Brooks and Ed Bullins. Recommended: ENGL 2700, 2800, or 3790.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**AFST 4800 Social Change in Developing Nations**

[3 credit hours]

The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

**Term Offered:** Fall

Multicultural Non-US Diversity



**AFST 4900 Senior Seminar**

[3 credit hours]

General theoretical synthesis of the field focusing on a close reading of a recent biographical work of intellectual history, a recent work of cultural criticism and a recent work of social analysis.

**Term Offered:** Spring, Summer, Fall**AFST 4910 Directed Research**

[1-6 credit hours]

Student selected research topic under the supervision of faculty member and the Director of Africana Studies. Permission to enroll is contingent on a written proposal by the student being accepted by the two sponsoring faculty.

**Term Offered:** Spring, Summer**AFST 4920 Directed Readings**

[1-6 credit hours]

For advanced students wishing to read a specialized literature in the field. Requires a written proposal approved by faculty and Director of the Program.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

**AFST 4980 Special Topics In Africana Studies**

[3 credit hours]

Discussion of a substantial issue in scholarly research or public discourse relative to the African Diaspora. May be repeated for different issues. Maximum number of hours for AFST 4980 should not exceed 9 semester hours.

**Term Offered:** Spring, Summer, Fall

## Honors in Africana Studies

Majors in Africana Studies are strongly encouraged to pursue program honors. In order to earn program honors, the student must:

1. Have a minimum AFST GPA of 3.3 and a minimum cumulative GPA of 3.0.
2. Submit two papers from different, advanced AFST courses to Program Director. These courses will also satisfy the AFST elective or upper division seminar requirements.
3. Write a thesis or complete a service-learning project under the direction of an AFST-affiliated faculty member. Students must enroll in Honors Thesis in AFST. Participation in the University Honors College is not required for those seeking program honors.
4. Honors Thesis AFST (3 hours) will count as an elective course in the required courses for the major.

## B.A. in Africana Studies

A major in Africana Studies consists of a minimum of 33 hours of coursework, 15 required hours of Africana Studies and an additional 18 elective hours, at least 15 of which must be at the 3000/4000 level. Students can choose from the following subjects to fulfill the 15 required hours of the Africana Studies major.

Code	Title	Hours
<b>Required Courses</b>		
AFST 1100	Introduction To Africana Studies	3
AFST 1200	Introduction To The African Experience	3

or AFST 2100	Foundations Of Black Intellectual History	
AFST 2300	Black Community Research Methods	3
AFST 3500	Environmental Inequalities & Opportunities	3
or AFST 3600	Entrepreneurship and the Black Community	
AFST 4900	Senior Seminar	3

**Course Work in Related Disciplines**

Select 18 elective hours	18
<b>Total Hours</b>	<b>33</b>

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
AFST 1100	Introduction To Africana Studies	3
Natural Sciences Core		3
Natural Science Core (Lab)		1
Elementary Foreign Language I		4
<b>Hours</b>		<b>15</b>

**Second Term**

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
HIST 1010-HIST 1200	Arts/Humanities Core (History)	3
MATH 1180	Reasoning With Mathematics	3
Elementary Foreign Language II		4
Natural Sciences Core		3
<b>Hours</b>		<b>16</b>

**Third Term**

AFST 1200	Introduction To The African Experience	3
or AFST 2100	or Foundations Of Black Intellectual History	
Arts/Humanities Core (Fine Art)		3
Social Sciences Core		3
Intermediate Foreign Language I or culture course		3
Elective		3
<b>Hours</b>		<b>15</b>

**Fourth Term**

AFST 2300	Black Community Research Methods	3
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Intermediate Foreign Language II or culture course		3
Social Sciences Core		3
Arts/Humanities Core		3
<b>Hours</b>		<b>15</b>

**Fifth Term**

AFST 3500	Environmental Inequalities & Opportunities	3
or AFST 3600	or Entrepreneurship and the Black Community	
AFST Major Elective		3
Related or Minor course		3

Elective	6
Hours	15
<b>Sixth Term</b>	
AFST 3000-AFST Major Elective (WAC) 4000	3
AFST 3000-AFST Major Elective 4000	3
Related or Minor course	6
Elective	3
Hours	15
<b>Seventh Term</b>	
AFST 4920 Directed Readings	3
AFST 3000-AFST Major Elective 4000	3
AFST 3000-AFST Major Elective 4000	3
Related or Minor course	3
Elective (WAC)	3
Elective	3
Hours	18
<b>Eighth Term</b>	
AFST 4900 Senior Seminar	3
AFST 4910 Directed Research	3
AFST 3000-AFST Major Elective 4000	3
AFST3000-AFST Major Elective 4000	3
Elective	3
Hours	15
Total Hours	124

## Minor in Africana Studies

To earn a minor in African studies, students must complete a total of 21 hours of course work in Africana studies: 9 hours of required courses in Africana Studies, and an additional 12 hours of advanced courses at the 3000/4000 level in Africana Studies.

Code	Title	Hours
<b>Required Courses</b>		
AFST 1100	Introduction To Africana Studies	3
AFST 1200	Introduction To The African Experience	3
or AFST 2100	Foundations Of Black Intellectual History	
AFST 2300	Black Community Research Methods	3
<b>Advance Courses</b>		
With the approval of the program adviser, select a minimum of 12 hours of coursework at the 3000/4000 level in Africana Studies		12
Total Hours		21

## Asian Studies Program Interdisciplinary Major

An Chung Cheng, Director and Adviser

### Degrees Offered

- B.A. in Asian Studies (p. 167)

#### ASST 2100 Introduction to Asian Studies

[3 credit hours]

Introduction to Asian studies will introduce students to important facet of Asian countries including their culture, historical and modern, social and economic systems. Students will learn the cultural bases of Asian countries or regions. The course will be an integral part of the education of those majoring or minoring in Asian Studies.

**Term Offered:** Spring, Fall  
Multicultural Non-US Diversity

#### ASST 3010 Topic in Asian Studies

[3 credit hours]

The course covers various topics in Asian Studies, from some specific topics such as Buddhism to the general area of Asian culture. the particular topic may vary depending on the areas of the instructor and the academic interest of the students. It can also serve various topics offered in the study-abroad program.

**Term Offered:** Spring, Summer, Fall

#### ASST 4910 Directed Research

[1-4 credit hours]

Directed research on a specific topic in Asian Studies. The topic will vary on the instructor and the interest of student in the field.

**Term Offered:** Spring, Summer, Fall

#### ASST 4920 Directed Readings

[1-4 credit hours]

Directed readings in Asian Studies of various natures or special topics in Asian Studies. The topic may vary depending on the areas of the instructor and the academic interest of the students.

#### ASST 4980 Selected Topics in Asian Studies

[3 credit hours]

This course examines various fields with the focus on selected academic topics and substantial Asian Studies. Topics may vary depending on the instructor. May be repeated for different topics.

**Term Offered:** Spring

## B.A. in Asian Studies

This program is designed to provide the student with a comprehensive and systematic training in Asian affairs for a liberal education and career preparation. Emphasis is placed on political science, economics, history, geography, etc. In addition to academic courses, activities in the Institute for Asian Studies conducted through the Center for International Studies and Programs include lectures, seminars, and study abroad programs in Asia as well as selected exchanges in the region.

In addition to the general education requirements of the University of Toledo and the College of Arts and Letters, students will take 30 hours in Asian Studies selected from (but not limited to) the list of courses below. Students must select courses from a minimum of three different

departments; no more than 15 hours of course work from one department will count toward the Asian Studies major.

Code	Title	Hours
<b>Major Courses</b>		
Select 30 hours of the following:		30
ASST 2100	Introduction to Asian Studies	
ASST 3010	Topic in Asian Studies	
ASST 4910	Directed Research	
ASST 4920	Directed Readings	
ASST 4980	Selected Topics in Asian Studies	
ARTH 2100	Asian Art	
ARTH 3250	Topics In Asian Art	
ECON 3500	Comparative Economic Systems	
GEPL 3120	Geography Of Asia	
HIST 2700	Japan And World War II	
HIST 2710	Postwar Japan	
HIST 2720	History Of Tokyo	
HIST 2730	The Chinese Revolution	
HIST 4720	Modern Chinese History	
HIST 4740	Modern Japanese History	
HIST 4750	Europe And Asia: Exploration And Exchange, 1415-1800	
PHIL 3500	Eastern Thought	
PSC 4900	Politics of Asia	
All Japanese and Chinese courses above the 2000 level		
Total Hours		30

With the approval of the adviser, a maximum of six elective hours may be chosen from independent study courses offered by various departments (other than ASST 4910 and ASST 4920). This general distributive pattern is designed to encourage the student to examine the various aspects of Asian Studies. Asian Studies majors are encouraged to take Japanese, (or Chinese or other Asian languages, if offered) for their foreign language requirement.

In addition to the 30 hours in the major, students are required to take 18 hours in related courses in humanities, social sciences, natural sciences, business, law and other areas chosen in consultation with the adviser. Under special circumstances, certain courses in other colleges may be used to satisfy the related requirement.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
ASST 2100	Introduction to Asian Studies	3
JAPN 1110 or CHIN 1110	Elementary Japanese I or Elementary Chinese I	4

Social Sciences Core	3
Hours	17

**Second Term**

JAPN 1120 or CHIN 1120	Elementary Japanese II or Elementary Chinese II	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
HIST 1070	The Contemporary World	3
ARTH 2100	Asian Art (Non-US Diversity)	3
Natural Sciences Core		3
Hours		16

**Third Term**

HIST 2700 or HIST 2710	Japan And World War II or Postwar Japan	3
HIST 2730	The Chinese Revolution	3
JAPN 2140 or CHIN 2140	Intermediate Japanese I (or approved culture course) or Intermediate Chinese I	3
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Hours		16

**Fourth Term**

JAPN 2150 or CHIN 2150	Intermediate Japanese II (or approved culture course) or Intermediate Chinese II	3
GEPL 2030	Cultural Geography (WAC)	3
CHIN 1090	Chinese Culture	3
Social Sciences Core		3
Arts/Humanities Core		3
Hours		15

**Fifth Term**

ASST 3010	Topic in Asian Studies	3
GEPL 3120	Geography Of Asia	3
BUAD 2080	Global Environment Of Business	3
Major Elective		3
Elective		3
Hours		15

**Sixth Term**

PHIL 3500	Eastern Thought	3
GEPL 3120	Geography Of Asia	3
ECON 3500	Comparative Economic Systems	3
Related or Minor course		3
Elective		3
Hours		15

**Seventh Term**

HIST 4720/4740	Modern Chinese History	3
ASST 4920	Directed Readings	3
Major Elective		3
Elective		3

Diversity of U.S.	3
Hours	15
<b>Eighth Term</b>	
ASST 4910 Directed Research	3
ASST 4980 Selected Topics in Asian Studies	3
Related or Minor course	3
Elective	6
Hours	15
Total Hours	124

## Disability Studies Program

### Interdisciplinary Program

Kim Nielsen, Program director, Professor, and Advisor

Degrees Offered: Disability Studies offers a program for a bachelor of arts.

#### BA to MBA program

Students interested in completing both the BA in Disability Studies and an MBA in 5 years should meet with the Director of Disability Studies in their first year. Students admitted into this program complete their BA in Disability Studies with a minor in Business by the end of their 7<sup>th</sup> semester, and complete the MBA in three additional semesters.

## Degrees Offered

- B.A. in Disability Studies (p. 171)
- Disability Studies Minor (p. 172)

#### DST 2020 Introduction to Disability Studies

[3 credit hours]

An overview of the emergence of disability rights in the U.S. with an emphasis on the independent living movement, disability history, culture and representation in mass media. (Not for credit in the minor).

**Term Offered:** Spring, Summer, Fall  
Multicultural US Diversity

#### DST 2410 Introduction to Deaf Studies

[3 credit hours]

Introduces students to Deaf culture and history, varieties within deaf experiences, and contemporary issues shaping the lives of those with hearing impairments. Recommended: DST 2020.

#### DST 2980 SPECIAL TOPICS IN DISABILITY STUDIES

[3 credit hours]

Special topics in Disability Studies. Topics vary by instructor; may be repeated for credit.

**Term Offered:** Fall

#### DST 3030 Disability Culture

[3 credit hours]

An interdisciplinary exploration of the history and culture of disability, including the issues of stigmatizing and stereotyping, communication barriers and breakthroughs, educational segregation and mainstreaming and the experience of "passing."

**Prerequisites:** ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall  
Core Arts & Humanities

#### DST 3060 U.S. Disability History

[3 credit hours]

This course provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States of America. We will consider how major historical forces such as capitalism, industrialization, colonialism, and democratic ideals have impacted and been shaped by people with disabilities.

**Term Offered:** Spring, Fall

#### DST 3090 Disability in American Literature

[3 credit hours]

Disability In American Literature addresses a wide range of contemporary literary productions, including novels, graphic novels, plays, short stories, poetry, memoir, and personal essays, connecting these productions to an American literary genealogy and recognizing the deployment and resistance to ableism in American Literature. At the course's conclusion, students will be able to understand how literature interacts with cultural stereotypes, ultimately understanding how literature can be utilized for disability justice and social change.

**Term Offered:** Spring, Summer

#### DST 3100 Disability and Chronic Illness

[3 credit hours]

This course investigates the relationship between chronic illness and disability, asking questions such as: Is chronic illness itself a disability? Does chronic illness cause disability? How do the social and medical models of disability affect our understanding of chronic illness? The course uses interdisciplinary texts (investigative journalism, memoir and literary nonfiction, philosophy, history, political science) to interrogate causes, treatments, cures and non-cures for people living with chronic illness.

**Term Offered:** Spring

#### DST 3250 Disability and Life Narratives

[3 credit hours]

This course will examine a diverse selection of disability life narratives and consider what they reveal about disability and the dominant culture.

**Term Offered:** Fall

#### DST 3700 Disability and Communication

[3 credit hours]

In this course we will explore several key communication aspects of disability in society. We will examine the rhetoric of disability, including the ways disability is conceptualized and talked about as well as the growth of disability movements; communication technology and disability; mass media and disability, including the ways the media portray people with disabilities and disability-related issues; and a number of other topics, including interpersonal communication issues around disability.

**Term Offered:** Spring, Fall

**DST 3980 Special Topics in Disability Studies**

[3 credit hours]

Special topics in Disability Studies. Topics vary by instructor, may be repeated for credit.

**Term Offered:** Spring, Summer, Fall

**DST 4000 Global Issues in Disability Studies**

[3 credit hours]

Special focus will be on global and contemporary issues as they arise in changing political and social environments. Geopolitical area of focus may vary based instructor expertise.

**Term Offered:** Fall

**DST 4100 Disability and Sexuality**

[3 credit hours]

Utilizing a cultural studies approach, this course investigates complex questions of how someone becomes understood as abnormal in contemporary culture. The course looks at the disability justice and LGBTQA+ justice; trans studies and disability studies; public health and private rights. The course uses interdisciplinary texts including memoir and life writing, philosophy, history, public health and sexuality studies to address questions central to disability justice and lived experience.

**Term Offered:** Spring, Fall

**DST 4200 Crip Arts, Crip Culture**

[3 credit hours]

This course explores disability art across media and considers its relationships both with disability culture and with the culture-at-large.

**Term Offered:** Spring

**DST 4300 Disability and Children's Literature - WAC**

[3 credit hours]

Disabled characters and disability themes abound in texts presented to young readers. This course explores the use of disabled characters in a variety of nonfiction and fiction for young through young-adult readers.

**Term Offered:** Spring, Fall

**DST 4400 Gender and Disability**

[3 credit hours]

This course examines gender and disability from both theoretical and lived perspectives, particularly as intersecting with other structures of power such as race, nationality, sexuality, and rights. Recommended: DST 2020, DST 3020.

**Term Offered:** Spring

**DST 4500 Asylums, Prisons and Total Institutions**

[3 credit hours]

This course is an important additional to our curriculum that builds on the research focuses of both Dr. Ben-Moshe and other campus scholars. Institutionalization has been a major factor in the daily experiences and understandings of disability in U.S. culture.

**Term Offered:** Fall

**DST 4640 Disability Law and Human Right**

[3 credit hours]

Explores the intersections between disability rights and human rights by examining the development, the ideological framework, and the legal contexts of disability law in the U.S. and global contexts. Recommended: DST 2020, 3020, 3030, or 3060.

**Term Offered:** Spring, Fall

**DST 4800 Autism and Culture**

[3 credit hours]

This course examines the ongoing construction of autism and the autism spectrum, exploring the many controversies around this remarkable range of human conditions.

**Term Offered:** Spring, Summer

**DST 4890 Disability Studies Research And Methodologies**

[3 credit hours]

An interdisciplinary exploration and review of research issues and methodologies suited to the study of disability.

**Prerequisites:** DST 2020 with a minimum grade of D-

**Term Offered:** Spring, Fall

**DST 4940 Internship In Disability Studies**

[3 credit hours]

This course is a service learning model internship with on-campus and/or community agencies addressing disability studies issues. Sites must be approved by the instructor.

**Prerequisites:** DST 2020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**DST 4950 Independent Study**

[1-4 credit hours]

Students engage in independent research projects with the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall

**DST 4960 Honors Thesis and Capstone Project**

[1-4 credit hours]

Independent study projects for students seeking departmental honors.

**Term Offered:** Spring, Summer, Fall

**DST 4980 Special Topics in Disability Studies**

[3 credit hours]

This course allows Disability Studies minors to take disability studies-related courses for DST credit.

**Term Offered:** Spring, Fall

**DST 4990 Capstone in Disability Studies**

[3 credit hours]

Provides students with an opportunity to engage with professionals and professors in a seminar format for the intensive study of a topic related to Disability Studies. The focus of the seminar will change from year to year.

**Prerequisites:** DST 2020 with a minimum grade of D-

**Term Offered:** Spring, Fall

Qualified juniors and seniors are invited to work for the citation "honors in Disability Studies."

1. Admission: The Honors Program is open to all undergraduate Disability Studies majors whether or not they are enrolled in College Honors. Students who have shown superior ability in their freshman and sophomore years and who show promise of continuing good performance in the major should apply to the Disability Studies Program for enrollment in the DST Honors Program. Ordinarily, the student must have a minimum cumulative GPA of 3.0.
2. Requirements: To be awarded honors in Disability Studies, the student must complete a senior thesis and must take nine of the 33-hour major requirements in the honors and honors recognition courses offered by the department. Every regularly scheduled 3000- or 4000-level course can be given honors recognition by assigning readings and research in addition to the normal requirements of



the course. To remain in the program, the student ordinarily must maintain a minimum GPA of 3.3 in the major.

## B.A. in Disability Studies

The major in Disability Studies (DST) consists of a minimum of 33 credit hours.

Code	Title	Hours
<b>Required Courses</b>		
DST 2020	Introduction to Disability Studies	3
Select one of the following:		3
DST 3030	Disability Culture	
DST 3060	U.S. Disability History	
DST 3090	Disability in American Literature	
DST 4940	Internship In Disability Studies	3
DST 4990	Capstone in Disability Studies	3
<b>Electives</b>		
Select a minimum of 21 hours of the following:		21
DST 2410	Introduction to Deaf Studies	
DST 2980	SPECIAL TOPICS IN DISABILITY STUDIES	
DST 3030	Disability Culture	
DST 3060	U.S. Disability History	
DST 3090	Disability in American Literature	
DST 3250	Disability and Life Narratives	
DST 3980	Special Topics in Disability Studies	
DST 4200	Crip Arts, Crip Culture	
DST 4400	Gender and Disability	
DST 4500	Asylums, Prisons and Total Institutions	
DST 4640	Disability Law and Human Right	
DST 4800	Autism and Culture	
DST 4980	Special Topics in Disability Studies	
<b>Related Course Work</b>		
Select 18 credit hours		
The required 18 hours or related course work should be chosen according to the student's interests and objectives. Selections should be made from 2000-level and higher courses in consultation with an advisor. Completion of a minor or of a second major in any department of the university also will be accepted as a completion of the Program's related course work requirement.		
Total Hours		33

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
DST 2020	Introduction to Disability Studies	3
ENGL 1110	College Composition I	3
Elementary Foreign Language I		4
MATH 1180	Reasoning With Mathematics	3

HIST 1010-1200	Arts/Humanities Core (History)	3
Hours		17

### Second Term

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
Select one of the following:		3
DST 3030	Disability Culture	
DST 3060	U.S. Disability History	
DST 3090	Disability in American Literature	
Social Sciences Core		3
Arts/Humanities Core (Fine Art)		3
Hours		16

### Third Term

DST 3000-DST 4999	Major Elective	3
Intermediate Foreign Language I or approved culture course		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Non-US Diversity		3
Hours		16

### Fourth Term

DST 3000-DST 4999	Major Elective	3
DST 3000-DST 4999	Major Elective	3
Intermediate Foreign Language II or approved culture course		3
Natural Sciences Core		3
Social Sciences Core		3
Hours		15

### Fifth Term

DST 3000-DST 4999	Major Elective	3
DST 3000-DST 4999	Major Elective	3
Related or Minor course		6
Elective (WAC)		3
Hours		15

### Sixth Term

DST 3000-DST 4999	Major Elective	3
DST 3000-DST 4999	Major Elective	3
Related or Minor course		3
Elective 3000-4000 level		6
Hours		15

### Seventh Term

DST 4940	Internship In Disability Studies	3
Related or Minor course		6

Elective 3000-4000 level	6
Hours	15
<b>Eighth Term</b>	
DST 4990 Capstone in Disability Studies	3
Related or Minor course	6
Elective 3000-4000 level	6
Hours	15
Total Hours	124

Total hours will vary based on electives selected but must be at least 124. Note that remedial courses or repeated courses will delay graduation beyond 8 semesters.

## Disability Studies Minor

The minor in the Program of Disability Studies consists of 9 hours of required courses and at least 9 hours of upper-division electives chosen in consultation with the Disability Studies Program advisor.

Required Disability Studies Courses:

Code	Title	Hours
DST 2020	Introduction to Disability Studies	3
Select one of the following 3		3
DST 3030	Disability Culture	
DST 3060	U.S. Disability History	
DST 3090	Disability in American Literature	
Elective: Select a minimum of 12 hours:		12
DST 2410	Introduction to Deaf Studies	
DST 2980	SPECIAL TOPICS IN DISABILITY STUDIES	
DST 3030	Disability Culture	
DST 3060	U.S. Disability History	
DST 3090	Disability in American Literature	
DST 3250	Disability and Life Narratives	
DST 3700	Disability and Communication	
DST 3980	Special Topics in Disability Studies	
DST 4200	Crip Arts, Crip Culture	
DST 4400	Gender and Disability	
DST 4500	Asylums, Prisons and Total Institutions	
DST 4640	Disability Law and Human Right	
DST 4800	Autism and Culture	
DST 4890	Disability Studies Research And Methodologies	
DST 4940	Internship In Disability Studies	
DST 4980	Special Topics in Disability Studies	
Total Hours		18

## Global Studies

Jetsabe Caceres, Director

Students focus on what interests them and take courses across academic disciplines. They specialize in one geographic area and on

an international topic, such as the environment, security and peace, multicultural communication and many others.

## Degrees Offered

- B.A. in Global Studies (p. 172)

### GLST 2000 Principles Of Global Studies

[3 credit hours]

A multidisciplinary exploration of the world. Global processes will be examined using many viewpoints, such as culture, politics, economics, geography and philosophy.

**Term Offered:** Spring, Summer, Fall  
Multicultural Non-US Diversity

### GLST 2980 Topics In Global Studies

[3 credit hours]

An exploration of a specific global issue. Approaches will be explicitly multidisciplinary and will make use of a variety of perspectives. May be repeated for credit.

### GLST 4900 Senior Seminar In Global Studies

[3 credit hours]

Theories and research methods in global studies will be examined. A major component of the course will be a research project on some aspect of global studies.

**Prerequisites:** GLST 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer

### GLST 4960 Honors Thesis In Global Studies

[3 credit hours]

Supervised research and writing for honors students only. May be taken twice for credit.

**Prerequisites:** GLST 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

### GLST 4980 Advanced Topics In Global Studies

[3 credit hours]

An advanced multidisciplinary exploration of a specific issue in global studies. May be repeated for credit.

**Term Offered:** Fall

## B.A. in Global Studies

### Global Studies

#### Interdisciplinary Major

Jetsabe Caceres, Director

Elliot Adams, American Studies Advisor

Global studies is a major that allows students to study a variety of international processes in a comprehensive and multidisciplinary program of study. The curriculum is planned so that it offers students a background in global affairs in the broadest sense, as well as an opportunity to focus on one geographic area of the world and one international interest area.

### Degrees Offered:

- B.A., Global Studies
- Concentration: American Studies **NOT CURRENTLY ACCEPTING STUDENTS**

Global Studies is a major that allows students to study a variety of international processes in a comprehensive and multidisciplinary program of study. The curriculum is planned so that it offers students a background in global affairs in the broadest sense, as well as an opportunity to focus on one geographic area of the world and one international interest area.

Global Studies requires a minimum of 33 credit hours.

Code	Title	Hours
<b>Required Courses</b>		
GLST 2000	Principles Of Global Studies	3
PSC 2600	Principles of Comparative Politics	3
ANTH 2800	Cultural Anthropology	3
or ANTH 3850	Peoples Of World: An Evolutionary Approach	
ENGL 3770	World Literature And Cultures	3
GLST 4900	Senior Seminar In Global Studies	3
Select three of the following:		9
GEPL 2040	World Regional Geography	
GEPL 4160	Patterns Of World Development	
PSC 1710	Current International Problems	
PSC 2700	Principles Of International Relations	
SOC 4800	Social Change in Developing Nations	
Select two courses with a global or regional focus		6
Select one 3000-level foreign Language course		3
Total Hours		33

To earn a Global Studies degree, students must complete the requirements in all sections with a minimum of a 2.0 cumulative GPA. In addition, students must complete 18 hours of related fields courses. This may be achieved with a minor chosen in consultation with the Global Studies Advisor.

*Below is a sample plan of study for a general Global Studies Degree. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
PSC 1710	Current International Problems	3
Elementary Foreign Language I		4
GLST 2000	Principles Of Global Studies	3
Hours		17
<b>Second Term</b>		
ANTH 2800	Cultural Anthropology	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
HIST 1010-1200	Arts/Humanities Core (History)	3
Natural Sciences Core		3
Hours		16

### Third Term

GEPL 2040	World Regional Geography	3
Intermediate Foreign Language I or approved culture course		3
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Social Sciences Core		3
Arts/Humanities Core (Fine Art)		3
Hours		15

### Fourth Term

PSC 2700	Principles Of International Relations	3
Intermediate Foreign Language II or approved culture course		3
GLST Major Area Studies Elective		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Elective		3
Hours		16

### Fifth Term

SOC 4800	Social Change in Developing Nations	3
GLST Major Global Issue Elective		3
Foreign Language at 3000 level		3
GLST Major Area Studies Elective		3
Elective		3
Hours		15

### Sixth Term

GEPL 4160	Patterns Of World Development	3
GLST Major Area Studies Elective		3
Diversity of US		3
Elective		3
GLST Major Global Issue Elective		3
Hours		15

### Seventh Term

GLST Major: Area Studies Elective		3
GLST Major: Area Studies Elective		3
GLST Major: Issue Area Elective		3
Elective		6
Hours		15

### Eighth Term

GLST 4900	Senior Seminar In Global Studies	3
GLST Major: Issue Area Elective		3
Elective		9
Hours		15
Total Hours		124

## Interdisciplinary Minors

Because of the interdisciplinary nature of these minors, and because they are not associated with a major degree program, students must work with their adviser in selecting which courses to take. Courses required/ counted in the major may not also be taken for minor credit. Whenever possible, courses should be chosen from outside a student's major.

## Degrees Offered

- Minor in Data Analytics (p. 174)
- Minor in Digital Arts and Visual Communication (p. 174)
- Minor in Documentary Production and Practice (p. 174)
- Minor in Sound Production and Design (p. 175)
- Minor in Visual Effects and Animation (p. 175)

## Minor in Data Analytics in Social Science

Code	Title	Hours
Choose one:		3
SOC 3290	Social Statistics	
PSY 2100	Statistical Methods	
GEPL 4420	Quantitative Methods in Geographic Research	
Choose one:		3
SOC 3270	Social Research Methods	
PSC 3150	Research and Writing in Political Science	
PSY 3110	Research Methods In Psychology	
GEPL 4110	Geographic Information Systems	3
ECON 2810	Introduction to Econometrics	3
ECON 3300	BENEFIT-COST ANALYSIS	3
In consultation with advisor, choose one additional elective from either Sociology, Psychology, Political Science, Geography and Planning or Economics.		3
Total Hours		18

## Minor in Digital Arts and Visual Communication

**Description:** A broad range of communication design and creative problem-solving skills will prepare students to apply, and demonstrate an understanding of the visual communication design process using both traditional design skills and the latest computer software.

Code	Title	Hours
<b>Required Courses</b>		
ART 1070	Foundations of Digital Media (Art majors should replace this course with an additional elective from below)	3
Select remaining courses to total 18 credits from:		15
ART 1050	Foundations of 2D Design (2D Design)	
ART 1080	Foundations of Drawing I	
ART 2010	Graphic Design I <sup>1</sup>	
ART 2020	Graphic Design II <sup>1</sup>	
ART 2030	Introduction to Photography (Introduction/digital) <sup>1</sup>	
COMM 2150	Digital Publishing	
COMM 2300	Photojournalism	
FILM 2320	Digital Cinema Production I - WAC <sup>1</sup>	
ARTH 2980	Special Topics	

ART 3000	Photography <sup>1</sup>	
ART 3000	Photography (Intermediate) <sup>1</sup>	
ART 3010	Interactive Coding <sup>1</sup>	
COMM 3340	Visual Communication I	
COMM 3350	Graphic Communication I	
FILM 3560	Methods for the Professional Editor <sup>1</sup>	
ART 4020	Time, Motion, Space <sup>1</sup>	
COMM 4330	Integrated Media <sup>1</sup>	
COMM 4340	Visual Communication II <sup>1</sup>	
Total Hours		18

<sup>1</sup> This course has at least one pre-requisite. Contact the instructor to determine if you have acceptable alternative experience for admission into the course.

## Minor in Documentary Production and Practice

**Description:** The interdisciplinary minor in Documentary Production and Practice aims to teach students about the history and application of documentary practice so that they may have an understanding of the specific tools and techniques used in the creation of still and moving images that convey factual, scientific and personal histories.

*The College recommends that non-Art majors also take ART 1070 before beginning this minor.*

Code	Title	Hours
<b>Required Courses</b>		
FILM 2310	Film I <sup>1</sup>	3
or COMM 2160 Single Camera Production		
ART 2030	Introduction to Photography <sup>1</sup>	3
or COMM 2300 Photojournalism		
Select remaining courses to total 18 credits from: <sup>2</sup>		12
ART 2030	Introduction to Photography <sup>1</sup>	
FILM 2310	Film I <sup>1</sup>	
COMM 2160	Single Camera Production	
COMM 2300	Photojournalism	
COMM 3180	Mass Communication Law <sup>1</sup>	
FILM 3370	Documentary Film <sup>1</sup>	
FILM 3510	Cinematography and Color Grading <sup>1</sup>	
FILM 3820	Documentary Field Production <sup>1</sup>	
ART 4000	Advanced Photography <sup>1,3</sup>	
FILM 4210	Film Censorship <sup>1</sup>	
COMM 4220	Advanced Television Production <sup>1</sup>	
COMM 4250	Mass Communication History <sup>1</sup>	
Total Hours		18

<sup>1</sup> This course has at least one pre-requisite. Contact the instructor to determine if you have acceptable alternative experience for admission into the course.

<sup>2</sup> Courses should be chosen primarily from outside your major. At least 9 credits must be at the 3/4000 level.

<sup>3</sup> *Documentary Photography* or other appropriate topics chosen in consultation with Advisor.

## Minor in Sound Production and Design

**Description:** A minor in Sound Production and Design is a specialized secondary field of study for students who wish to concentrate on audio production in a variety of professional settings. This minor prepares students for careers as recording and sound engineering professionals in live performance, live television & radio broadcast, and audio post-production for film and video.

Code	Title	Hours
<b>Required Courses</b>		
COMM 2210	Audio Production I	3
THR 4400	Seminar Topics In Design	3
MUS 2260	Electronic Music	2
MUS 2270	Recording Techniques	2
Select remaining courses to total 18 credits from:		8
THR 1030	Stagecraft and Theatre Technology	
ART 1070	Foundations of Digital Media	
COMM 3210	Audio Production 2	
MUS 3260	Advanced Electronic Music	
MUS 3270	Advanced Recording Techniques	
Total Hours		18

## Minor in Visual Effects and Animation

**Description:** A minor in Visual Effects and Animation is a specialized secondary field of study for students who wish to develop techniques for motion graphics and animation concept development and production.

Code	Title	Hours
<b>Required Courses</b>		
ART 1070	Foundations of Digital Media (Art majors should replace this course with an additional elective from below)	3
FILM 4240	Genre Studies	3
Select remaining courses to total 18 credits from:		12
ART 2020	Graphic Design II <sup>1</sup>	
FILM 2310	Film I <sup>1</sup>	
FILM 2320	Digital Cinema Production I - WAC <sup>1</sup>	
ART 3010	Interactive Coding <sup>1</sup>	
COMM 3350	Graphic Communication 1	
FILM 3530	Animation and Optical Printing <sup>1</sup>	
ART 4020	Time, Motion, Space <sup>1</sup>	
Total Hours		18

<sup>1</sup> This course has at least one pre-requisite. Contact the instructor to determine if you have acceptable alternative experience for admission into the course.

## Law and Social Thought Interdisciplinary Major

Renee Heberle, Co-Director, Advisor

Jerry Van Hoy, Co-Director, Advisor

Sam Nelson, Pre-Law Advisor

Degrees Offered: Law and Social thought offers a program for a bachelor of arts.

LST's curriculum is strictly interdisciplinary. It provides students with tools for the appraisal of U.S. and other legal systems and the policies, practices and philosophies that underlie them. It encourages reflection on the values that shape citizenship in contemporary democracy. It also focuses on issues of law in relation to morality, politics, language and the arts of critical and creative thinking. LST students are given the responsibility of determining their path through LST, with hands-on advising from the co-directors, and are consulted on questions of program direction and course selection. Upper Division Seminars are selected by students in collaboration with faculty.

### Degrees Offered

- B.A. in Law and Social Thought (p. 178)
- Minor in Law and Social Thought (p. 179)

#### LST 2010 Law And Social Thought

[3 credit hours]

This course examines the function and force of law in society in an interdisciplinary context. Students are given the opportunity to think about law in relationship to society, morality, politics, language, history and power. Readings may include perspectives from philosophy, literature, psychology, sociology, history, anthropology and opinions of the court.

**Term Offered:** Spring, Fall

#### LST 2030 Cultural Geography

[3 credit hours]

A learning-through-writing course. Systematic applications of the concept of cultural to geographic themes: culture areas, cultural landscapes, culture history, cultural ecology and cultural diversity.

**Term Offered:** Spring

Multicultural Non-US Diversity

#### LST 2500 Proseminar I

[1 credit hour]

For sophomore and junior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

#### LST 2640 Race, Class, And Gender

[3 credit hours]

Introduction to the study of race, class and gender as factors in American satisfaction.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science



**LST 2700 Principles of Political Theory - WAC**

[3 credit hours]

This course investigates core concepts in the history of political theory such as justice, liberty, and equality. We discuss how and why the influence of certain authors and ideas persists. Contemporary issues are interpreted using these authors and ideas in order to strengthen critical thinking skills and broaden students' thinking about politics.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**LST 2800 Cultural Anthropology**

[3 credit hours]

Introduction to culture patterns and processes and their relationship to human society and language.

**Term Offered:** Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

**LST 2980 Special Topics**

[3 credit hours]

Special topics in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 3050 Economics Of Gender**

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportion of female headed households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**LST 3060 U.S. Disability History**

[3 credit hours]

This course provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States of America. We will consider how major historical forces such as capitalism, industrialization, colonialism, and democratic ideals have impacted and been shaped by people with disabilities.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 3070 Economics And Law**

[3 credit hours]

Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law, Common Law Process; Economics of Crime and Punishment.

**LST 3080 Economics Of Crime**

[3 credit hours]

Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

**Term Offered:** Spring, Fall

**LST 3180 Mass Communication Law**

[4 credit hours]

Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

**Term Offered:** Spring, Fall

**LST 3270 Campaign and Elections**

[3 credit hours]

In this course, we examine how citizens participate in electoral politics. Topics covered throughout the semester include candidate recruitment, voting behavior, interest groups, campaign finance, and the impact of how technologies on party mobilization.

**LST 3500 Proseminar II**

[1 credit hour]

For Junior and Senior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring

**LST 3510 Constitutional Law I**

[3 credit hours]

The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

**Prerequisites:** PSC 1200 with a minimum grade of D-

**Term Offered:** Fall

**LST 3520 Constitutional Law II**

[3 credit hours]

The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

**Prerequisites:** PSC 1200 with a minimum grade of D-

**Term Offered:** Spring, Fall

**LST 3550 Principles Of Law**

[3 credit hours]

An overview of law, legal procedures and the legal professions.

**Term Offered:** Spring, Summer, Fall

**LST 3710 Psychology And The Law**

[3 credit hours]

Emphasizes the utilization of theoretical and empirical notions of psychological science as they apply to both civil and criminal law.

**LST 3720 Philosophy Of Law**

[3 credit hours]

A study of philosophical issues raised by law such as the relation of law to morality, obligation to obey the law, paternalism, censorship and free speech.

**LST 3750 Social And Political Philosophy**

[3 credit hours]

A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.

**Term Offered:** Fall

**LST 3760 Crime And Punishment**

[3 credit hours]

A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

**Term Offered:** Fall

**LST 3770 Art and Disease - WAC**

[3 credit hours]

This WAC course considers how objects of material culture (film, photography, painting, sculpture, etc.) have intersected with disease while studying disease-related texts and histories of contagion (e.g., AIDS). Web-assisted course.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 3800 Sexual Politics**

[3 credit hours]

This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

**Term Offered:** Spring, Fall

**LST 3810 Political Geography**

[3 credit hours]

An examination of geopolitical and geostrategic issues at the nation-state and international level.

**Term Offered:** Spring, Fall

**LST 3820 Contemporary Political Ideas**

[3 credit hours]

Surveys trends in 20th century political and social thought, including critical theory, post-structuralist theory, feminism and anti-racist politics. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity politics.

**Term Offered:** Spring

**LST 3840 Visual Construction of Gender - WAC**

[3 credit hours]

This WAC course focuses on the ways in which images reflect and shape our understanding of gender. Students learn to analyze visual material to identify and articulate their cultural significance in relation to gender. Web-assisted course.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 3860 Gender And Geography**

[3 credit hours]

Traces the development and institutionalization of gender roles and how these influence spatial decisions and the formation of perceptual landscapes.

**LST 3980 Special Topics**

[3 credit hours]

Special topics relating to issues in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4000 Global Issues in Disability Studies**

[3 credit hours]

Special focus will be on global and contemporary issues as they arise in changing political and social environments. Geopolitical area of focus may vary based on instructor expertise.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4170 Law And Society**

[3 credit hours]

Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

**LST 4490 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

**LST 4530 Civil Rights**

[3 credit hours]

A study of judicial policy-making and administrative implementation of decisions affecting racial issues, freedom of expressions, national security and criminal procedures.

**LST 4550 Issues In Contemporary Law**

[3 credit hours]

Examination of contemporary approaches to the analyses of law and the judicial system with special focus on current issues facing the courts.

**Term Offered:** Spring, Fall

**LST 4570 Legal Issues**

[3 credit hours]

Topics may include abortion, three strikes sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.

**LST 4580 International Law**

[3 credit hours]

An examination of the legal status of nation states and dependencies and the rules concerning international diplomacy, treatment of persons and peaceful settlement of disputes.

**LST 4590 Law, Policy, And The Politics of Sexuality**

[3 credit hours]

This course explores law, policymaking, and public attitudes that affect gay, lesbian, bisexual and transgendered individuals in the U.S. Topics include hate crimes legislation, discrimination law, and same-sex marriage.

**Term Offered:** Spring

**LST 4640 Disability Law and Human Right**

[3 credit hours]

Explores the intersections between disability rights and human rights by examining the development, the ideological framework, and the legal contexts of disability law in the U.S. and global contexts.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4710 Criminology**

[3 credit hours]

Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

**Term Offered:** Summer

**LST 4740 Issues In Crime**

[3 credit hours]

Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

**LST 4770 Human Rights**

[3 credit hours]

What are human rights? How are human rights created? Why do states protect or repress human rights? This class answers these questions by examining both the theoretical and empirical contributions to the study of human rights from the social sciences and law. In addition, human rights best (and worst) practices are considered.

**LST 4820 Anthropology Of Religion**

[3 credit hours]

A cross-cultural approach to the description and aliases of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.

Multicultural Non-US Diversity

**LST 4830 Theory Of Public History**

[3 credit hours]

The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

**LST 4840 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4900 Seminar In Law And Social Thought**

[3 credit hours]

Advanced seminar for the interdisciplinary study of law in society. Topics vary by instructor, may be repeated for credit. Required of LST majors.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4940 Field Experience**

[1-6 credit hours]

Community work, internship, or field study relating to law and society. May be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4980 Special Topics**

[3 credit hours]

Advanced seminar in Law and Social Thought. Topics vary by instructor, may be repeated for credit. Required of LST majors.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4990 Capstone in Law and Social Thought**

[3 credit hours]

The Capstone course in Law and Social Thought is an interdisciplinary, collaboratively taught seminar thematically organized around a topic in the study of law.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

Majors in Law and Social Thought are strongly encouraged to pursue program honors. In order to earn program honors, the student must:

1. Have a minimum LST GPA of 3.4 and a minimum cumulative GPA of 3.3.

2. Submit two papers from different, advanced LST courses to the Program Directors. These courses will also satisfy the LST elective or upper division seminar requirements.
3. Write a thesis under the direction of an LST-affiliated faculty member. Students must enroll in Honors Thesis in Law and Social Thought. Participation in the University Honors College is not required for those seeking program honors.
4. Honors Thesis in Law and Social Thought (3 hours) will count as an elective course in the required courses for the major.

## B.A. in Law and Social Thought

### CONCENTRATIONS

- Women's and Gender Studies
- Disability Studies

Code	Title	Hours
<b>Requirements</b>		
LST 2010	Law And Social Thought	3
LST 2500	Proseminar I	1
LST 3500	Proseminar II	1
Select one additional credit from either: <sup>1</sup>		1
LST 2500	Proseminar I	
LST 3500	Proseminar II	
<b>LST Elective Courses/Cross-Listed Courses</b>		
Select 18 hours from one of the following Paths:		18
Path 1: Law, History, and Theory		
Path 2: Law, Difference, and Social Practices		
Path 3: Law, Institutions, and Public Policy		
Path 4: Comparative Law		
LST 4900	Seminar In Law And Social Thought (take twice)	6
LST 4990	Capstone in Law and Social Thought	3
LST 4940	Field Experience	3-6
Every LST student is required to turn in a graduation portfolio.		
Total Hours		36-39

- <sup>1</sup> Students are required to take both Proseminar I & Proseminar II. The third Proseminar credit can be fulfilled by taking either course a second time.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
LST 2010	Law And Social Thought	3
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
Elementary Foreign Language I		4
HIST 1010-1200	Arts/Humanities Core (History)	3
Hours		17

**Second Term**

LST 2500	Proseminar I	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
LST 2800	Cultural Anthropology (Social Sciences Core/Non-US Diversity)	3
	Elementary Foreign Language II	4
BIOL 1120	Survey Of Biology (Natural Sciences Core)	3
BIOL 1220	Survey Of Biology Laboratory (Natural Sciences Core - Lab)	1
	Hours	15

**Third Term**

	Intermediate Foreign Language I or approved culture course	3
PSY 1010	Principles Of Psychology	3
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
PHYS 1320	Jurassic Physics (Natural Sciences Core)	3
GEPL 2030	Cultural Geography	3
	Hours	15

**Fourth Term**

	Intermediate Foreign Language II or approved culture course	3
PHIL 1010	Introduction To Logic (Arts/Humanities Core)	3
LST 2640	Race, Class, And Gender (Social Sciences Core/Diversity of US)	3
ANTH 2100	Human Society Through Film (Social Sciences Core)	3
PHIL 3230	Modern Philosophy	3
	Hours	15

**Fifth Term**

REL 1220	World Religions (Arts/Humanities Core)	3
ECON 1010	Introduction To Economic Issues (Social Sciences Core)	3
MUS 2220	History Of Jazz (Arts/Humanities Core - Fine Arts)	3
LST 3550	Principles Of Law	3
BUAD 2080	Global Environment Of Business	3
	Hours	15

**Sixth Term**

LST 3500	Proseminar II	1
LST 3750	Social And Political Philosophy	3
LST 4900	Seminar In Law And Social Thought	3
LST 4940	Field Experience	3
COMM 4090	Mass Communication Ethics	3
ENGL 3050	Persuasive Writing	3
	Hours	16

**Seventh Term**

LST 3510	Constitutional Law I	3
LST 4900	Seminar In Law And Social Thought	3
SOCW 3070	Child Welfare I	3
COMM 3180	Mass Communication Law	3

LST Major Elective	3
Hours	15

**Eighth Term**

LST 3500 or LST 2500	Proseminar II or Proseminar I	1
LST 3520	Constitutional Law II	3
LST 4990	Capstone in Law and Social Thought	3
ECON 3070	Economics And Law	3
BANS 3060	Managerial Economics	3
WGST 3010	Issues In Women's Studies	3
	Hours	16
	Total Hours	124

## Minor in Law and Social Thought

Courses taken in the minor must come from a discipline other than the student's major discipline to ensure that the minor will provide intellectual breadth complementary to a specialized curriculum in a traditional discipline.

## Independent Study

No more than one independent study will count toward completion of the minor.

## Program of Study

The student's program of study must be approved by a program Advisor and verified before graduation.

## Field Experience

Students working toward a minor in Law and Social Thought will be invited to participate in field experience, and elective credit will be offered depending on the student's level of involvement.

Code	Title	Hours
<b>Core Requirements</b>		
LST 2010	Law And Social Thought	3
Critical Reasoning - select one:		3
COMM 3820	Persuasion Theory	
HIST 2000	Methods Seminar	
PSC 2800	Principles Of Political Theory	
PSY 2100	Statistical Methods	
SOC 3290	Social Statistics	
PHIL 3000 to 4990		
<b>Electives</b>		
Select five electives cross-listed or taught for the Law and Social Thought program: <sup>1</sup>		15
Path 1: Law, History, and Theory		
Path 2: Law, Difference, and Social Practices		
Path 3: Law, Institutions, and Public Policy		
Path 4: Comparative Law		
Total Hours		21

<sup>1</sup> At least one elective must be a law and social thought upper division seminar (LST 4900) compatible with the chosen path.

## Middle East Studies

Gaby Semaan, Adviser

Middle East Studies is a specialization within the Global Studies major. Its offerings are designed to provide students an appropriate exposure to the history, religions, cultures, and socioeconomic systems of the Middle East, and in turn, that region's relations with the rest of the world, as well as to create balanced perceptions of the various factors and phenomena in the Middle East in historical and contemporary contexts.

### Degrees Offered

Middle East Studies (p. 180)

Middle East Studies Minor (p. 181)

## Middle East Studies

Gaby Semaan, Advisor

Middle East Studies offers a bachelor of arts degree. Its offerings are designed to provide students an appropriate exposure to the history, religions, cultures, and socioeconomic systems of the Middle East, and in turn, that region's relations with the rest of the world, as well as to create balanced perceptions of the various factors and phenomena in the Middle East in historical and contemporary contexts.

The Middle East Studies program requires a total of 39 semester hours in the major with 18 related hours that must be completed in consultation with the program advisor. The following courses are a guideline for students who are interested in Middle East Studies:

Code	Title	Hours
<b>Required courses:</b>		
HIST 2040	Ancient Near East	
GEPL 4810	Political Geography	
<b>Humanities electives: Choose 18 hours</b>		<b>18</b>
ARBC 1110	Elementary Arabic I	
ARBC 1120	Elementary Arabic II	
ARBC 2140	Intermediate Arabic I	
ARBC 2150	Intermediate Arabic II	
ARBC 3010	Conversation and Composition I	
HIST 3550	History Of The Middle East Since 1500	
PHIL 3500	Eastern Thought	
PHIL 3570	Philosophy Of Religion	
REL 2310	Old Testament/Tanakh	
REL 2500	Introduction To Islam	
REL 3350	The Qur'an And Hadith	
REL 3980	Special Topics In Religious Studies	
<b>Social Science electives: Choose 15 hours <sup>1</sup></b>		<b>15</b>
ANTH 2750	World Prehistory	
ANTH 2800	Cultural Anthropology	

ECON 4510	International Economics I
PSC 2700	Principles Of International Relations
SOC 4340	Population And Society
SOC 4800	Social Change in Developing Nations
SOC 4830	Social Movements
SOC 4980	Special Topics In Sociology

### Additional Requirements

Select approximately 6 hours of related courses in consultation with the advisor. 6

Total Hours 39

<sup>1</sup> Students should take HIST 1120 toward the college's distributive Humanities requirement.

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
AR 1000	First Year Orientation	1
MATH 1180	Reasoning With Mathematics	3
Elementary Language I		4
Select Middle East Studies course with advisor		3
UT Core Social Science		3
Hours		17

<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Language II		4
ANTH 2750	World Prehistory	3
MUS 2420	Cultures And Music Of Non-Western Styles	3
Select Middle East Studies course with advisor		3
Hours		16

<b>Third Term</b>		
Intermediate Language I		3
ENGL 2710-ENGL 2800	UT Core Humanities - Literature	3
HIST 2040	Ancient Near East	3
Select Middle East Studies course with advisor		3
UT Core Natural Science		3
UT Core Natural Science Lab		1
Hours		16

<b>Fourth Term</b>		
Intermediate Language II		3
Select Middle East Studies course with advisor		3
GEPL 4810	Political Geography	3
UT Core Social Science		3
UT Core Natural Science		3
Hours		15

<b>Fifth Term</b>		
FLAN 3440	Intercultural Communication: Principles And Practice	4
Core Multicultural - Diversity of U.S. Culture		3



MES Major Social Science	3
MES Major Humanities	3
Related or minor course	3
Hours	16

**Sixth Term**

MES Major Humanities	3
MES Major Social Science	3
Related or minor course (2)	6
General Elective	3
Hours	15

**Seventh Term**

Related or minor course	3
MES Major Humanities	3
MES Major Social Science	3
General Elective	3
Multicultural Diversity of U.S. Culture	3
Hours	15

**Eighth Term**

MES Major Humanities	3
MES Major Social Science	3
Related or minor course	3
General Elective	6
Hours	15
Total Hours	125

## Middle East Studies Minor

The minor in Middle East Studies consists of 18 credits.

**Option 1:**

Code	Title	Hours
<b>Required:</b>		
MES 2400	Introduction to the Contemporary Cultures of the Middle East through Movies and Arts	3
MES 4200	Current Issues in the Middle East	3
MES 3200	The Contemporary Middle East a Historical and Modern In-Depth Overview	3
MES 3800	The Governments and Legal Systems of the Contemporary Middle East	3
2 language classes (2000 level or higher)		6
Total Hours		18

**Option 2:**

Code	Title	Hours
<b>Select two:</b>		
MES 2400	Introduction to the Contemporary Cultures of the Middle East through Movies and Arts	
MES 3200	The Contemporary Middle East a Historical and Modern In-Depth Overview	
MES 3800	The Governments and Legal Systems of the Contemporary Middle East	
MES 4200	Current Issues in the Middle East	

2 language classes (2000 level or above)	6
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**Select 6 additional credits from:**

FLAN 3440	Intercultural Communication: Principles And Practice
HIST 2040	Ancient Near East
GEPL 4810	Political Geography
PHIL 3500	Eastern Thought
REL 2310	Old Testament/Tanakh
or any courses approved by program advisor	

## Urban Studies

The goal of the urban studies program at The University of Toledo is to provide students with a broad understanding of urban issues in a global world. Students study all aspects of cities, including economic development and urban planning. The program is interdisciplinary. Undergraduates take classes in economics, geography, history, political science and sociology.

## Interdisciplinary major: Degree Offered

- B.A. in Urban Studies (p. 181)

## B.A. in Urban Studies

The Urban Studies program, totaling 45 credit hours, is an interdepartmental major with emphasis on urban-oriented courses in anthropology, Africana studies, economics, geography, history, political science, and sociology. Its purpose is to provide a broadly based educational foundation for understanding the impact and scope of urbanization so that students will be suitably educated to pursue graduate or professional academic programs or to assume positions in urban-related employment.

Code	Title	Hours
<b>URBAN STUDIES CORE: (18 hours)</b>		
ECON 1200	Principles Of Microeconomics	3
SOC 2410	Communities - Writing Across the Curriculum	3
GEPL 4110	Geographic Information Systems	3
PSC 4320	Urban Policy And Administration	3
GEPL 4710	Urban Environments	3
Select one:		3
MATH 2600	Introduction To Statistics	
PSC 3150	Research and Writing in Political Science	
SOC 3290	Social Statistics	
<b>SUB FIELD HOURS: (Select one sub field for 9 hours)</b>		9
<b>URBAN COMMUNITY DEVELOPMENT</b>		
SOC 4100	Community Organizing and Development	
SOC 4440	Methods Of Population Analysis	
SOC 4450	Exploring the City	
<b>URBAN ENVIRONMENTAL POLICY</b>		
GEPL 3900	Environmental Planning	
PSC 4340	Environmental Policy	
Consult advisor for a third course in this area		

URBAN HISTORY		
HIST 2290	Toledo: Metropolitan Era, 1880-1980	
HIST 3270	The City In American History, 1607-1850	
HIST 3280	City And Metropolis In Modern America, 1850 To The Present	
URBAN PLANNING AND ECONOMIC DEVELOPMENT		
GEPL 3650	Industrial Geography	
GEPL 4210	Land Use Planning	
GEPL 4530	Principles Of Urban Planning	
URBAN ADVOCACY		
AFST 3500	Environmental Inequalities & Opportunities	
AFST 3850	Political Institutions and Grassroots Politics	
AFST 3900	Perspectives on African American Education	
<b>RELATED HOURS: (18 Credits) To be selected in consultation with an advisor.</b>		<b>18</b>
Total Hours		45

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
First Term		
AR 1000	First Year Orientation	1
ENGL 1110	College Composition I	3
SOC 1010	Introduction To Sociology	3
MATH 1180	Reasoning With Mathematics	3
Elementary Foreign Language I		3
Arts/Humanities Core (History)		3
Hours		16
Second Term		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		3
Natural Sciences Core		3
Natural Sciences Core (Lab)		1
Urban Studies Core (2000-4000)		3
Hours		13
Third Term		
Intermediate Foreign Language I or approved culture course		3
Urban Studies Core		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Art/Humanities Core (Fine Arts)		3
Natural Sciences Core		3
Hours		15
Fourth Term		
Intermediate Foreign Language II or approved culture course		3
Elective		3
Urban Studies Core		3
Related Course		3
Non#US Diversity		3
Hours		15

Fifth Term	
Urban Studies Core	3
Urban Studies Core	3
Related course (WAC)	3
Urban Studies Core	3
Urban Studies Core	3
Hours	15
Sixth Term	
Urban Studies Core	3
Urban Studies concentration (WAC)	3
Related course	3
Elective	3
Diversity of US	3
Hours	15
Seventh Term	
Urban Studies Core	3
Related course	6
Urban Studies Concentration	3
Elective	3
Hours	15
Eighth Term	
Related course	3
Urban Studies Concentration	3
Elective	10
Hours	16
Total Hours	120

## General Studies - B.A.

### DEGREE REQUIREMENTS

The General Studies program has been established in recognition of the fact that existing majors may not satisfy the needs of all students desiring a liberal education. General Studies is an interdisciplinary program that allows students to select an area of concentration and related course work not offered in traditional majors. Students who plan to pursue graduate or professional degree programs or enter certain employment areas that require established curricular backgrounds may find it to their advantage to consider existing majors offered within the college rather than the General Studies option. The standard majors have wider acceptance and more readily identify the nature and quality of an individual's academic background. Students should declare this major before they have completed 90 hours. Students seeking admission to this program will be interviewed by an advisor in the college Student Services Office and must have sound reasons for their choice. Once accepted into the program, students must have their programs approved by the General Studies advisor.

Under this program, the University, college and core curriculum requirements specified in the Degree Requirements section of this catalog must be fulfilled, and an area of concentration in the natural sciences, social sciences or humanities must be identified for the purpose of determining education requirements. Students must take at least 64 hours of courses at the 2000 level or higher and at least 32

hours of courses at the 3000/4000 level and have earned a minimum of 124 hours to be eligible for graduation. In lieu of a major, students must take at least 16 but not more than 24 hours of course work in a single department and 26-34 hours of cognate or related course work for a total of 50 hours.

Courses used for the concentration and related areas must be courses that would count in the major in those departments.

## Pre-Law

Sam Nelson, Advisor

Unlike some pre-professional programs, there is no fixed pre-law curriculum. Critical reading, writing and speaking dominate legal practice and legal education; thus, the central theme of any pre-law course of study should be the development of these skills in the context of areas of substantive interest to the student. Clearly, a course of study designated "pre-law" may extend across a broad range of different disciplines and interests and contain a wide variety of courses. Each student's course of study will be different and should reflect, in consultation with advisors, the specific interests of the student and attention to the development of the critical and analytical skills necessary for success in law school and the legal profession.

## Faculty

### Department of Art

**Brian Carpenter**, 2014, Assistant Professor, A.A., B.A., University of Toledo, M.F.A., Cranbrook Academy of Art

**Jason Cox**, 2015, Assistant Professor, B.F.A., M.A.T., The Maryland Institute College of Art; Ph.D., The Ohio State University

**Debra Davis**, 2000, Professor, B.A., M.S. Ed., Northern Illinois University; M.F.A., University of Colorado

**Daniel Hernandez**, 2012, Associate Professor, B.F.A., Northwest Missouri State University; M. F. A., American University

**Thomas Lingeman**, 1979, Professor, B.S., Ball State University; M.F.A., Southern Illinois University of Art

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**Barbara W. F. Miner**, 2000, Professor and Chair, B.F.A., State University of New York - New Paltz; M.F.A., Eastern Michigan University

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**Mysoon Rizk**, 2000, Professor, B.A., Oberlin College; B. S., A.M., Ph.D., University of Illinois at Urbana - Champaign

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**Arturo Rodriguez**, 2001, Associate Professor, B.F.A., Kansas City Art Institute; M.F.A., Indiana University – Bloomington

**Barry Whittaker**, 2011, Associate Professor, B.F.A., University of Texas; M.F.A., University of Colorado

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## Department of Communication

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**Fatima A. Shousher Simon**, 2004, Senior Lecturer, B.A., University of Toledo; M.A., Bowling Green State University

**Sumitra Srinivasan**, 2006, Associate Professor, B.Sc., M.A., The University of Madras; M.S., Syracuse University; Ph.D., Georgia State University

## Disability Studies Program

**Allyson Day**, 2014, Assistant Professor, B.A., B.F.A., University of Maine at Framington, M.A., Simmons College, Ph.D., Ohio State University

**James Ferris**, 2008, Professor and Ability Center of Greater Toledo Endowed Chair in Disability Studies. B.A., Marquette University; M.A., University of Texas at Austin; Ph.D., Southern Illinois University at Carbondale.

**Kim E. Nielsen**, 2012, Professor and Program Director; B.A., Macalester College; M.A., Ph.D., University of Iowa

## Department of Economics

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**David C. Black**, 1990, Associate Professor and Undergraduate Advisor, B.A., M.A., Ph.D., State University of New York - Buffalo

**James Bland**, 2016, Assistant Professor, B.S., M.A., The University of Melbourne, M.S., Ph.D., Purdue University

**Larry Cook**, 2006, Associate Lecturer, B.A., M.A., The University of Toledo

**Michael R. Dowd**, 1989, Associate Professor, B.A., M.A., Ph.D., State University of New York – Buffalo

**Kevin Egan**, 2005, Associate Professor and Chair, B.A., Central College; Ph.D., Iowa State University

**Kristen Keith**, 1994, Associate Professor and Director of Strategic Business Services/Faculty Associate, Division of Finance and Administration, B.A., University of Montana; M.A., Ph.D., The Ohio State University

**Onur Sapci**, 2016, Assistant Professor, B.A., Dokuz Eylul University, Ph.D., University of Wyoming

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**Daniel Compota**, 1993, Associate Professor, A.S., Monroe County Community College; B.A., M.Ed., Ph.D., The University of Toledo

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**Jami Taylor**, 2009, Professor, B.A., M.P.A., Old Dominion University; M.L.I.S., University of North Carolina, Greensboro; Ph.D., North Carolina State University

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**Wesley A. Bullock**, 1988, Associate Professor, B.A., M.S., Ph.D., University of Oklahoma

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## Department of Sociology and Anthropology

**Shahna Arps**, 2014, Assistant Professor, B.A., Ohio University-Athens, M.A. Ph.D., Ohio State University

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**Thomas Zych**, 2015, Lecturer, B.A., University of Illinois at Urbana-Champaign, M.S., Anthropology, University of Wisconsin-Milwaukee.

## Department of Theatre and Film

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**Christopher M. Montpetit**, 2014, Lecturer, B.A., Niagara University; M.F.A., Columbia University

**Stephen Sakowski**, 2015, Associate Professor, B.F.A., Otterbein College; M.F.A., University of California San Diego

**Daniel Thobias**, 2012, Associate Professor, B.F.A., University of California, Berkley; M.F.A., North Carolina School of Arts

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## Department of Women's and Gender Studies

**Asma M. Abdel Halim**, 2004, Associate Professor, LL.B., LL.M., University of Khartoum; MAIA, Ph.D., Ohio University

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**Shara Crookston**, 2009, Assistant Professor, B.A. Arizona State University, M.A. University of Alabama, Ph.D. University of Mississippi

**Jeanne Kusina**, 2015, Associate Lecturer, B.A., Lourdes College, M.B.A., Tiffin University, M.A. University of Toledo, Ph.D., Bowling Green State University

## Department of World Languages and Cultures

**Katherine Best**, 2004, Senior Lecturer, B.S., M.A., Bowling Green State University

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**Walter Denk**, 1990, Senior Lecturer, B.S., Northwestern University, ABD, Michigan State

**Warren Dick**, 2003, Senior Lecturer, B.A., M.A., George Washington University; Ph.D., Ohio State University

**Friederike Emonds**, 1994, Associate Professor of German, M.A., Washington University; Ph.D., University of California – Davis

**Joseph Y. Hara**, 1990, Senior Lecturer, B.A., Meiji Gakain University; Th.D., Lexington Theological Seminary

**Mary L. Hoak**, 2011, Lecturer, B.A., Mercer University; M.A. (German), University of Georgia; M.A. (French), Middlebury College; Ph.D., University of Tennessee

**Michael A. Kistner**, 1994, Senior Lecturer, B.A., M.A., Bowling Green State University

**Juan Martin**, 1994, Associate Professor of Spanish, B.A., Complutense University of Madrid; M.A., Ph.D., University of Southern California

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**Kathleen Thompson-Casado**, 1993, Associate Professor of Spanish, B.A., M.A., Ph.D., The Ohio State University

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**Kasumi Yamazaki**, 2016, Assistant Professor of Japanese, B.A., M.A., Ph.D., the University of Toledo

# COLLEGE OF BUSINESS AND INNOVATION

## Undergraduate Catalog

Stranahan Hall and Savage & Associates Business Complex  
419.530.2558  
CoBusiness@UToledo.Edu

### Mission Statement

"Developing Lifelong Leaders for the World of Business."

- Preparing a diverse body of students for life-long careers as leaders and contributing professionals
- Delivering influential research and publications
- Enhancing the world of business practice and serving as a resource for regional economic development

## Contacts

### Administration

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**Information Operations Technology Management** 419.530.2420  
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**Marketing and International Business** 419.530.2098  
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## Degrees Offered

### Bachelor of Business Administration (BBA)

The Bachelor of Business Administration (BBA) undergraduate curriculum includes a broad liberal arts background, a general core of business courses, and a specific area of specialization. Students must select at least one of the thirteen areas/majors listed below.

- Accounting (p. 200)
- Digital Marketing (p. 229)
- Entrepreneurship, Family, & Small Business (p. 222)
- Finance (p. 213)
- Financial Services (p. 214)
- General Management (p. 224)
- Human Resource Management (p. 223)
- Information Systems (p. 215)
- International Business (p. 229)
- Marketing (p. 231)
- Operations & Supply Chain Management (p. 219)
- Organizational Leadership and Management (p. 225)
- Professional Sales (p. 232)

## Bachelor of Applied Organizational Technology (BAOT) (p. 197)

The Bachelor of Applied Organizational Technology (BAOT) program is a 2+2 completion degree for students with a technical associate degree. It includes a general business focus as well as general education and higher-level non-business coursework. Some students elect to include a minor from outside the college of business as part of their degree requirements. Students may also complete a business minor in addition to required courses. All transfer students must have a minimum GPA of 2.25 and have completed a technical associate degree to be accepted into the College of Business and Innovation for the bachelor of applied organizational technology. Transfer students' admission will be determined by the higher education (HEd) grade point average. The HEd GPA is based on all letter grades attained at all institutions of higher learning and uses the point average scale of "A" equaling four points.

## Associate Degree Programs

- AA Pre-Business Administration (p. 205)
- AAB Accounting Technology (p. 206)
- AAB Computer Network Administration (p. 206)
- AAB Computer Software Specialist (p. 207)
- AAB Information Services and Support (p. 208)
- AAB Programming and Software Development (p. 208)
- AAB-Business Management Technology (p. 209)
- ATS Technical Studies (p. 210) - General as well as a Graphic & Web Design option. Only one degree in Technical Studies will be awarded.

## transcripted certificate

- Digital Communication Applications Certificate (p. 211)

## Workplace Certificates – Non-Degree Granting Programs

While not an official academic designation on a transcript, these workplace certificates have credit-bearing courses which appear on an official transcript and give added value to career goals. Coursework may

also be applied to future degree programs. Review of these scenarios must be discussed with a COBI academic advisor.

If a student is not in another degree-granting program at the University of Toledo, they will need to apply to UT as a non-degree student in order to enroll in the courses. Students must meet pre-requisites to take all courses including junior standing for the Financial Planning the certificate. Post baccalaureate workplace certificates (noted below) are designed for those students who have already completed a bachelor degree of some kind.

- Accounting Technology
- Business Management Technology
- Computer Network Administration
- Computer Software Specialist
- Financial Planning
- Information Services and Support
- Programming and Software Development
- Web Design
- Digital Marketing (post baccalaureate)
- Consultative Sales (post baccalaureate)

## Accreditation

The University of Toledo College of Business and Innovation Bachelor of Business Administration (BBA) is fully accredited at the undergraduate level by The Association to Advance Collegiate Schools of Business (AACSB International). The Accounting Program has also received additional AACSB accreditation. The graduate programs are accredited by the AACSB as well.

## Admission Requirements/Policies

### General Requirements

#### Bachelor of Business Administration (BBA)

To be admitted to the Bachelor of Business Administration program (BBA) at The University of Toledo, students need:

- a minimum 2.80 cumulative high school grade point average (GPA) or
- a minimum 25 ACT composite /1150 SAT composite (older version taken prior to March 2016) or 1220 SAT composite (newer version taken March 2016 or after) or a GED average score of 510 (2002 format)/710 (2014 format).

Students who do not qualify for direct admission into the College of Business and Innovation BBA may be admitted to the Associate of Arts, AA, pre-business degree program. The AA PREB program is a 2+2 program with the Bachelor of Business Administration degree, but students may move into the BBA program any time after they have earned a 2.4 UT GPA.

#### Bachelor of Applied Organizational Technology (BAOT)

Students must have an earned technical associate degree and a minimum GPA of 2.25 to be admitted to the Bachelor of Applied Organizational Technology at The University of Toledo. Transfer students' admission will be determined by the higher education (HEd) grade point average. The HEd GPA is based on all letter grades attained at all



institutions of higher learning and uses the point average scale of "A" equaling four points.

## Associate Degree Programs

To be admitted to an associate degree program in the College of Business and Innovation at The University of Toledo, students need:

- a minimum 2.00 cumulative high school grade point average (GPA) **or**
- a minimum 18 ACT composite /870 SAT composite (older version taken prior to March 2016) or 950 composite (newer version taken after March 2016) **or**
- a passing GED average score of 480 (2002 format)/600 (2014 format).

Students who do not qualify for admission to the College of Business and Innovation will be admitted to the University of Toledo Learning Collaborative and may transfer to the College of Business and Innovation when the minimum requirements are met.

## Admission to Divisions - BBA

The qualifications for admission to the undergraduate degree program and to the upper division, the prerequisites for courses, and all other requirements apply equally to full-time, part-time and transfer students. For purposes of internal admissions, the College of Business and Innovation has the following divisions:

1. **The Lower Division** – Students admitted to the BBA enter this division upon admission to the University and to the college. In the lower division, students complete the pre-professional business and University Core/General Education Classes.
2. **The Upper Division** – Undergraduate students in the BBA apply for admittance to the upper division also known as the professional division or sequence when their earned hours plus their registered hours total at least 60 hours. In addition to the 60 hours, a student must have earned a minimum GPA of 2.25 in the following courses as well as an overall minimum GPA of 2.25. A student not meeting the overall standards but with a cumulative GPA of 2.0 upon appeal, will be reviewed by the college admission committee for admission to the upper division on an individual basis. Students may officially declare their major or area of specialization when applying to the upper division.

Code	Title	Hours
BUAD 1010	Introduction To Business	3
BUAD 1020	Micro-Computer Applications In Business	3
BUAD 2020	Information Technology Management	3
BUAD 2030	Executive Communication Essentials	3
BUAD 2040	Financial Accounting Information	3
BUAD 2050	Accounting For Business Decision-Making	3
BUAD 2060	Business Statistics	3
BUAD 2070	Business Analytics	3
BUAD 2080	Global Environment Of Business	3

Students wishing to major in accounting have additional requirements which must be met to enter this major/area of specialization. To be admitted to the accounting area of specialization and to register for ACCT 3100 students must earn a minimum GPA of 2.750 in the

introductory-level college accounting courses, including a grade of C (2.0) or higher in both BUAD 2040 and BUAD 2050 or equivalent courses, and an overall higher education minimum GPA of 2.750 in all prior college level courses. Any appeals are reviewed by the Accounting Department.

## Transfer / Change of College Admission Requirement

All transfer students must have

- a minimum GPA of 2.40 to be accepted into the College of Business and Innovation to pursue a Bachelor of Business Administration (BBA),
- a minimum GPA of 2.25 to pursue a Bachelor of Applied Organizational Technology (BAOT) and
- a minimum 2.00 GPA to pursue any associate degree in the College of Business.

Transfer students' admission will be determined by the higher education (HE) grade point average. The HE GPA is based on all letter grades attained at all institutions of higher learning and uses the point average scale of an equaling four points.

The admission of students wishing to change from another college within The University of Toledo to the College of Business and Innovation is the same as for a transfer student.

## Academic Policies

**University Policy Website** (<http://www.utoledo.edu/policies>)

## Class Rank

In the College of Business and Innovation, class rank is determined as follows:

Rank	Hours Earned
Freshman	0-29.99
Sophomore	30-59.99
Junior	60-89.99
Senior	90+

## academic advising

Students receive advising concerning their academic program from the college professional advisors located in the Office of Student Retention and Academic Success in the Savage and Associates Business Complex room 3130. Students may self-select which of the COBI advisors to work with or the office will make recommendations based on need and advisor level of expertise. Advisors are cross-trained in a variety of areas so that someone is always available to answer specific questions. Appointments and walk-in hours are available throughout the year. Students may also email general questions to the staff through [COBIadvising@utoledo.edu](mailto:COBIadvising@utoledo.edu). Degree audits (DARS) are available in the office and online through Student Self-Service through the myUT portal.

### DEGREE AUDIT REQUIREMENT (DARS)

The Degree Audit Reporting System is an automated record that contains all of a student's graduation requirements and tracks that student's progress toward meeting those requirements. Degree audits are available to students upon request from the Office of Student Retention and

Academic Success and online through the myUT portal Student Self-Service. Students are encouraged to keep current degree audits for their personal use and to discuss their degree audits with their academic advisers.

## Declaring or Changing a Major and/or Minor

Forms for declaring or changing a college major and/or minor are available in the Office of Student Retention and Academic Success or online at <http://www.utoledo.edu/business/StuServ/Forms.html>.

## Transfer / Change of College Degree Requirements

All College of Business and Innovation degree requirements are the same for students whether or not they begin at UT or transfer into a program at some point.

Transfer courses will be evaluated by the Registrar's Office in conjunction with the College of Business and Innovation and other related colleges after the student has submitted official transcripts from all colleges/universities attended and has been accepted by the university. The student must complete the evaluation process before the end of the first term of attendance at UT.

For purposes of determining the UT GPA, grades from another institution do not transfer. The GPA will be based on the course work taken while enrolled in The University of Toledo. For students transferring into the College of Business and Innovation from another college within The University of Toledo, all undergraduate hours attempted and earned, as well as the GPA, will transfer. To qualify for the Bachelor of Business Administration degree, students must fulfill all College of Business and Innovation course and grade requirements.

Transfer students should note The University of Toledo will include all course work taken at all institutions of higher education in the calculation to determine if a student will graduate with honors. All college course work taken is computed in determining eligibility for graduation with honors, although no student will be awarded a level of honors above that indicated by The University of Toledo cumulative GPA. The University of Toledo requires a minimum of 30 semester hours of standard letter-graded courses from UT in order to qualify for graduation with honors.

Students must complete at least 50% of all business courses, as well as 50% of major/area of specialization courses and 50% of business minor courses at the University of Toledo.

## Evaluation of Transfer Courses

The College of Business and Innovation Office of Student Retention and Academic Success (Student Services) assists in the evaluation of business coursework based on course equivalencies determined by the appropriate academic unit as coordinated through the Registrar's Office. In many cases, courses from other universities/colleges have been pre-approved for equivalency and will transfer with confirmation. Equivalent courses from AACSB-accredited schools automatically transfer. When automatic transfer does not exist for any of the CORE Business courses, it may be possible for a student to obtain course equivalency by petitioning to take a proficiency exam to validate the

credit. Students should provide a course syllabus and/or any additional documentation with the petition. Students should contact COBI Student Services for additional information. The evaluation of non-business coursework is coordinated by the Registrar's Office and completed by the appropriate corresponding college.

## Testing for Course Credit

In the College of Business and Innovation, there are two distinct areas of testing for credit related to COBI courses:

1. testing to validate transfer or native coursework that was not applied at the desired level of credit based on accreditation or other issues for credit, and
2. testing based on knowledge earned outside the classroom as defined by the university policy on credit for prior learning.

Students who have transfer or native credit that was not initially accepted for course credit or course credit at the desired level, possibly based on accreditation issues, may pursue testing for credit based on departmental approval and test availability to hopefully validate their transfer credit to the desired level. In many departments, testing for credit is only allowed for COBI CORE courses designated by a "BUAD/Business Administration" prefix. A maximum of 50% of major or minor courses as well as 50% of all business courses may be taken as transfer credit. Some departments/majors have transfer agreements in place with other Universities that set additional conditions or procedures which supersede this general college policy.

Students who feel they have significant knowledge in a COBI CORE subject area may pursue a "testing for credit" option through university procedures. COBI CORE subject areas are limited to BUAD courses and are not major specific. Courses in the AOT department are currently not subject to these limitations and are open to any testing procedures as approved by the university. Please see the Credit By Assessment Form located on the Registrar's Office website for additional information:

<http://www.utoledo.edu/offices/registrar/forms.html> **UT Policy - Credit for prior learning**

There are no fees associated with the validation of transfer course credit, but university fees do apply for other testing options. **All COBI testing procedures** are coordinated through the specific department chairs, the Office of Student Retention and Academic Success and the Dean's Office. Any test for a course may only be attempted once.

## Code of Student Academic Conduct and Student Academic Grievance Procedure

Issues related to charges of student academic misconduct or disputes as to final course grades, and the procedures for resolving such issues are set forth by the specific language of the COBI Code of Student Academic Conduct and the procedures for resolution of such issues in the COBI Student Academic Grievance Procedure. For non-College of Business course grievances and in situations where a student has exhausted COBI procedures but is not satisfied with the outcome, students are directed to the UT Grievance Procedure. COBI Procedural guidelines are located on the college's Web site at <http://www.utoledo.edu/business/COBI/COBICCD/COBIStudentResources.asp>.

UT Policy - Academic Dishonesty (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-04%20%20Academic%20dishonesty.pdf>)

UT Policy - Academic Grievance (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-05%20%20Academic%20grievance.pdf>)

## GPA Recalculation for Repeated Courses

Effective fall 2006, if a student repeats a UT course and receives a higher grade, a request to delete the original grade, as long as the original course grade was lower, can be made. Prior to fall 2006, if a student repeats a UT course and receives a grade of C (2.0) or higher, a request to delete the original grade, as long as the original course grade was a C- or lower, can be made. The request form is available in the Student Services Center. If the original grade was earned because of cheating or academic dishonesty, it will not be deleted. A maximum of 12 credit hours can be deleted by university policy. UT Policy - GPA Recalculation for repeated courses

## Residency Requirement

To earn a BBA degree from the College of Business and Innovation, a student must complete at least 50 percent of business credits from the college as well as 50 percent of their major and minor course work. The senior year (final 30 semester hours) in the baccalaureate program must be taken in residence at UT by all business students. Under certain circumstances, appeals to the senior residency rule are approved for up to 15 semester hours. For associate degrees, the final 15 semester hours or a minimum 15 semester hours must be taken in residence at the University of Toledo. UT Policy - Residency Requirement (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-10%20%20Residency%20requirement%20for%20a%20degree.pdf>)

## Additional Degrees / Course Work

While students may return to complete additional course work or degrees after an initial bachelor degree is awarded, a second BBA will not be awarded if the initial degree was also a BBA or an equivalent degree in Business.

Multiple associate degrees may be awarded, but only one ATS, Technical Studies, degree will be awarded.

## Academic Probation

When a student's cumulative GPA falls below 2.0, the student is automatically placed on probation. Students are recommended to reduce their enrolled hours and meet with an adviser to develop a plan of action to improve their GPA.

## Academic Suspension

Academic suspension means a student is not eligible to enroll in courses from The University of Toledo or any other college/university for a minimum period of one semester. A student is subject to academic suspension if he/she falls below the minimum requirements or fails to make sufficient progress toward attainment of the degree. No course work taken at any other educational institution during the student's

suspension shall be accepted as transfer credit without approval. However, students may remove incompletes while under suspension.

### UT Policy - Academic Standing/Suspension

University standards for required minimum GPA associated with attempted quality hours

- Minimum 1.00 GPA, after attempting 10-19 semester hours
- Minimum 1.50 GPA, after attempting 20-29 semester hours
- Minimum 1.70 GPA, after attempting 30-39 semester hours
- Minimum 1.80 GPA, after attempting 40-49 semester hours
- Minimum 1.90 GPA, after attempting 50-59 semester hours
- Minimum 2.00 GPA, after attempting 60 semester hours

Note: A student may be suspended if the student falls below a cumulative GPA of 2.0 for two consecutive semesters after attempting more than 60 semester hours.

## Readmission

Suspended students cannot enroll at UT for at least one semester. A suspended student must submit an appeal in writing for readmission to the College of Business and Innovation Academic Standards Committee at COBIadvising@utoledo.edu. Students suspended for a second time cannot enroll at UT for at least one year. Appeals must be received at least one month prior to the beginning of the academic term.

## Additional UT Undergraduate Academic Policies (<http://www.utoledo.edu/policies/academic/undergraduate>)

- UT Policy - Enrollment Status
- UT Policy - Academic Forgiveness
- UT Policy - Adding/Dropping a course
- UT Policy - Dual Degrees
- UT Policy - Grades and Grading
- UT Policy - Priority Registration
- UT Policy - Graduation with Honors distinction; Dean's List; President's List
- UT Policy - Missed Class Policy
- UT Policy - Confidentiality of student records (FERPA)
- UT Policy - Administrative adjustment for extenuating circumstances
- UT Policy - Veteran and service members' support and assistance

## Student Services

### Academic Advising

Students receive advising concerning their academic program from the college professional advisors located in the Office of Student Retention and Academic Success in Savage Business Complex Room 3130. Students may self-select which of the COBI advisors to work with or the office will make recommendations based on need and adviser level of expertise. Advisors are cross-trained in a variety of areas so that someone is always available to answer specific questions. Appointments and walk-in hours are available throughout the year. Students may also

email general questions to the staff through COBAdvising@utoledo.edu. Degree audits (DARS) are available in the office and online through Student Self-Service through the myUT portal.

Although advisors assist students as needed, *the final responsibility for fulfilling all degree requirements rests with the student.*

## College of Business and Innovation Honors Program

### Jesup Scott Honors College

The Jesup Scott Honors College is an opportunity for students of high ability and achievement to enrich their regular program of college work. Admission is based on grades, scores on achievement tests and an essay. The College of Business and Innovation's Honors Program is offered as part of the Jesup Scott Honors College. Students take honors courses in the Honors College, as well as in the College of Business and Innovation. Enrollment in honors courses is limited. Approximately 30 freshman students are admitted each fall to a program leading to receipt of the College of Business and Innovation honors citation upon graduation.

### Departmental Honors

Currently enrolled University of Toledo students and transfer students may apply during their last semester in the college's lower division for admission to the College of Business and Innovation departmental Honors Program if they have completed at least 45 semester hours of college work and have earned a minimum GPA of 3.3 (4.0 scale). Students are admitted to the departmental honors program on a space-available basis.

### Program Requirements

#### College of Business and Innovation College Honors Program

To be eligible for the College of Business and Innovation Honors Program citation, a student must:

1. Fulfill all requirements for an approved degree program within the college with a minimum overall GPA of 3.3.
2. Complete a minimum of 27 hours of honors courses, which must include HON 1010, HON 2010 and HON 3010 (9 hours). The additional 18 hours of Honors coursework should be selected from the business coursework from following list of courses.
3. Completion of an Honors Project or Thesis.

Code	Title	Hours
<b>Lower Division Courses</b>		
BUAD 1010	Introduction To Business (Fall Term)	3
BUAD 2040	Financial Accounting Information (Fall Term)	3
<b>Upper Division Courses</b>		
BUAD 3010	Principles Of Marketing (Fall Term)	3
BUAD 3020	Principles Of Manufacturing And Service Systems (Spring Term)	3
BUAD 3030	Managerial And Behavioral Processes In Organizations (Spring Term)	3

BUAD 3040	Principles Of Financial Management (Fall Term)	3
BUAD 4020	Senior Business Policy Forum (Fall Term)	3
Total Hours		21

### College of Business and Innovation Departmental Honors Program

To be eligible for the College of Business and Innovation departmental Honors Program citation, a student must:

1. Fulfill all requirements for an approved degree program within the college with a minimum overall GPA of 3.3.
2. Complete a minimum of 15 hours of honors courses that must include the following:

Code	Title	Hours
<b>Upper Division Courses</b>		
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 4020	Senior Business Policy Forum	3
Total Hours		15

3. Completion of an Honors Project or Thesis.

### Honors Retention Standards

The Honors College sets the Policy on retention in the program at the University.

### Study Abroad Opportunities for Business Majors

Participation in Study Abroad allows our students to gain hands-on, practical international experience for today's global marketplace. The University of Toledo has partnered with various consortia to include USAC (University Studies Abroad Consortium) ISA (International Studies Abroad) GlobalLinks Learning Abroad – AusraLearn / AsiaLearn / EuroLearn, and Semester at Sea. These partnerships allow UT students the opportunity to study at top-ranked, international universities throughout the world. Our most popular sites include: Torino Italy, Bilbao Spain, Gold Coast Australia, Shanghai China, Luneburg Germany, and Puntarenas Costa Rica.

All College of Business and Innovation students, regardless of their intended major(s), are strongly encouraged to study abroad throughout their undergraduate degree program. Study abroad programs assist students in the development of academic, intellectual, personal, professional, and cross-cultural skills. Students may choose to study abroad over a traditional fall or spring semester, over non-traditional, intensive summer sessions, or throughout the full academic year. Students typically enroll in a combination of upper-level business courses and core curricular courses (taught in English). Elementary, intermediate, and upper-level foreign language tracks are also available; multiple courses may be completed in only one semester (particular programs



determine language requirements). Foreign language proficiency prepares students for international internship opportunities.

Additionally, the College of Business and Innovation offers 10-day, faculty-led, international intensive immersion trips to Eastern Europe, Western Europe, and Asia throughout the academic year (to include summer semester). Intensive immersion opportunities vary from year to year.

COBI students will meet with the COBI Study Abroad Specialist who works in conjunction with the Director of Student Academic Success and the COBI department chairs to identify which study abroad courses will transfer into their specific degree program.

Please note that current students are also eligible to receive a free travel grant from The University of Toledo's Center for International Studies and Programs Office. For more information on any of the aforementioned programs, please contact COBI Student Services at 419.530.2087 for a referral. Please note that early preparation (first-year planning) is imperative to successful study abroad opportunities!

## Bachelor of Business Administration (B.B.A.)

The Bachelor of Business Administration (BBA) undergraduate curriculum includes a broad liberal arts background, a general core of business courses, and a specific area of specialization. During freshman and sophomore years, students take general education classes, as well as several basic business courses. During the sophomore year, students apply to the upper division of the program. During their junior year, they choose an area of specialization and begin their upper division business core. Students may choose to pursue up to two majors and minors within the College of Business and Innovation. Pursuing more than one major and minor may require more than the minimum 120 hours for the BBA degree. The College of Business currently offers the BBA in thirteen fields.

### Areas of Specialization / Majors

Students must take a minimum of 10 courses between their area of specialization/major and either a business minor, second specialization or other 3000/4000 level business electives. Courses in the area of specialization may consist of required and/or elective courses and an internship opportunity. Students should consult their degree audit for specific degree and major requirements.

Students wishing to complete 2 COBI majors may only double count up to 2 courses in their majors. While 3 majors are allowed, the DARS system cannot display 3 majors. Therefore it is a student's responsibility to notify their advisor prior to any advising appointment or questions regarding degree completion so that additional steps may be taken to access the correct information. Only one BBA will be awarded.

## Grade and Hour Requirements

In order to earn a B.B.A. degree, students must complete a minimum of 120 semester hours of course work, with a minimum cumulative 2.0 GPA on a 4.0 scale. Please note that it may take more than 120 semester hours to meet all degree requirements based on course selection and placement. All General Education/University Core, lower division and upper division requirements must be satisfied. Students must earn a minimum of a C (2.0) grade in each course in the major/

area of specialization, in the Communication requirement, and in each course in a business minor (if one is completed). The departmental chair has the prerogative of substituting an additional course in the area of specialization or minor, rather than requiring the student to repeat the course in which a grade below C was received. The student must earn a C or higher in the substituted course for it to satisfy the requirements of the specialization or minor.

## Lower Division Curricular Requirements

Students earning bachelor degrees in all colleges and programs are required to complete a minimum of 36 - 42 credit hours of courses that comprise the General Education/University Core Curriculum. The courses are distributed in the areas of English composition, humanities/fine arts, social sciences, natural sciences, mathematics and multicultural studies. Please see the general section of the University Catalog or your degree audit for more detailed information on the General Education/University Core Curriculum.

Lower Division courses that each student is required to take in the College of Business and Innovation, regardless of area of specialization, are identified below. Students must earn a minimum 2.25 GPA in the subset courses (<sup>1</sup>) to meet graduation requirements. Students must also earn a grade of "C" (2.00) or higher in their Executive Communication course.

Code	Title	Hours
BUAD 1000	Orientation For Business Students	1
BUAD 1010	Introduction To Business (or course equivalent) <sup>1</sup>	3
BUAD 1020	Micro-Computer Applications In Business (or course equivalent) <sup>1</sup>	3
BUAD 2000	Career Development I	1
BUAD 2020	Information Technology Management <sup>1</sup>	3
BUAD 2030	Executive Communication Essentials (or equivalent) <sup>1, 2</sup>	3
BUAD 2040	Financial Accounting Information (or course equivalent) <sup>1</sup>	3
BUAD 2050	Accounting For Business Decision-Making (or course equivalent) <sup>1</sup>	3
BUAD 2060	Business Statistics (or course equivalent) <sup>1</sup>	3
BUAD 2070	Business Analytics <sup>1</sup>	3
BUAD 2080	Global Environment Of Business (or course equivalent) <sup>1</sup>	3
Total Hours		29

<sup>1</sup> Students must earn a minimum 2.25 GPA in the subset courses to meet graduation requirements.

<sup>2</sup> Grade of C (2.00) or higher.

## Upper Division Curricular Requirements

All students make formal application for admission to the upper division beginning one semester prior to the semester in which they earn 60 hours.

The core junior and senior years of the curriculum consist of the following upper division business requirements, an area of specialization, and either a minor or business elective courses. Students must earn



a minimum 2.25 GPA in the subset courses <sup>(1)</sup> to meet graduation requirements. Students must also earn a grade of "C" (2.00) or higher in all major and minor courses.

Code	Title	Hours
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing <sup>1</sup>	3
BUAD 3020	Principles Of Manufacturing And Service Systems <sup>1</sup>	3
BUAD 3030	Managerial And Behavioral Processes In Organizations <sup>1</sup>	3
BUAD 3040	Principles Of Financial Management <sup>1</sup>	3
BUAD 3470	The Legal And Ethical Environment Of Business <sup>1</sup>	3
BUAD 4020	Senior Business Policy Forum <sup>1</sup>	3
Total Hours		19

<sup>1</sup> Students must earn a minimum 2.25 GPA in the subset courses to meet graduation requirements.

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Listed below is a generic sample plan of study for all BBA majors. The first two years (**pre-business/lower division requirements**) of the BBA is relatively the same for any major as all students complete the same set of core business courses and the same University core requirements.

The Bachelor of Business Administration (BBA) undergraduate curriculum includes a broad liberal arts background, a general core of business courses, and a specific area of specialization. Students must select at least one of the thirteen areas/majors listed below.

- Accounting (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-accounting/bba-accounting>)
- Digital Marketing (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-marketing-international-business/bba-digital-marketing>)
- Entrepreneurship, Family, & Small Business (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-management/bba-entrepreneurship-family-small-business>)
- Finance (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-finance/bba-finance>)
- Financial Services (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-finance/bba-financial-services>)
- General Management (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-management/bba-management>)
- Human Resource Management (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-management/bba-human-resource-management>)
- Information Systems (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-information-operations-technology/#programtext>)
- International Business (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-marketing-international-business/bba-international-business>)

- Marketing (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-marketing-international-business/bba-marketing>)
- Operations & Supply Chain Management (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-information-operations-technology/bba-operations-supply-chain-management>)
- Organizational Leadership and Management (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-management/bba-organizational-leadership-management>)
- Professional Sales (<https://catalog.utoledo.edu/undergraduate/business-innovation/department-marketing-international-business/bba-professional-sales>)

## Generic BBA Degree Requirements Beginning With MATH 1730

*Sample Full-Time Plan of Study*

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
BUAD 1010	Introduction To Business	3
ENGL 1110	College Composition I	3
MATH 1730	Calculus with Applications to Business and Finance	5
ECON 1150	Principles Of Macroeconomics	3
Hours		15
<b>Second Term</b>		
BUAD 1020	Micro-Computer Applications In Business	3
ENGL 2960	Professional and Business Writing	3
ECON 1200	Principles Of Microeconomics	3
Natural Sciences Core <sup>1</sup>		3
Natural Sciences Laboratory <sup>1</sup>		1
Arts/Humanities Core <sup>1</sup>		3
Hours		16
<b>Third Term</b>		
BUAD 2000	Career Development I	1
BUAD 2020	Information Technology Management	3
BUAD 2030	Executive Communication Essentials	3
BUAD 2040	Financial Accounting Information	3
BUAD 2060	Business Statistics	3
Natural Sciences Core <sup>1</sup>		3
Hours		16
<b>Fourth Term</b>		
BUAD 2050	Accounting For Business Decision-Making	3
BUAD 2070	Business Analytics	3
BUAD 2080	Global Environment Of Business	3
U.S. Diversity Core <sup>1</sup>		3
Social Sciences Core <sup>1</sup>		3
Hours		15

**Fifth Term**

BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 3000	Career Development II	1
Arts/Humanities Core <sup>1</sup>		3
Hours		16

**Sixth Term**

BUAD 3470	The Legal And Ethical Environment Of Business	3
Major / Area of Specialization		3
Major / Area of Specialization		3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

**Seventh Term**

Major / Area of Specialization		3
Major / Area of Specialization		3
Major / Area of Specialization		3
Core Elective		3
Non-U.S. Diversity Core <sup>1</sup>		3
Hours		15

**Eighth Term**

Major / Area of Specialization		3
Major / Area of Specialization		3
Minor/Business Elective <sup>2</sup>		3
BUAD 4020	Senior Business Policy Forum	3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University Core course work, see Degree Audit for course selections.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

Sample plans beginning with MATH 1200 or MATH 1320, possible prerequisites to Math 1730 based on placement, may be found on the COBI homepage (<http://www.utoledo.edu/business>). The MATH 1320 plan may still be completed within the minimum 120 credit hours required for the BBA. The Math 1200 plan will require a minimum 124 hours but may still easily be completed within a normal 4-year degree plan.

Requirements for areas of specialization and minors are identified by functional area in the following pages. Students in the College of Business and Innovation wishing to pursue a second area of specialization may count up to two relevant courses (6 hours) taken in their first specialization toward a second specialization. Relevance of the courses is at the discretion of the two departments. Such a program may require taking more than the minimum of 120 hours for the B.B.A. degree.

## Bachelor of Applied Organizational Technology (BAOT)

The applied organizational technology program (BAOT) is designed for students who already have a technical associate's degree. These students can complete a bachelor's degree in the equivalent of two additional years of full-time study at The University of Toledo including a business focus along with an individualized plan to meet career goals.

This program includes a general business focus as well as general education and higher level non-business coursework. Some students elect to include a minor from outside the college of business as part of their degree requirements. Students may also complete a business minor in addition to required courses. All transfer students must have a minimum GPA of 2.25 and have completed a technical associate degree to be accepted into the College of Business and Innovation for the bachelor of applied organizational technology. Transfer students' admission will be determined by the higher education (HEd) grade point average. The HEd GPA is based on all letter grades attained at all institutions of higher learning and uses the point average scale of "A" equaling four points.

## Grade and Hour Requirements

In order to earn the B.A.T. degree, students must complete a minimum of 120 hours of course work, with a minimum cumulative 2.0 GPA on a 4.0 scale. The total hours include transfer hours as well as hours completed at The University of Toledo. Requirement categories are listed below. Students must complete a minimum of 30 hours at the University of Toledo to meet senior residency requirements. Additional grade requirements are listed below. All General Education / University Core requirements must also be satisfied.

## Degree Requirements

Because each Associate Degree may contain courses that transfer in to a variety of requirements in the program, degree requirements are evaluated on an individual basis. Because of this, it is impossible to list a plan of study for the remaining requirements. Below is a listing of the overall degree requirements prior to transfer evaluations.

Code	Title	Hours
<b>1. General Education/University Core</b>		
Select a minimum 36 credit hours including the following:		36
English Composition - 6 hrs		
Core Math (excluding Statistics) - 3 hrs		
Humanities/Fine Arts - 6 hrs		
Social Science - 6 hrs		
Natural Sciences (including lab) - 7 hrs		
Multicultural:		
Diversity of U.S. - 3 hrs		
Diversity - non-U.S. - 3 hrs		
<b>2 General Business Focus</b>		
<b>A. Prerequisites</b>		
BUAD 2060	Business Statistics (or statistics equivalent)	3

BUAD 1020	Micro-Computer Applications In Business (or computing equivalent)	3
Select 18 hours <sup>1</sup>		18
<b>B. Required Foundation Course</b>		
BUAD 2040	Financial Accounting Information <sup>2,3</sup>	3
or ACTG 1040	Principles Of Financial Accounting	
<b>C. Additional Requirements</b>		
Select three courses from the following (one must be 3000 level to avoid additional course work):		9
BUAD 1010	Introduction To Business <sup>2</sup>	
BUAD 2020	Information Technology Management <sup>2</sup>	
BUAD 2030	Executive Communication Essentials <sup>2</sup>	
BUAD 2050	Accounting For Business Decision-Making <sup>2,3</sup>	
BUAD 2070	Business Analytics <sup>2,3</sup>	
BUAD 2080	Global Environment Of Business <sup>2</sup>	
BUAD 3010	Principles Of Marketing <sup>2,3</sup>	
BUAD 3020	Principles Of Manufacturing And Service Systems <sup>2,3</sup>	
BUAD 3030	Managerial And Behavioral Processes In Organizations <sup>2</sup>	
BUAD 3040	Principles Of Financial Management <sup>2,3</sup>	
BUAD 3470	The Legal And Ethical Environment Of Business <sup>2</sup>	
Select two additional courses <sup>4</sup>		6
<b>3. Upper Level Courses</b>		
Select 24 hours of upper division courses outside the College of Business and Innovation at UT. <sup>5</sup>		24
<b>4. Additional Courses <sup>6</sup></b>		
Select 18 hours		18
Total Hours		120

<sup>1</sup> Eighteen (18) hours are required beyond the prerequisite courses.

<sup>2</sup> A grade of C (2.0) or better is required.

<sup>3</sup> Prerequisites for an MBA can also be fulfilled by completing this course with a minimum grade of C (2.0).

<sup>4</sup> Select two additional courses from the eight listed above or select two courses at the 3000- or 4000- level from ACCT, FINA, INFS, MGMT, EFSB, IBUS, EBUS, OSCM, HURM, PSLS, BLAW, or MKTG to complete the additional requirements. (Prerequisites for selected courses must be fulfilled.)

<sup>5</sup> 24 hours must be taken as upper division courses (numbered 3000-4000) from a college outside the College of Business and Innovation at UT. All prerequisites must be met. Some course exceptions to meet career goals may be considered upon appeal at the Dean's Office through your academic adviser in COBI Student Services.

- 12 hours of the 24 upper level hours **must** be from the Colleges of Arts & Letters and Natural Sciences and Mathematics.
- An additional 12 hours of upper level hours must come from any college **except** the College of Business and Innovation at UT.
- Students have the opportunity to complete a minor in the Colleges of Arts & Letters and Natural Sciences and Mathematics with the proper selection of classes.

<sup>6</sup> Additional courses/credit hours may be necessary to make up the difference toward the minimum 120 hours required for the degree program.

## Additional Notes

- Approximately 60-66 hours will be transferred in from an Associate Degree. This may include some General Education core and business classes as well as technical courses. These technical courses will be at the 1000-2000 level and credit will be counted under Additional Courses.
- Students must meet with their academic adviser to create an individualized plan of study due to the fact that courses coming in from their associate degree will vary.
- This is a Bachelor degree completion 2 + 2 program. Student must have a technical associate degree completed prior to the awarding of the BAOT.
- Students are required to successfully completed 120 semester credit hours with an overall grade point average of 2.0 or higher.
- Students should consult their Degree Audit for coursework that fulfills elective course requirements in General Ed and 3000/4000 Business and non-Business Elective areas.
- Because every student may have taken a variety of courses as part of their associate degree, it would be impossible to lay out a generic plan of study.

### Requirement Areas:

- General Education Minimum 36 hrs
- General Business Focus Minimum 33 hrs
- Upper Level Course 24 hours from 3000/4000 level courses from outside the College of Business including 12 hours from the College of Arts & Letters and Natural Sciences and Mathematics.
- Remaining hours come from courses toward the original associate degree or other elective hours of the student's choice.

Consult advisor for the plan of study.

## Department of Accounting

Dr. Diana Franz, Chair

The Department of Accounting offers courses in the areas of financial accounting, management accounting, auditing, accounting systems and taxation. Completion of an accounting area of specialization leads to professional careers in public accounting, business and government and begins the preparation for the Certified Public Accountant (CPA), Certified Management Accountant (CMA) and Certified Internal Auditor (CIA) examinations.

The specialization in accounting is designed to enable students to advance more rapidly to positions of responsibility and leadership in their chosen fields. In the state of Ohio, all candidates taking the CPA exam must have completed 150 credit hours. Accounting career fields other than public accounting have not adopted the 150-hour requirement. The department of accounting offers a graduate degree that can be pursued in addition to a bachelor's degree.

**AACSB Accreditation**

The department of accounting is accredited by the Association to Advance Collegiate Schools of Business, International (AACSB). This prestigious accreditation places our department among the top 2 percent of accounting departments worldwide!

**Federation of Schools of Accountancy**

The Accounting department is a full member of the Federation of Schools of Accountancy (FSA). The FSA promotes "the development of high quality accredited programs of education for the accounting profession that lead to a graduate degree."

## Degrees Offered

- BBA in Accounting (p. 200)

**ACCT 3100 Financial Accounting and Analysis**

[3 credit hours]

This class focuses on the general purpose financial statements and the accounting information system that develops information included in those financial statements.

**Prerequisites:** (BUAD 2040 with a minimum grade of C and BUAD 2050 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**ACCT 3110 Intermediate Financial 1**

[3 credit hours]

This course covers accounting topics applicable to asset valuation, income measurement and financial statement disclosure. It concentrates on accounting for corporations and emphasizes the accounting cycle and the asset side of the balance sheet.

**Prerequisites:** ACCT 3100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**ACCT 3120 Intermediate Financial 2**

[3 credit hours]

This course concentrates on financial accounting for corporations and emphasizes the liability and stockholders' equity sections of the balance sheet, and related income statement issues.

**Prerequisites:** ACCT 3110 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**ACCT 3210 Individual Taxation**

[3 credit hours]

This class focuses on the concepts and principles applicable to the taxation of individuals.

**Prerequisites:** ACCT 3100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**ACCT 3310 Accounting Information Systems And Controls**

[3 credit hours]

This course provides an introduction to processing and reporting of accounting information. Major emphasis is placed on basic accounting information processing including accounting applications in an advanced information technology environment.

**Prerequisites:** ACCT 3100 with a minimum grade of C and BUAD 2020 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**ACCT 3320 Cost Accounting**

[3 credit hours]

Internal Reporting focuses on budgeting, product and service costing and the ability to recognize and provide management with relevant information for strategic cost management and performance evaluation.

**Prerequisites:** ACCT 3100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**ACCT 4130 Advanced Financial Accounting**

[3 credit hours]

This is the third course in the external financial reporting sequence. This course covers topics such as foreign exchange, partnerships, business consolidations and mergers.

**Prerequisites:** ACCT 3120 with a minimum grade of C and ACCT 5120 with a minimum grade of C

**Term Offered:** Spring, Fall

**ACCT 4250 Taxation of Business Entities**

[3 credit hours]

This course covers the taxation of corporations, their shareholders, and other business entities. Topics include formation of business entities, taxation of income, and tax treatment of distributions.

**Prerequisites:** ACCT 3120 with a minimum grade of C and ACCT 3210 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**ACCT 4410 Governmental And Not-For-profit Accounting**

[3 credit hours]

Principles, procedures and ethics of financial reporting for not-for-profit organizations, including state and local government. Includes the use of funds, budgets, appropriations and encumbrances as means of control.

**Prerequisites:** ACCT 3120 with a minimum grade of C

**Term Offered:** Spring, Fall

**ACCT 4420 Auditing**

[3 credit hours]

Auditing integrates financial and cost accounting, ethics, accounting theory, information systems and control structure concepts into a systematic process of obtaining, evaluating and reporting on economic events and activities.

**Prerequisites:** (ACCT 3120 with a minimum grade of C and ACCT 3310 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**ACCT 4940 Accounting Internship**

[1-3 credit hours]

The accounting internship allows superior accounting students to obtain practical training through a rigorous learning experience. This program enables students to secure a broad exposure to business operations and problems.

**Prerequisites:** ACCT 3110 with a minimum grade of B

**Term Offered:** Spring, Summer, Fall

**ACCT 4990 Independent Study: Readings And Research**

[1-3 credit hours]

The student will write a research report on an accounting topic of interest to both student and faculty adviser. The topic must not be covered in another undergraduate accounting course.

**Prerequisites:** ACCT 3120 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## BBA in Accounting

Accountants work as financial consultants who help their clients or employers find creative solutions to business problems. Accountants provide the necessary information and analysis companies need to become more effective and efficient. Accountants perform a wide range of services, requiring a broad-based skill set.

The department of accounting offers courses in the areas of financial accounting, management accounting, auditing, accounting systems and taxation. Completion of an accounting area of specialization leads to professional careers in public accounting, business and government and begins the preparation for the Certified Public Accountant (CPA), Certified Management Accountant (CMA) and Certified Internal Auditor (CIA) examinations.

The specialization in accounting is designed to enable students to advance more rapidly to positions of responsibility and leadership in their chosen fields. In the state of Ohio, all candidates taking the CPA exam must have completed 150 credit hours. Accounting career fields other than public accounting have not adopted the 150-hour requirement. Students should discuss additional CPA requirements with their Accounting faculty members.

The department of accounting offers a graduate degree, the MS in Accounting, which can be pursued after completion of the bachelor's degree.

### Areas of Specialization / Majors

Students must take a minimum of 10 courses between their area of specialization/major and either a business minor, second specialization or other 3000/4000 level business electives. Courses in the area of specialization may consist of required and/or elective courses and an internship opportunity.

Students should consult their degree audit for specific degree and major requirements. Students wishing to complete 2 COBI majors may only double count up to 2 courses in their majors. While 3 majors are allowed, the DARS system cannot display 3 majors. Therefore it is a student's responsibility to notify their adviser prior to any advising appointment or questions regarding degree completion so that additional steps may be taken to access the correct information. Only one BBA will be awarded.

No junior-level accounting courses may be attempted until a student is admitted to the upper division and the Accounting major by the College of Business and Innovation Accounting Department.

Code	Title	Hours
<b>Required Courses</b>		
ACCT 3100	Financial Accounting and Analysis <sup>1</sup>	3
ACCT 3110	Intermediate Financial 1	3
ACCT 3120	Intermediate Financial 2	3
ACCT 3210	Individual Taxation	3
ACCT 3310	Accounting Information Systems And Controls	3
ACCT 3320	Cost Accounting	3
ACCT 4420	Auditing	3
Total Hours		21

<sup>1</sup> Students wishing to register for ACCT 3100 must meet the following prerequisites:

- a GPA of 2.750 or better in all introductory level college accounting courses, including a grade of C (2.0) or higher in BUAD 2040 and BUAD 2050 or equivalent courses, and
- an overall higher education GPA of 2.750 or higher in all prior college-level courses.

A permit must be entered to allow a student to register for ACCT 3100.

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan		16
Hours		16
<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan		15
Hours		15
<b>Fifth Term</b>		
ACCT 3100	Financial Accounting and Analysis	3
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16
<b>Sixth Term</b>		
ACCT 3310	Accounting Information Systems And Controls	3
ACCT 3110	Intermediate Financial 1	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3470	The Legal And Ethical Environment Of Business (Pre-requisite: Junior Status)	3
Minor/Business Elective <sup>2</sup>		3
Hours		15
<b>Seventh Term</b>		
ACCT 3120	Intermediate Financial 2	3
ACCT 3210	Individual Taxation	3



Non-U.S. Diversity <sup>1</sup>	3
Core Elective <sup>1</sup>	3
Minor/Business Elective <sup>2</sup>	3
Hours	15
<b>Eighth Term</b>	
ACCT 3320 Cost Accounting	3
ACCT 4420 Auditing	3
BUAD 4020 Senior Business Policy Forum	3
Minor/Business Elective <sup>2</sup>	3
Hours	12
Total Hours	120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

## Department of Applied Organizational Technology

Jeffrey Ostheimer, Chair

In order to earn any associate degree, students must meet all requirements and complete a minimum of 60 semester hours of course work, with a minimum cumulative 2.0 GPA on a 4.0 scale. A minimum of 15 hours must be complete through the University of Toledo. While multiple associate degrees may be completed (with the exception of only one ATS degree), each subsequent associate degree must include a minimum 15 credit hours that were not previously used toward another degree program. All of the associate degrees are offered in a distance learning/online format. Many of the major courses are not available in-person. Please consult the Office of Student Retention and Academic Success and Fall 2018 Degree Audits for additional information.

## Degrees Offered

- AA Pre-Business Administration (p. 205)
- AAB Accounting Technology (p. 206)
- AAB Computer Network Administration (p. 206)
- AAB Computer Software Specialist (p. 207)
- AAB Information Services and Support (p. 208)
- AAB Programming and Software Development (p. 208)
- AAB-Business Management Technology (p. 209)
- ATS Technical Studies (p. 210)
- Digital Communication Application Certificate (p. 211)

### ACTG 1040 Principles Of Financial Accounting

[3 credit hours]

Basic financial accounting principles for a business enterprise. Topics include transaction analysis, preparation, interpretation and use of financial reports such as an income statement and balance sheet. Students will calculate and interpret a variety of financial ratios. Familiarity with business terms and concepts will be emphasized.

**Term Offered:** Spring, Summer, Fall

### ACTG 1050 Principles Of Management Accounting

[3 credit hours]

Management uses of accounting data for analysis, decision making, financial planning and control. Topics include understanding cost behavior, job order and activity-based costing, cost-volume profit analysis and budgeting. Emphasis on development of critical thinking skills.

**Prerequisites:** ACTG 1040 with a minimum grade of D- or BUAD 2040 with a minimum grade of D-

### ACTG 1200 QuickBooks

[3 credit hours]

This course will introduce students to QuickBooks software. Students will record financial transactions for fictional companies. Topics include creating a chart of accounts, recording customer and vendor transactions, processing payroll, and printing receipts.

**Term Offered:** Fall

### ACTG 2100 Intermediate Accounting I

[3 credit hours]

In-depth expansion of financial accounting principles and financial statement presentation. Emphasis on balance sheet accounts with particular attention applied to working capital (cash, receivables, inventory, and current liabilities) and long-term assets. Discussion of revenue recognition and internal control.

**Prerequisites:** ACTG 1040 with a minimum grade of D- or BUAD 2040 with a minimum grade of D-

**Term Offered:** Spring

### ACTG 2300 Cost Accounting

[3 credit hours]

Practice of cost accounting especially applied to manufacturing business. Includes accounting for materials, labor and overhead under job order and process cost systems, standard costing, use of the Balanced Scorecard, and quantitative tools useful in decision making.

**Prerequisites:** ACTG 1050 with a minimum grade of D- or BUAD 2050 with a minimum grade of D-

**Term Offered:** Fall

### ACTG 2310 Financial Management for Health Care

[3 credit hours]

Provides a basic foundation in both financial and management accounting and corporate finance aimed at entry level managers working in a healthcare setting. Explains the basic forms of business financing, capital decision processes, capital investment analysis, and financial statements. Introduces business terminology and explains financial issues relevant to health care providers.

**Term Offered:** Spring

### ACTG 2400 Fundamentals Of Taxation

[3 credit hours]

Consideration of the basic features of the federal income tax system. Emphasis is placed on the determination of taxable income of individuals and corporations. Also covered will be the preparation of the form 1040.

**Term Offered:** Spring

### ACTG 2630 Payroll Accounting

[1 credit hour]

This course will teach students the development and maintenance of appropriate reports, retention periods and tax filings.

**Term Offered:** Spring

**BMGT 1010 Business Principles**

[3 credit hours]

An introduction to the world of business focusing on an overview of business operations with special emphasis on management, marketing, accounting and finance.

**Term Offered:** Spring, Summer, Fall

**BMGT 1500 Workplace Communication And Presentations**

[3 credit hours]

Covers all aspects of communicating in the workplace including oral, written and group communications. Specific subjects covered include composing agendas, conducting interviews and organizing meetings. Students will learn a computer graphics program and prepare a presentation.

**Term Offered:** Spring, Summer, Fall

**BMGT 1540 Organizational Behavior**

[3 credit hours]

This course will address the impact of individual and group behavior on organizations. Topics covered include downsizing, stakeholder management, network organizations, participative management approaches and the quality movement.

**Term Offered:** Spring, Summer, Fall

**BMGT 2010 Workplace Management**

[3 credit hours]

Covers issues dealing with managing a company in a predominantly service-oriented marketplace. Topics include training employees to deal with customers/clients, creating a customer-friendly business environment, problem-solving and strategic planning.

**Term Offered:** Spring, Summer, Fall

**BMGT 2020 Human Resource Development**

[3 credit hours]

Explores the functions of Human Resource development that focus on training and employee development with special emphasis on improving the quality of work life.

**Term Offered:** Spring, Summer, Fall

**BMGT 2030 Supervision**

[3 credit hours]

Explores the role of first-line managers in organizations with special emphasis on the responsibilities of supervisors. These responsibilities include delegation, communication, problem-solving, training and leading.

**Term Offered:** Spring, Fall

**BMGT 2050 Small Business Management**

[3 credit hours]

Examines entrepreneurship with a special emphasis on formulating, developing and operating a small business.

**Term Offered:** Spring, Fall

**BMGT 2110 Managing In A Global Economy**

[3 credit hours]

Students will examine one particular industry and learn the various economic factors associated with operating a business in an international setting.

**Term Offered:** Spring, Summer, Fall

**BMGT 2310 Legal Environment Of Business**

[3 credit hours]

Carefully documents treatment of the legal framework of business. Emphasis on the international aspect of business law. Topics covered include contracts, bailments, agency relationships, legal forms of ownership and negotiable instruments.

**Term Offered:** Spring, Fall

**BMGT 2700 Managing Diversity In The Workplace**

[3 credit hours]

This course offers a conceptual framework for understanding diversity and its effects on organizational behavior. It will also provide action tools for effective management of diversity in organizations.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**BMGT 2750 Cultural Communications In The Workplace**

[3 credit hours]

Strategies taught to increase communication effectiveness among employees from differing cultural backgrounds. Students will also learn market-specific tips and taboos and develop strategies for negotiating across cultures.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**BMGT 2990 Independent Study**

[1-3 credit hours]

Students will study a management-related subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

**Term Offered:** Spring, Summer, Fall

**CMPT 1010 Computer Fundamentals**

[1 credit hour]

Introduction to computers. Topics covered are hardware, software, computer operation, terminology and applications.

**Term Offered:** Spring, Fall

**CMPT 1020 Computer Concepts**

[4 credit hours]

Introduction to computer software, hardware, and processes associated with contemporary computer systems. Topics include operating systems, user applications, e-mail, WWW, and search capabilities. Emphasis is placed on the Internet and networking.

**Term Offered:** Spring, Summer, Fall

**CMPT 1100 Microsoft Office Applications**

[3 credit hours]

Concepts and techniques of the application of Microsoft Word, Excel, Access and PowerPoint in the workplace.

**Term Offered:** Spring, Summer, Fall

**CMPT 1110 Pc Operating Systems**

[3 credit hours]

A+ certification aligned study of both command line and graphical user-based current PC operating systems. Topics include installation and upgrade, configuration, management, troubleshooting and network connectivity.

**Term Offered:** Fall

**CMPT 1120 Visual Basic Programming**

[4 credit hours]

A currently popular programming language, such as Microsoft Visual Studio, will be used to create stand-alone applications. Topics such as object-oriented coding, logical procedures and proper documentation are stressed.

**Term Offered:** Spring**CMPT 1320 Internet And The World Wide Web**

[1 credit hour]

Topics include history of the Internet, IP addressing, World Wide Web, HTML, and CSS. Students will learn the history and functionality of the Internet and create a two-page website using HTML and CSS.

**Term Offered:** Spring, Summer, Fall**CMPT 1400 Dreamweaver Web Page Development**

[3 credit hours]

Using Dreamweaver students will learn how to plan and develop a successful Web site, organize page content, format Web sites using CSS styles, produce dynamic Web pages and add animation using rich media and reusable assets and forms.

**Term Offered:** Spring, Fall**CMPT 1410 Microsoft Excel Spreadsheet Application**

[2 credit hours]

Introduces the basic features of Microsoft Excel and spreadsheet concepts to design and create accurate professional worksheets for use in business and industry. Hands-on exercises include entering data; creating formulas; professional formatting; creating charts; adding visual interest, creating, sorting, and filtering lists; creating and using templates; and working with functions. Focuses on proofing methods to ensure accuracy and critical thinking to determine what data to present and how to present it.

**Term Offered:** Spring, Summer, Fall**CMPT 1420 Microsoft Access Database Applications**

[2 credit hours]

Hands-on analysis of the use of Access in solving workplace problems with an emphasis on the entering, updating, manipulating, storing and retrieving of information.

**Term Offered:** Spring, Fall**CMPT 1430 Microsoft Word**

[2 credit hours]

Introduces the basic features of Microsoft Word and word processing concepts to create, edit, and print documents for use in business, industry, and to enhance professional documents. Hands-on exercises include creating and formatting letters, memos, and business documents; producing multi-page documents; creating headers and footers; becoming familiar with the writing/editing tools; enhancing documents with images; creating and formatting tables, and producing mail-merged letters, envelopes, and mailing labels.

**Term Offered:** Spring, Summer, Fall**CMPT 1440 Microsoft PowerPoint Presentation**

[2 credit hours]

Introduces the basic features of Microsoft PowerPoint and electronic presentation concepts to create, edit, and deliver presentations for use in business, industry, and to enhance informational presentations. Emphasis includes planning, creating, and editing presentations for delivery on a projection system, personal computer, or to run automatically on a kiosk system. Exercises include designing using themes; applying animations, sound, and transitions; using and customizing templates; and adding tables, charts and graphics for improved comprehension and clarity.

**Term Offered:** Spring, Summer, Fall**CMPT 1450 Microsoft Outlook**

[1 credit hour]

Students will learn a popular messaging and personal information management program used to send and receive e-mail and manage messages, contacts, appointments and tasks.

**Term Offered:** Spring, Fall**CMPT 1500 Flash Web Animation**

[3 credit hours]

This course offers the opportunity to learn entry-level web animation that includes frame by frame animation, animated shapes, using masks, and motion tweens. In this course you will be learning how to create animated holiday e-cards, animated short movies, and much more.

**Term Offered:** Spring, Fall**CMPT 1510 Digital Design Fundamentals**

[3 credit hours]

Theory and the practical application in working with digitally-produced documents to provide well-designed business communication pieces for print and online distribution. The basic principles of good layout/design, image creation via scanner/camera, font selection/technology, image file formats, and typography are addressed. Also the fundamentals of print technology from the desktop user's perspective with attention to image resolution, halftones/screen frequency, stock selection, bindery, job scheduling concerns, and color use and theory to prepare files for professional print production are covered.

**Prerequisites:** CMPT 1100 with a minimum grade of D-**CMPT 1520 Beginning Adobe Illustrator**

[3 credit hours]

Introduces the creation of professional vector images using Adobe Illustrator Creative Cloud. Hands-on exercises include creating logos, illustrations, brochures, and posters. Techniques studied include drawing basic shapes, creating vector paths, using the pen and pencil tools, brushes, and symbols, transforming artwork, creating patterns, gradients, blends, symbols, and creating compound paths. Additional topics covered are color theory, typography, 3D vector effects, drawing in perspective, creating illustration components for the web, and importing images.

**Term Offered:** Spring, Fall

**CMPT 1530 Beginning Adobe Photoshop**

[3 credit hours]

Introduces the creation of professional raster photos using Adobe Photoshop Creative Cloud, Camera Raw, and Bridge. Hands-on exercises include photo retouching and repairing; color painting; applying masking, layer styles, and filters; advanced compositing; designing with type; vector drawing techniques; preparing files for the Web; and using Photoshop's automation features. Additional topics covered are image resolution; file formats; color theory; ethical and copyright issues involving photo editing; and using various tools and features.

**Term Offered:** Spring, Summer, Fall**CMPT 1550 Adobe Acrobat**

[3 credit hours]

Using Adobe Acrobat DC, learn to create, edit, publish, and sign Portable Document Format (PDF) files for distribution of electronic files across Mac and Windows platforms, devices, and among different software programs. Document security, capturing scans and making them editable, creating searchable and interactive PDF forms, and improving workflow collaboration and production speed will be addressed in this hands-on, project-based course.

**CMPT 1600 Internet Design And Publishing**

[3 credit hours]

This course offers a broad overview and extensive practical experience in the design and production of Web pages. Students learn current Web design technology.

**Term Offered:** Spring, Fall**CMPT 1700 Podcasting, Vodcasting, and Blogging**

[3 credit hours]

This course offers a broad overview and extensive practical experience with blogging and social media. In this course, you will learn about designing a blog site and gain practical experience. You will also be learning about all the new social media available on the web.

**Term Offered:** Spring, Summer, Fall**CMPT 2030 C Family Programming**

[4 credit hours]

Students are introduced to the C family of programming languages. Students will write computer programs using the most up-to-date versions of this language family.

**Term Offered:** Spring, Fall**CMPT 2410 Adobe InDesign Desktop Publishing**

[3 credit hours]

Introduces the creation of professional desktop published documents using Adobe InDesign Creative Cloud, to design effective and engaging print publications, such as announcements, fliers, advertisements, and reports. Hands-on exercises include designing and modifying layouts, creating master pages and styles, importing, flowing, and editing text, importing graphics, and designing tables. Additional topics include typography and design basics, creating PDF forms, exploring the publishing cycle, printing and exporting basics, and creating ePubs.

**Term Offered:** Spring**CMPT 2430 Advanced Microsoft Word**

[2 credit hours]

Covers advanced features of Word through complex formatting techniques such as customizing paragraphs and pages; using bullets and multi-level numbering features; and formatting long documents with separate sections, headers, and footers. Hands-on exercises include proofing with spelling, grammar, and readability tools; using auto-entry and customization features; working with styles and macros; creating reference footnotes for academic papers; generating tables of content and indexes; working with, comparing, and tracking shared documents; and embedding, and linking objects.

**Prerequisites:** CMPT 1430 with a minimum grade of D-**Term Offered:** Fall**CMPT 2460 Advanced Microsoft Excel Spreadsheet**

[2 credit hours]

Covers advanced features of Excel to design and create accurate, professional worksheets using advanced functions and formulas. These include financial, logical, statistical, lookup, and database functions. Hands-on exercises include exploring the advanced features of data tables, creating complex graphs, using pivot tables; performing "what-if" data analysis, examining various scenario models, protecting and sharing workbooks, using 3-D cell references, automating with macros; and importing, exporting, and distributing data, and customizing the software to suit various needs.

**Prerequisites:** CMPT 1410 with a minimum grade of D-**Term Offered:** Spring**CMPT 2500 Help Desk Concepts**

[3 credit hours]

This course provides students with a core set of technical and communication skills. Topics include hard skills such as security, troubleshooting, working with networks and mobile devices. Personal computer hardware and operating systems and also discussed. Soft skills includes verbal and non-verbal communication, time management and active listening. After taking this course, students will be prepared for positions as a help desk specialist.

**Term Offered:** Fall**CMPT 2530 Advanced Adobe Photoshop**

[3 credit hours]

An advanced, hands-on application of Adobe Photoshop for Digital Imaging. Students capture, create, manipulate and edit images for high-end output.

**Prerequisites:** CMPT 1530 with a minimum grade of D-**Term Offered:** Spring**CMPT 2620 Web Site Maintenance**

[3 credit hours]

This course develops skills for students who will function as Web developers or project managers responsible for increasing Web site traffic, updating Web content and designs. Students learn planning issues related to Web design and redesign.

**Term Offered:** Spring, Fall**CMPT 2990 Independent Study**

[1-4 credit hours]

Students will study a computer-related subject mutually agreed upon between the student and the instructor. The format may include lecture, computer lab and/or practical experience.

**Term Offered:** Spring, Summer, Fall

**CNET 2100 Microsoft Operating Systems**

[3 credit hours]

In-depth study of a contemporary network operating system. Topics include operating system installation and upgrade, configuration, management and troubleshooting.

**Term Offered:** Fall**CNET 2150 Computer Hardware**

[3 credit hours]

Knowledge of computer hardware for the purpose of acquisition, installation and maintenance at the equipment level. The curriculum is aligned with the A+ certification standards.

**Term Offered:** Spring, Fall**CNET 2200 Network Technologies**

[4 credit hours]

Examines the network technologies utilized in today's networks. Emphasis is placed on understanding hardware and software concepts and protocols referred to in technical publications and advanced network studies.

**Term Offered:** Spring, Summer**CNET 2300 Network Operating Systems II**

[4 credit hours]

This course offers an in-depth study of a contemporary network operating system. Topics include operating system installation and upgrade, configuration, management and troubleshooting.

**Term Offered:** Spring, Fall**CNET 2400 Network Operating System Support**

[4 credit hours]

Examines the support aspects of a contemporary network operating system in a local area network environment. Topics include operating system installation, upgrade, configuration, management and troubleshooting.

**Term Offered:** Spring, Fall**CNET 2410 Network Services and Infrastructures**

[3 credit hours]

This course culminates the CNET server curriculum by focusing on vital network services and supporting network infrastructure. Topics include network budgeting, design, planning and implementation, as well as enterprise-wide internetworking.

**Prerequisites:** CNET 2400 with a minimum grade of D-**Term Offered:** Spring, Fall

## AA Pre-Business Administration

Minimum 60 hours

The Associate of Arts in Pre-Business is designed as the first half of the Bachelor of Business Administration degree. It is a general studies associate degree as it contains mostly the core courses required of all students plus the beginning general business requirements.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Associate of Arts in Pre-business Administration

- Students are required to successfully complete a minimum of 60 semester credit hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1320 at a minimum. Students placing into lower developmental Math levels - MATH 1200 will be required to complete additional course work. Students placing directly into MATH 1730 may replace MATH 1320 with an elective or course work required later for their BBA.
- This Degree Program leads into any BBA major for completion of the bachelor degree.
- Students should consult their Degree Audit for coursework that fulfills course requirements in University Core areas.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
BMGT 1010	Business Principles	3
CMPT 1100	Microsoft Office Applications	3
ENGL 1110	College Composition I	3
MATH 1320	College Algebra	3
Social Sciences Core <sup>1</sup>		3
Hours		16
<b>Second Term</b>		
ECON 1150	Principles Of Macroeconomics	3
ENGL 2960	Professional and Business Writing	3
MATH 1730	Calculus with Applications to Business and Finance	5
Arts/Humanities Core <sup>1</sup>		3
Hours		14
<b>Third Term</b>		
ACTG 1040	Principles Of Financial Accounting	3
BMGT 2700	Managing Diversity In The Workplace (or US Diversity Core) <sup>1</sup>	3
BUAD 2060	Business Statistics	3
ECON 1200	Principles Of Microeconomics	3
Natural Sciences Core <sup>1</sup>		3
Hours		15
<b>Fourth Term</b>		
ACTG 1050	Principles Of Management Accounting	3
BMGT 2110	Managing In A Global Economy	3
BUAD 2070	Business Analytics	3
Natural Sciences Core <sup>1</sup>		3
Arts/Humanities Core <sup>1</sup>		3
Hours		15
Total Hours		60



<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

## AAB Accounting Technology

Minimum 60 hours

Accounting is often called the language of business. Business owners, executives, managers and other decision-makers rely on accountants to give them relevant, understandable financial information. In today's rapidly changing environment, accountants must be prepared to deal with increasingly complex concepts and accounting principles.

Below is a sample plan of study. Consult your degree audit for your program requirements.

### Associate of Applied Business in Accounting Technology

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students should consult their Degree Audit for coursework that fulfills course requirements in University Core areas.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
ACTG 1040	Principles Of Financial Accounting	3
BMGT 1010	Business Principles	3
BUAD 1000	Orientation For Business Students	1
CMPT 1430	Microsoft Word	2
CMPT 1450	Microsoft Outlook	1
ENGL 1110	College Composition I	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16
<b>Second Term</b>		
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
ACTG 1050	Principles Of Management Accounting	3
BMGT 1500	Workplace Communication And Presentations	3
CMPT 1410	Microsoft Excel Spreadsheet Application	2
ENGL 2960	Professional and Business Writing	3
Hours		14-15
<b>Third Term</b>		
ACTG 1200	QuickBooks	3
BMGT 2030	Supervision	3
BMGT 2050	Small Business Management	3

BMGT 2700	Managing Diversity In The Workplace (or US Diversity Core) <sup>1</sup>	3
Select one of the following:		3
ECON 1010	Introduction To Economic Issues	
ECON 1150	Principles Of Macroeconomics	
ECON 1200	Principles Of Microeconomics	
Hours		15
<b>Fourth Term</b>		
ACTG 2100	Intermediate Accounting I	3
ACTG 2400	Fundamentals Of Taxation	3
BMGT 2310	Legal Environment Of Business	3
CMPT 2460	Advanced Microsoft Excel Spreadsheet	2
Select ACTG 2630 (When available)		1
Natural Science Core <sup>1</sup>		3
Hours		15
Total Hours		60-61

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

## AAB Computer Network Administration

Minimum 60 hours

Computer network administration prepares students for work in the computer networking industry. Students learn about operating systems management, programming, networking fundamentals and computer integration. The course work prepares students for professional certifications for companies like Microsoft, CompTIA and Cisco.

Below is a sample plan of study. Consult your degree audit for your program requirements.

### Associate of Applied Business in Computer Network Administration

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
ENGL 1110	College Composition I	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	

MATH 1320	College Algebra	
CMPT 1110	Pc Operating Systems	3
Social Sciences Core		3
Hours		13-14

**Second Term**

ENGL 2960	Professional and Business Writing	3
CMPT 1020	Computer Concepts	4
CNET 2400	Network Operating System Support	4
CNET 2200	Network Technologies	4
CMPT/CNET Technical Elective Course <sup>2</sup>		1
Hours		16

**Third Term**

ACTG 1040	Principles Of Financial Accounting	3
BMGT 2700	Managing Diversity In The Workplace (or US Diversity Core) <sup>1</sup>	3
CNET 2100	Microsoft Operating Systems	3
CNET 2150	Computer Hardware	3
Arts/Humanities Core		3
Hours		15

**Fourth Term**

ACTG 1050	Principles Of Management Accounting	3
BMGT 1500	Workplace Communication And Presentations	3
CNET 2300	Network Operating Systems II	4
CNET 2410	Network Services and Infrastructures	3
Natural Sciences Core <sup>1</sup>		3
Hours		16
Total Hours		60-61

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

<sup>2</sup> Major elective, see degree audit or academic advisor for course selection.

## AAB Computer Software Specialist

minimum 60 hours

Graduates of the computer software specialist degree program are knowledgeable of the most important software packages used in today's workplace. Along with the ability to produce professional spreadsheets, databases, documents, and presentations, students will gain important communication and decision-making skills.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Associate of Applied Business for Computer Software Specialist

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.

- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
BMGT 1010	Business Principles	3
ENGL 1110	College Composition I	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
CMPT 1430	Microsoft Word	2
Social Sciences Core <sup>1</sup>		3
Hours		15-16

**Second Term**

BMGT 2010	Workplace Management	3
ENGL 2960	Professional and Business Writing	3
BMGT 2700	Managing Diversity In The Workplace (or US Diversity Core) <sup>1</sup>	3
CMPT 1440	Microsoft Powepoint Presentation	2
CMPT 1410	Microsoft Excel Spreadsheet Application	2
Arts/Humanities Core <sup>1</sup>		3
Hours		16

**Third Term**

ACTG 1040	Principles Of Financial Accounting	3
CMPT 1420	Microsoft Access Database Applications	2
CMPT 1600	Internet Design And Publishing	3
CMPT 1320	Internet And The World Wide Web	1
BMGT 1500	Workplace Communication And Presentations	3
BMGT/CMPT Technical Elective <sup>2</sup>		3
Hours		15

**Fourth Term**

ACTG 1050	Principles Of Management Accounting	3
CMPT 2410	Adobe InDesign Desktop Publishing	3
CMPT 2460	Advanced Microsoft Excel Spreadsheet	2
BMGT/CMPT Technical Elective <sup>2</sup>		3
Natural Sciences Core <sup>1</sup>		3
Hours		14
Total Hours		60-61

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

<sup>2</sup> Major elective, see degree audit or academic advisor for course selection.

## AAB Information Services and Support

minimum 60 hours

Information services and support prepares students for work in the computer industry as software and hardware support professionals, information technology staff and computer technicians.

Below is a sample plan of study. Consult your degree audit for your program requirements.

### Associate of Applied Business in Information Services and Support

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
BMGT 1010	Business Principles	3
ENGL 1110	College Composition I	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
CMPT 1100	Microsoft Office Applications	3
CMPT 1410	Microsoft Excel Spreadsheet Application	2
Hours		15-16
<b>Second Term</b>		
BMGT 2050	Small Business Management	3
BMGT 2700	Managing Diversity In The Workplace	3
CMPT 1020	Computer Concepts	4
CMPT 2460	Advanced Microsoft Excel Spreadsheet	2
ENGL 2960	Professional and Business Writing	3
Hours		15
<b>Third Term</b>		
BMGT 1500	Workplace Communication And Presentations	3
CMPT 1110	Pc Operating Systems	3
CNET 2150	Computer Hardware	3
Arts/Humanities Core <sup>1</sup>		3
Social Science Core <sup>1</sup>		3
Hours		15

#### Fourth Term

CMPT 1320	Internet And The World Wide Web	1
CMPT 1450	Microsoft Outlook	1
CMPT 2500	Help Desk Concepts	3
CNET 2200	Network Technologies	4
CMPT 1430	Microsoft Word	2
Natural Sciences Core <sup>1</sup>		3
Technical Elective <sup>2</sup>		2
Hours		16
Total Hours		61-62

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

<sup>2</sup> Major elective, see degree audit or academic advisor for course selection.

## AAB Programming and Software Development

Minimum 60 hours

Programming and software development prepares students with a strong foundation of software and database design. The degree features the most popular programming languages and relates them to business and Web applications. As uses for computers continues to grow, there will be a resulting need for new applications, software and technology.

Below is a sample plan of study. Consult your degree audit for your program requirements.

### Associate of Applied Business in Programming and Software Development

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
BMGT 1010	Business Principles	3
ENGL 1110	College Composition I	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
CMPT 1100	Microsoft Office Applications	3
Hours		13-14

**Second Term**

CMPT 1020	Computer Concepts	4
ENGL 2960	Professional and Business Writing	3
BMGT 1500	Workplace Communication And Presentations	3
CMPT 1120	Visual Basic Programming	4
CMPT 1420	Microsoft Access Database Applications	2
Hours		16

**Third Term**

ACTG 1040	Principles Of Financial Accounting	3
CMPT 2030	C Family Programming	4
CNET 2150	Computer Hardware	3
Arts/Humanities Core <sup>1</sup>		3
Natural Sciences Core <sup>1</sup>		3
Hours		16

**Fourth Term**

ACTG 1050	Principles Of Management Accounting	3
CMPT Technical Elective <sup>2</sup>		2
BMGT 2700	Managing Diversity In The Workplace (or US Diversity Core) <sup>1</sup>	3
CNET 2200	Network Technologies	4
Social Sciences Core <sup>1</sup>		3
Hours		15
Total Hours		60-61

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

<sup>2</sup> Major elective, see degree audit or academic advisor for course selection.

## AAB-Business Management Technology

minimum 60 hours

Did you know that many entrepreneurs do not possess the management skills necessary to keep their businesses operating? Business management technology prepares students for supervisory or management positions in the service and production industries. This associate degree program provides students with the necessary skills for small business ownership.

Business management technology professionals are trained in the areas of planning, organizing and supervising. In addition, students gain experience in accounting and computer applications, which are vital subjects in the modern workplace.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Associate of Applied Business in Business Management Technology

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
BMGT 1010	Business Principles	3
ENGL 1110	College Composition I	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
CMPT 1100	Microsoft Office Applications	3
Select one of the following Social Science Core: <sup>1</sup>		3
ECON 1010	Introduction To Economic Issues	
ECON 1150	Principles Of Macroeconomics	
ECON 1200	Principles Of Microeconomics	
Hours		16-17

**Second Term**

ENGL 2960	Professional and Business Writing	3
BMGT 1500	Workplace Communication And Presentations	3
BMGT 2110	Managing In A Global Economy	3
CMPT 1430	Microsoft Word	2
Arts/Humanities Core <sup>1</sup>		3
Hours		14

**Third Term**

BMGT 2010	Workplace Management	3
ACTG 1040	Principles Of Financial Accounting	3
BMGT 2050	Small Business Management	3
BMGT 2700	Managing Diversity In The Workplace	3
Natural Sciences Core <sup>1</sup>		3
Hours		15

**Fourth Term**

ACTG 1050	Principles Of Management Accounting	3
ACTG 2630	Payroll Accounting	1
BMGT 2030	Supervision	3
CMPT 1410	Microsoft Excel Spreadsheet Application	2
MARS 1010	Marketing Principles	3

Arts/Humanities Core	3
Hours	15
Total Hours	60-61

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

## ATS Technical Studies

Minimum 60 hours

COBI's interdisciplinary program in technical studies is useful for students who want to gain technical expertise in more than one discipline. Students must have an approved educational plan in order to be eligible for any A.T.S. program. Students explore their interests in a variety of technical areas, achieve specific career goals and have the opportunity to apply their credits to a bachelor's degree in Applied Organizational Technology (p. 197) through the College of Business and Innovation.

Code	Title	Hours
<b>Degree Requirements</b>		
English Composition		6
General Education/University CORE Requirements <sup>1</sup>		15
Technical Field #1		15
Technical Field #2		12
Occupational Objective/Additional Technical Competence		12
Total Hours		60

<sup>1</sup> Including Humanities, Social Science, Natural Science, Multicultural and Math areas.

**Technical Fields and Occupational Objectives must be planned in coordination with an academic adviser in the College of Business and Innovation.**

Below is a sample Plan of Study Technical Studies - Graphic & Web Design. Consult your degree audit for your program requirements.

## Associate of Technical Studies Focus Graphic Design

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core. The ATS degree is individualized with this popular focus being a possible direction for completion. The focus is not specified in the degree.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1

ENGL 1110	College Composition I	3
BMGT 2700	Managing Diversity In The Workplace (or US Diversity Core) <sup>1</sup>	3
CMPT 1100	Microsoft Office Applications	3
Social Sciences Core <sup>1</sup>		3
BMGT 1010	Business Principles	3
Hours		16

### Second Term

ENGL 2960	Professional and Business Writing	3
BMGT 2010	Workplace Management	3
CMPT 1550	Adobe Acrobat	3
BMGT 1500	Workplace Communication And Presentations	3
Arts/Humanities Core <sup>1</sup>		3
Hours		15

### Third Term

CMPT 1530	Beginning Adobe Photoshop	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
CMPT 1520	Beginning Adobe Illustrator	3
CMPT 1510	Digital Design Fundamentals	3
COMM 2500	Social Media I	3
Hours		15-16

### Fourth Term

CMPT 2410	Adobe InDesign Desktop Publishing	3
CMPT 2530	Advanced Adobe Photoshop <sup>2</sup>	3
COMM 2000	Mass Communication And Society	3
MARS 1010	Marketing Principles	3
Natural Sciences Core <sup>1</sup>		3
Hours		15
Total Hours		61-62

<sup>1</sup> Select from approved University Core course work, see Degree Audit for course selections.

<sup>2</sup> Major elective, see degree audit or academic advisor for course selection.

*Sample Full-Time Plan of Study - Technical Studies*

## Associate of Technical Studies

- Students are required to successfully complete a minimum of 60 semester hours with an overall grade point average of 2.0 or higher.
- Students should be academically prepared to be placed into MATH 1180 or MATH 1200 at a minimum.
- Students must consult with an adviser to plan out this individualized degree program and discuss specific options for course work towards the two Technical Fields and the Occupational Objective/Technical Competence area.



- Students should consult their Degree Audit for coursework that fulfills course requirements in the University Core.
- Students may use the associate degree to go on to the BAOT for 2+2 bachelor degree completion.

Course	Title	Hours
<b>First Term</b>		
BUAD 1000	Orientation For Business Students	1
ENGL 1110	College Composition I	3
Select one of the following:		3-4
MATH 1180	Reasoning With Mathematics	
MATH 1200	Mathematical Modeling and Problem Solving	
MATH 1320	College Algebra	
Technical Field #1 <sup>2</sup>		3
Technical Field #2 <sup>2</sup>		3
Social Science Core <sup>1</sup>		3
Hours		16-17
<b>Second Term</b>		
ENGL 2960	Professional and Business Writing	3
Technical Field #1 <sup>2</sup>		3
Technical Field #2 <sup>2</sup>		3
Occupational Objective/Tech Competence <sup>2</sup>		3
Arts/Humanities Core <sup>1</sup>		3
Hours		15
<b>Third Term</b>		
Technical Field #1 <sup>2</sup>		3
Technical Field #2 <sup>2</sup>		3
Technical Field #2 <sup>2</sup>		3
Occupational Objective/Tech Competence <sup>2</sup>		3
Natural Science Core <sup>1</sup>		3
Hours		15
<b>Fourth Term</b>		
Technical Field #1 <sup>2</sup>		3
Technical Field #2 <sup>2</sup>		3
Occupational Objective/Tech Competence <sup>2</sup>		3
Occupational Objective/Tech Competence <sup>2</sup>		3
Arts/Humanities Core <sup>1</sup>		3
Hours		15
Total Hours		61-62

<sup>1</sup> Select from approved University Core course work, see Degree Audit for course selections.

<sup>2</sup> Major elective, see degree audit or academic advisor for course selection.

## Digital Communication Application Certificate

These three courses comprise the foundation of the Adobe design suite of software. Students who complete these classes will have a

marketable basis of design knowledge and experience that will prepare them for the successful completion of both on-line and print projects.

Code	Title	Hours
CMPT 1520	Beginning Adobe Illustrator	3
CMPT 1550	Adobe Acrobat	3
CMPT 2410	Adobe InDesign Desktop Publishing	3
Total Hours		9

## Department of Finance

Alex Petkevich, Chair

The Finance Department offers concentrations in Corporate Finance and Financial Services leading to challenging careers in the business, government, and the non-profit sectors. Successful graduates in corporate finance will need strong analytical and presentation skills. Students with high GPAs have been placed with leading manufacturing and health care firms. Financial Services majors can work in investments, financial planning, real estate, insurance, and banking firms. Each Financial Services major is required to take a sales class to improve their interaction with clients. Each path offers its own unique set of challenges leading to satisfying careers.

## Degree Offered

- BBA Finance (p. 213)
- BBA Financial Services (p. 214)

### FINA 2000 Personal Investing

[3 credit hours]

This course features a real time stock market simulation. Students will be able to trade securities and track their performance throughout the semester. Learn about different types of investments including: stocks, bonds, mutual funds, real estate, options, and futures. Not applicable toward finance major.

**Term Offered:** Spring, Summer, Fall

### FINA 3060 Personal Finance

[3 credit hours]

This course covers the fundamentals of personal finance and will help you make informed decisions in your financial future. Topics included: how to manage credit, planning for retirement, mortgages and home ownership, understanding life insurance, types of mutual funds, personal taxation principles, how loans work, and estate planning. Not applicable toward finance major.

**Term Offered:** Spring, Summer, Fall

### FINA 3480 Investments

[3 credit hours]

This course introduces history of risk-returns trade-off, investment process, different investment securities and financial markets in which financial assets traded. In addition, modern portfolio theory, risk-return trade-off, and performance evaluation are explained in detail.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**FINA 3500 International Business Finance**

[3 credit hours]

Examines the role of a financial manager in international transactions. The international environment and the role of international asset markets are emphasized.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FINA 3600 Risk Management**

[3 credit hours]

Investigates non-speculative risks and the methods used to deal with them. Emphasizes on the insurance mechanism. Explores the functional aspect of the insurance operations.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Summer, Fall

**FINA 3610 Life And Health Insurance**

[3 credit hours]

Combines a discussion of the economic aspects of life and health insurance with basic analysis on life insurance, health and annuity contracts. Includes investigation of major functional aspects.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FINA 3660 Real Estate Principles, Practices And Finance**

[3 credit hours]

A basic discussion in real estate economics, valuation theory, transfer procedures, legal characteristics, brokerage, taxation and financing techniques. Emphasis on residential properties. A term project is required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Fall

**FINA 3670 Real Estate Valuation**

[3 credit hours]

Methodology of appraising large and small commercial real properties and the theory underlying appraisal techniques and valuation. A term project is required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring

**FINA 3680 Real Estate Law, Insurance And Taxes**

[3 credit hours]

An integrative analysis of real estate, insurance, taxes and legislation as they impact commercial real estate ownership returns and risk. A term project is required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FINA 3890 Financial Modeling with Excel**

[3 credit hours]

This course help students develop spreadsheet modeling skills necessary to evaluate common financial problems encountered. The course provides hands-on experience in obtaining financial data and using Excel to manipulate and analyze data for a wide variety of subjects in finance.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4080 Intermediate Financial Management**

[3 credit hours]

This course explores corporate financial decision making in depth. Topics include financial statement analysis, financial planning, capital budgeting, working capital management, and capital structure.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**FINA 4090 Financial Markets And Institutions**

[3 credit hours]

The course explores operations and functions of financial markets and institutions. The emphasize is on the interest rate theory, the role of the Federal Reserve System and the government in establishing monetary policy and providing regulation, management of institutions, and internationalization.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**FINA 4100 Security Analysis & Portfolio Management**

[3 credit hours]

Emphasizes the importance of portfolio management techniques and evaluation. Techniques of financial statement analysis, economic analysis, industry analysis, theoretical issues of efficient markets, technical analysis and fundamental analysis.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4200 Fixed Income Securities**

[3 credit hours]

This course explores the fixed income securities markets, institutions, and instruments. We will analyze the pricing, risks, and risk management of fixed income securities.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring

**FINA 4340 Derivatives Securities and Markets**

[3 credit hours]

This course explores the derivative securities markets and instruments. It covers the valuation, risks, and risk management aspect of derivative securities.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4480 Student Managed Portfolio Practicum**

[1-3 credit hours]

Course provides selected students active portfolio management training utilizing an endowed portfolio. Student Portfolio Managers apply equity selection analysis and portfolio risk analytics, with fiduciary responsibilities.

**Prerequisites:** FINA 3480 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4670 Advanced Financial Management**

[3 credit hours]

Applies financial analysis techniques to real-world problems using computer simulations and case studies. Topics include capital budgeting, working capital management, cost of capital, capital structure, leasing, valuation of levered firms, and options.

**Prerequisites:** FINA 3480 with a minimum grade of D- and FINA 4080 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FINA 4840 Small Business Financial Policies And Practices**

[3 credit hours]

Financial management and planning in small and medium-sized firms. Course focuses on the financial analysis and management of their problems, policies, practices and funding requirements.

**Prerequisites:** BUAD 3040 with a minimum grade of C**Term Offered:** Spring, Summer, Fall**FINA 4870 Advanced Financial Institutions & Markets**

[3 credit hours]

Seminar focusing on current issues in financial institutions and services management.

**FINA 4880 Real Estate Property Management**

[3 credit hours]

Methodology of managing large and small commercial properties and buildings to maximize current earnings, earnings potential and asset value for the property owners.

**Prerequisites:** (BUAD 3040 with a minimum grade of D- and FINA 3670 with a minimum grade of D- and FINA 3680 with a minimum grade of D-)**FINA 4890 Financial And Estate Planning**

[3 credit hours]

Nature and methods of Financial planning. Creation, conservation and distribution of estates. Emphasis is on investments, insurance wills, trusts and tax laws.

**Prerequisites:** BUAD 3040 with a minimum grade of D-**Term Offered:** Spring**FINA 4900 Seminar In Finance**

[3 credit hours]

Seminar course in advanced and specialized topics. Current readings from finance journals. Written paper required.

**Prerequisites:** (FINA 3480 with a minimum grade of D- and FINA 4080 with a minimum grade of D-)**Term Offered:** Spring, Fall**FINA 4940 Finance Internship**

[1-3 credit hours]

This course explores special topics in the field of finance in detail. Topics varies and chosen as need required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**FINA 4990 Independent Study: Readings And Research In Finance**

[1-3 credit hours]

An independent, professor supervised, course dealing with an in depth investigation of a financial area not covered adequately in another listed course.

**Prerequisites:** (FINA 3480 with a minimum grade of D- and FINA 4080 with a minimum grade of D- and FINA 4090 with a minimum grade of D-)**Term Offered:** Spring, Summer, Fall

## BBA Finance

Finance is the management of money, banking, investments and credit. Finance majors gain an understanding of how to acquire, manage and invest corporate funds. They also study financial institutions, financial markets, security analysis and investments.

For this area of specialization, students must earn a grade of C (2.0) or higher in BUAD 3040 as well as their FINA courses and complete a total

of 7 courses/21 hours in the area of specialization. Neither FINA 2000 nor FINA 3060 may count toward credit for the FINA major.

Code	Title	Hours
<b>Required Courses</b>		
FINA 3480	Investments	3
FINA 4080	Intermediate Financial Management	3
FINA 4090	Financial Markets And Institutions	3
Select one of the following:		3
FINA 3890	Financial Modeling with Excel	
FINA 4100	Security Analysis & Portfolio Management	
FINA 4200	Fixed Income Securities	
FINA 4340	Derivatives Securities and Markets	
FINA 4670	Advanced Financial Management	
<b>Elective Courses</b>		
Select three of the following:		9
FINA 3500	International Business Finance	
FINA 3600	Risk Management	
FINA 3890	Financial Modeling with Excel <sup>1</sup>	
FINA 4100	Security Analysis & Portfolio Management <sup>1</sup>	
FINA 4200	Fixed Income Securities <sup>1</sup>	
FINA 4340	Derivatives Securities and Markets <sup>1</sup>	
FINA 4480	Student Managed Portfolio Practicum <sup>2</sup>	
FINA 4670	Advanced Financial Management <sup>1</sup>	
FINA 4870	Advanced Financial Institutions & Markets	
FINA 4900	Seminar In Finance	
FINA 4940	Finance Internship <sup>2</sup>	
Total Hours		21

<sup>1</sup> If not selected as a required course.

<sup>2</sup> With departmental approval.

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16

**Fourth Term**

See pre-business/lower division requirements BBA plan.	15
Hours	15

**Fifth Term**

BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

**Sixth Term**

BUAD 3470	The Legal And Ethical Environment Of Business	3
FINA 3480	Investments	3
FINA 4090	Financial Markets And Institutions	3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

**Seventh Term**

FINA 4080	Intermediate Financial Management	3
FINA Major Elective <sup>3</sup>		3
FINA Major Elective <sup>3</sup>		3
Non-US Diversity <sup>1</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

**Eighth Term**

BUAD 4020	Senior Business Policy Forum	3
FINA 4670	Advanced Financial Management <sup>4</sup>	3
FINA Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 Business elective if no Business minor is selected.

<sup>3</sup> Finance major elective including internship, see degree audit for course selection.

<sup>4</sup> Select FINA 4670 or other approved senior level elective, see degree audit for course selection.

## BBA Financial Services

Whereas finance is the management of money, banking, investments and credit, those in financial services take these skills further to communicate and advise customers about finance decisions. Financial markets are quickly changing by incorporating e-commerce and sales management into the field. Financial services majors focus more on the interpersonal

side of finance to meet the needs as professionals in this rapidly changing environment. Often times, the workload of a financial service major is mostly self-determined.

The majors consist of 7 required and elective courses beyond BUAD 3040, to equal 21 hours. Neither FINA 2000 nor FINA 3060 may count toward credit for the FINA major.

Code	Title	Hours
<b>Required Courses</b>		
FINA 3480	Investments	3
FINA 4090	Financial Markets And Institutions	3
PSLS 3440	Professional Sales	3
<b>Elective Courses</b>		
Select four of the following:		12
FINA 3600	Risk Management <sup>1</sup>	
FINA 3610	Life And Health Insurance <sup>1</sup>	
FINA 4890	Financial And Estate Planning <sup>1</sup>	
FINA 4900	Seminar In Finance (Series 7) <sup>1</sup>	
FINA 3660	Real Estate Principles, Practices And Finance	
FINA 3670	Real Estate Valuation	
FINA 3680	Real Estate Law, Insurance And Taxes	
FINA 3890	Financial Modeling with Excel	
FINA 4100	Security Analysis & Portfolio Management	
FINA 4200	Fixed Income Securities	
FINA 4340	Derivatives Securities and Markets	
FINA 4480	Student Managed Portfolio Practicum (With departmental approval)	
FINA 4870	Advanced Financial Institutions & Markets	
FINA 4940	Finance Internship (With departmental approval)	
Total Hours		21

<sup>1</sup> Recommended courses for Insurance and Financial Planning.

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16

**Fourth Term**

See pre-business/lower division requirements BBA plan.	15
Hours	15

**Fifth Term**

BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

**Sixth Term**

BUAD 3470	The Legal And Ethical Environment Of Business	3
FINA 3480	Investments	3
FINA 4090	Financial Markets And Institutions	3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

**Seventh Term**

PSLS 3440	Professional Sales	3
FINA 3600	Risk Management <sup>3</sup>	3
FINA 4940	Finance Internship <sup>3</sup>	3
Non-US Diversity <sup>1</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

**Eighth Term**

BUAD 4020	Senior Business Policy Forum	3
Financial Services Major Elective <sup>3</sup>		3
Financial Services Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 Business elective if no Business minor is selected.

<sup>3</sup> Financial Services major elective including internship, see degree audit for course selection.

## Department of Information Operations & Technology

P. Sundararaghavan, Chair

The Information, Operations and Technology Management (IOTM) Department offers undergraduate programs in information systems, information technology, and supply chain management. These degree

programs prepare our graduates for a range of career options that intersect people, processes, and technology.

## Degrees Offered

- BBA Information Systems (p. 218)
- BBA Operations & Supply Chain Management (p. 219)

### INFS 3150 Principles Of Structured Computer Programming And Problem Solving

[3 credit hours]

Introduction to fundamental constructs of computer programming. This course introduces data types, variables, constants, arrays, objects, properties, methods, arguments, events, subroutines, functions, data handling, and program control structures. Additionally the course helps students develop skills and logical reasoning used in solving business problems.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D- or Business Computer Prof-Score with a score of 39

**Term Offered:** Spring, Summer, Fall

### INFS 3160 Business Application Development

[3 credit hours]

Building on programming skills developed in INFS3150 this course emphasizes database connectivity, data retrieval, design of user interfaces and business application development. The course will survey an object oriented language like C++, Java.

**Prerequisites:** INFS 3150 with a minimum grade of D-

### INFS 3250 Business Data Analysis & Reporting

[3 credit hours]

This course is designed to acquaint students with the application and use of integrated software. The course will provide students with hands-on experience in data analysis and manipulation, macro recording and editing and other advanced features and functions of popular business software packages. Students will gain skills in computer based report writing and data visualization techniques.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

### INFS 3370 Business Data Communications

[3 credit hours]

An introduction to data communications in business. Topics include local-area and wide-area networks, including the Internet; hardware and media; network topologies; client-server networks; and network operating system software.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D- or Business Computer Prof-Score with a score of 39

**Term Offered:** Spring, Fall



**INFS 3380 Web Application Development I**

[3 credit hours]

An introduction to business application program development on the web using contemporary technologies with emphasis on client-side applications. Implications of information technology projects on organizations will be discussed.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**INFS 3400 Principles of Information Systems Security**

[3 credit hours]

This course aims to give students a broad understanding of technical and business issues in information systems security, systems security models, analysis of process and technology in systems security and security policies leading to information assurance.

**INFS 3770 Introduction To Database Systems**

[3 credit hours]

In this course, the design and implementation of database management systems are studied. Students will develop significant skills in data modeling, database design and SQL. Students will work in teams developing a database application.

**Prerequisites:** INFS 3150 with a minimum grade of D- and (BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**INFS 3780 Enterprise Wide Information Systems Management**

[3 credit hours]

Introduction to ERP, Roles of SCM and CRM in Business Environment, Major Business Processes relating to functional areas of Business in an integrated software environment. Extensive hands-on exercises using an ERP software.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Fall

**INFS 3980 Contemporary Topics**

[3 credit hours]

Selected current topics in Information Systems practice, trends and technology.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Spring, Fall

**INFS 4100 Business Intelligence Using Big Data**

[3 credit hours]

This course aims to give students a broad understanding of technical and business issues in data analytics. Students will gain proficiency with reporting, data visualization and prediction using SAP Business Warehouse.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**INFS 4300 Web Application Development II**

[3 credit hours]

Address web architecture, web server administration and security issues; analyze, design, develop, and implement extensive database oriented business processes using server-side and client-side processing.

**Prerequisites:** (INFS 3770 with a minimum grade of D- and INFS 3380 with a minimum grade of D-)

**Term Offered:** Spring

**INFS 4320 Information Systems Planning And Outsourcing Management**

[3 credit hours]

Issues of planning, control, outsourcing management, and the organizational impact of computer systems will be studied. Challenges and opportunities in outsourcing will also be the focus of the course.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Fall

**INFS 4510 Business Systems Analysis and Design**

[3 credit hours]

Analysis, design and implementation of business information systems will be studied using Case tools and other appropriate software systems. Will also emphasize management of organizational change brought about by information technology projects.

**Prerequisites:** (BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-) and INFS 3150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**INFS 4620 Enterprise Database Systems**

[3 credit hours]

In-depth exposure to database concepts including relational and Object Data Models, normalization, logical design, stored functions, procedures, triggers, forms and reports will be explored using a business database package.

**Prerequisites:** INFS 3770 with a minimum grade of D- and (BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-)

**Term Offered:** Spring

**INFS 4680 Enterprise Systems Implementation and Integration**

[3 credit hours]

This course will provide students an overview of the fundamental business processes and examination of how business processes interact with SAP ERP including the system configuration and implementation. Issues. Students will gain a deep appreciation for the role of enterprise systems in managing processes from multiple functional perspectives. Also, students will work on various hands-on exercises including configuration of a fictitious company and implementation of business rules using an enterprise system.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**INFS 4810 Enterprise Database Administration**

[3 credit hours]

Designed for database administrators. Covers Physical Database Design, Indexing, performance monitoring and evaluation, partitioning databases, distributed and parallel processing. Exposure will be sufficient for certification exams.

**Prerequisites:** (INFS 3770 with a minimum grade of D- and INFS 4510 with a minimum grade of D- and INFS 4620 with a minimum grade of D-)

**INFS 4940 Infs Internship**

[1-3 credit hours]

A prearranged work-study program where students specializing in computer systems, operations management or decision sciences obtain on-the-job experience while learning and applying the basic concepts and techniques of their respective areas.

**Term Offered:** Spring, Summer, Fall

**INFS 4990 Independent Study: Readings And Research**

[1-3 credit hours]

Individual student study of a topic of interest to both the faculty member and student. Students are responsible for finding a faculty member to sponsor readings and research.

**Term Offered:** Spring, Summer, Fall

**OSCM 3310 Computer And Model Based Business Decision Making**

[3 credit hours]

An introduction to quantitative methods of decision making including linear programming, transportation, simulation, waiting line analysis, advanced decision theory and Markov chains. Computer packages and creative thinking will be emphasized.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

**OSCM 3340 Quality Management and Process Improvement**

[3 credit hours]

Covers major aspects of lean processes and managing total quality functions in manufacturing/service operations. Includes: quality assurance, process control techniques, product liability and organization of the quality function as well as process improvement tools such as lean principles, process analysis.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**OSCM 3600 Facility Planning**

[3 credit hours]

The study of the design and planning of new facilities. Topics include product and process design, the application of CIM, FMS, capacity planning, facility location and layout, and job design.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**OSCM 3610 Operations Planning and Scheduling**

[3 credit hours]

A study of operations planning and its relation to organizational goals. Students learn concepts of developing materials and resources requirement plans, capacity management, just-in-time, resource scheduling in manufacturing and service organizations. Emerging concepts in the discipline will also be discussed.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**OSCM 3660 Strategic Sourcing**

[3 credit hours]

Relationship between supply management and firm's strategic goals, state-of-the-art supplier management, competing through effective supplier relationships, commodity strategy development, supplier negotiations, supplier selection and quality management, managing the RFP/RFQ process, cost management, and latest trends in sourcing and covered in the course.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**OSCM 3750 Applied Regression Analysis**

[3 credit hours]

This course emphasizes model formulation, tests of goodness-of-fit and significance of parameters for the traditional linear regression model. Business applications/cases and computer packages will be emphasized.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

**OSCM 3760 Management Science: Cases And Applications**

[3 credit hours]

A study of business applications emphasizing model formulation, identification and validation. The course includes linear programming, critical path methods, queuing and various modeling techniques using computer packages.

**Prerequisites:** OPMT 3310 with a minimum grade of D-

**OSCM 4020 Statistics For Administrative Services**

[3 credit hours]

An introduction to statistical methods, including measures of central tendency and dispersion, probability and probability distributions, sampling theory, decision theory, regression and correlation. Specifically designed for the Administrative Services program.

**Prerequisites:** MATH 1270 with a minimum grade of D-

**OSCM 4150 Supply Chain Analytics and Cases**

[3 credit hours]

This course focuses on developing skills in using techniques and software tools for the design and operational control of supply chains. Students will investigate issues relating to configuring supply chain networks (distribution systems), inventory deployment, planning and routing of transportation systems, warehouse and plant location and contract design etc. The focus will be on applications to practical situations. Necessary skills will be developed using cases, projects and presentations.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**OSCM 4210 Project Management**

[3 credit hours]

This course covers planning, organizing and controlling projects. Topics such as project selection, scheduling, budgeting, resource management, project control, time-based competition and concurrent engineering will be discussed.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**OSCM 4250 Business Analytics-Techniques and Cases**

[3 credit hours]

This course provides an introduction to the analytical tools and techniques used in business for decision making with focus on using data visualization, and data mining techniques. It also familiarizes and equips students with prescriptive and evaluative techniques. Industrial grade software along with case studies will be used.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

**OSCM 4420 Service Operations Management**

[3 credit hours]

The service sector is the dominant sector of the economy. Students will study various aspects of Operations Management as applied to service industries. Services for manufacturing will be emphasized.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**OSCM 4450 Buasiness Forecasting**

[3 credit hours]

A study of qualitative and quantitative forecasting techniques. The course will cover applications of these analysis techniques to various functions such as finance, operations and supply chain management, marketing and economics. Students will also gain experience in using statistical software packages for forecasting.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

**OSCM 4500 Supply Chain Strategy**

[3 credit hours]

The course examines firms' strategic management of resources, and discusses its importance and benefits to its overall competitiveness. The purpose of the course is to provide students with an understanding of the content of firms' supply chain strategy and the processes by which they are developed and implemented. Topics covered in the course are related to operations/supply chain strategy, including environmental analysis, sustainability, product/service design, structure and infrastructure, coordination strategy, logistics and risk management.

**Prerequisites:** BUAD 3020 with a minimum grade of D- and MKTG 3130 with a minimum grade of D- and (OSCM 3340 with a minimum grade of D- and OSCM 3610 with a minimum grade of D- or OSCM 3660 with a minimum grade of D-)

**OSCM 4750 Analysis of Variance**

[3 credit hours]

Analysis of variance and related topics such as factorial design and Latin squares. Experimental designs including repeated measures, factorial and nested designs.

**OSCM 4760 Sim Mod/Anlys Spplly Chn Systm**

[3 credit hours]

This course provides an introduction to the use of computer simulation for business decision making. Students are introduced to modeling uncertainty in supply chain systems using various techniques including Monte Carlo simulation, waiting line analysis, discrete event simulation and other emerging techniques using simulation software (such as @Risk, Simul8 and ARENA) and business cases.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**OSCM 4940 Internship**

[3 credit hours]

A prearranged work study program where students specializing in OPMT or SCM obtain on the job experience while learning and applying the basic concepts and techniques of their respective discipline.

**Term Offered:** Spring, Summer, Fall

**OSCM 4980 Contemporary Topics In Operations and Supply Chain Management**

[3 credit hours]

Selected current topics in Operations Management practice, trends and technology.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

## BBA Information Systems

Information systems provides the student with the managerial and technical skills required to enter the challenging and dynamic field of computers and information systems. The student acquires knowledge involving a variety of topics, including widely used business programming languages, the design and implementation of management information systems, networking and communications, the managerial aspects of system development and the latest technological developments in database management, computer software and information technology.

Code	Title	Hours
<b>Required Courses</b>		
INFS 3150	Principles Of Structured Computer Programming And Problem Solving	3

INFS 3770	Introduction To Database Systems	3
INFS 4510	Business Systems Analysis and Design	3

**Electives**

Select four of the following elective		12
INFS 3250	Business Data Analysis & Reporting	
INFS 3370	Business Data Communications	
INFS 3380	Web Application Development I	
INFS 3400	Principles of Information Systems Security	
INFS 3780	Enterprise Wide Information Systems Management	
INFS 3980	Contemporary Topics	
INFS 4100	Business Intelligence Using Big Data	
INFS 4300	Web Application Development II	
INFS 4320	Information Systems Planning And Outsourcing Management	
INFS 4620	Enterprise Database Systems	
INFS 4680	Enterprise Systems Implementation and Integration	
INFS 4940	Infns Internship	
OSCM 4210	Project Management	
OSCM 4250	Business Analytics-Techniques and Cases	
Total Hours		21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Fifth Term</b>		
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3

Arts/Humanities Core <sup>1</sup>	3
Hours	16
<b>Sixth Term</b>	
BUAD 3470 The Legal And Ethical Environment Of Business	3
INFS 3150 Principles Of Structured Computer Programming And Problem Solving	3
Information Systems Elective <sup>3</sup>	3
Minor or 3000/4000 Business Elective <sup>2</sup>	3
Non-U.S Core Elective <sup>1</sup>	3
Hours	15
<b>Seventh Term</b>	
INFS 3770 Introduction To Database Systems	3
INFS 4940 Internship or INFS Elective <sup>3</sup>	3
Information Systems Major Elective <sup>3</sup>	3
Minor or 3000/4000 level Business <sup>2</sup>	3
Elective Core <sup>1</sup>	3
Hours	15
<b>Eighth Term</b>	
BUAD 4020 Senior Business Policy Forum	3
INFS 4510 Business Systems Analysis and Design	3
INFS Major Elective <sup>3</sup>	3
Minor/Business Elective <sup>2</sup>	3
Hours	12
Total Hours	120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

<sup>3</sup> INFS major elective including internship, see degree audit for course selection.

## BBA Operations & Supply Chain Management

Operations & Supply Chain Management specialization is designed for students who are interested in the revitalization and enhancing the competitiveness of America's industrial base or who want to pursue careers in the rapidly expanding service sector. Students will acquire the knowledge and skills to manage people and resources. They are given a broad overview of operations from product design, process selection, TQM, production planning and scheduling, will understand sourcing, industrial marketing, logistics, transportation, quality, information systems, as well as emerging practices in supply chain management and e-commerce.

Code	Title	Hours
<b>Operations &amp; Supply Chain Management Required Courses</b>		
OSCM 3340	Quality Management and Process Improvement	3
OSCM 3610	Operations Planning and Scheduling	3
OSCM 3660	Strategic Sourcing	3

OSCM 4500	Supply Chain Strategy	3
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### Elective Courses

Select three of the following: 9

MKTG 3130	Supply Chain Management	
MKTG 4220	International Sourcing, Logistics And Transportation	
OSCM 4250	Business Analytics-Techniques and Cases	
OSCM 4420	Service Operations Management	
OSCM 4760	Sim Mod/Anlys Sply Chn Systm	
OSCM 4940	Internship	
OSCM 4150	Supply Chain Analytics and Cases	
OSCM 4210	Project Management	
OSCM 4450	Buusiness Forecasting	
OSCM 4980	Contemporary Topics In Operations and Supply Chain Management	
INFS 3780	Enterprise Wide Information Systems Management	
INFS 4680	Enterprise Systems Implementation and Integration	

Total Hours 21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Fifth Term</b>		
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities <sup>1</sup>		3
Hours		16

**Sixth Term**

BUAD 3470	The Legal And Ethical Environment Of Business	3
OSCM 3340	Quality Management and Process Improvement	3
OSCM 3660	Strategic Sourcing	3
Minor/Business Elective <sup>2</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

**Seventh Term**

OSCM 3610	Operations Planning and Scheduling	3
Minor/Business Elective <sup>2</sup>		3
OSCM Major Elective <sup>3</sup>		3
OSCM Major Elective <sup>3</sup>		3
Non-US Diversity <sup>1</sup>		3
Hours		15

**Eighth Term**

BUAD 4020	Senior Business Policy Forum	3
OSCM 4500	Supply Chain Strategy	3
OSCM Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

<sup>3</sup> OSCM major elective including internship, see degree audit for course selection.

## Department of Management

Sonny Ariss, Chair

The Department of Management provides cutting-edge programs and resources for students, faculty, and practitioners to develop the leadership and management expertise required of organizations in the 21st century. The department is committed to excellence in all programs, practices, and research activities.

## Degrees Offered

- BBA Entrepreneurship, Family, & Small Business (p. 222)
- BBA Human Resource Management (p. 223)
- BBA Management (p. 224)
- BBA Organizational Leadership and Management (p. 225)

**EFSB 3480 Entrepreneurial Finance**

[3 credit hours]

Course focuses on basics of using financial tools to create and analyze financial statements in new ventures and to understand the sources and management of capital for start-ups and growing businesses.

**Prerequisites:** BUAD 2040 with a minimum grade of D- or ACTG 1040 with a minimum grade of D-

**Term Offered:** Fall

**EFSB 3500 Introduction To Entrepreneurship for Non-Business Students**

[3 credit hours]

Course provides an extensive overview of issues and opportunities involved in starting new businesses. Focus is on the entrepreneurial environment and opportunities, technopreneurship, and the entrepreneurial mindset. (This course may not be taken with or after taking EFSB 3590).

**Term Offered:** Fall

**EFSB 4010 Growing Family And Entrepreneurial Businesses**

[3 credit hours]

Advanced study of issues pertaining to family and entrepreneurial businesses. Issues of family psychology, growth strategies, financing, valuation, and harvesting the business are studied using hands-on consulting and case analysis.

**Prerequisites:** (EFSB 3480 with a minimum grade of D- and EFSB 4590 with a minimum grade of D-) or (BUAD 3040 with a minimum grade of D- and EFSB 4590 with a minimum grade of D-)

**Term Offered:** Spring

**EFSB 4590 Entrepreneurship and Small Business Management**

[3 credit hours]

A study of entrepreneurship and the process of starting and/or managing a new venture. Tools for developing and managing in all areas in a new or small business are applied in hands-on consulting with local companies and case analysis.

**Prerequisites:** EFSB 3480 (may be taken concurrently) with a minimum grade of D- or BUAD 3040 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Fall

**EFSB 4690 Innovation and Technology Commercialization**

[3 credit hours]

The course addresses the entire technology commercialization process from an innovative idea to market. A strategic technology plan to bring the idea forward to a launch of a new product is required.

**Term Offered:** Fall

**EFSB 4790 Franchising**

[3 credit hours]

Franchising is a major form of business ownership and a strategy for growing businesses in the United States and the world. It has been increasing rapidly which has led to increasing demand for employees with franchising knowledge. This course addresses franchising from the perspectives of the entrepreneur as a franchisee and the entrepreneur as a franchisor. Specific attention is given to the franchisor-franchisee relationship and how both sides could work together. Junior Status Required.

**Term Offered:** Spring



**EFSB 4940 Internship In Entrepreneurship And Family Business**

[3 credit hours]

Receive practical entrepreneurship experience working in a family or small business.

**Term Offered:** Spring, Summer, Fall

**EFSB 4980 Special Topics In Entrepreneurship And Family Business**

[3 credit hours]

This course is designed to focus on current issues in entrepreneurship and family business.

**EFSB 4990 Independent Study**

[1-3 credit hours]

Individually supervised study in Entrepreneurship and Family Business. Student must submit a proposal to be approved by the Program Advisor or Chair prior to enrolling in the course.

**Term Offered:** Spring, Summer, Fall

**HURM 3220 Human Resource Management**

[3 credit hours]

Introduction to the field of human resource management. It is designed for students planning careers in human resources or those who simply wish to supplement their skills in personnel matters commonly of concern to all managers.

**Term Offered:** Spring, Summer, Fall

**HURM 4640 Benefits, Health & Wellness**

[3 credit hours]

Includes planning and administering mandatory and voluntary benefit programs, cost containment strategies and benefit communication programs. Development and administration of Employee Assistance Programs and employee wellness programs are also covered.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

**HURM 4650 Compensation**

[3 credit hours]

Design and administration of compensation systems, including job evaluation, skill-based pay, salary surveys, pay level decisions, pay structures, executive and special employee group compensation programs, and budget and administrative issues.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

**HURM 4660 Planning, Selection, and Recruitment**

[3 credit hours]

Covers aspects of human resource planning, including Affirmative Action and succession planning, developing legally defensible selection and recruitment methods, and career development.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

**HURM 4710 Human Capital Performance and Development**

[3 credit hours]

This course has been designed to give students the critical skills necessary to improve the performance of individuals and work groups in competitive, dynamic organizations. Specifically, the focus will be on HRM best practices in performance management and training and development that, when brought together, help to create competitive advantage with people.

**Prerequisites:** HURM 3220 with a minimum grade of C-

**Term Offered:** Spring, Fall

**HURM 4800 Human Resource Information Systems**

[3 credit hours]

Course covers issues and techniques related to human resource information systems, human resource analytics, performance metrics, and the integration of technology to create and sustain effective HRM practices that contribute to the effectiveness of organizations.

**Prerequisites:** HURM 3220 with a minimum grade of D- and BUAD 2020 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MGMT 3630 Conflict Management: Mediation & Negotiations**

[3 credit hours]

Course is designed to develop negotiation and conflict management skills. Students will learn to apply these skills in distributive and integrative negotiation situations using cases, role-plays and exercises.

**Term Offered:** Spring, Summer, Fall

**MGMT 3700 Best Practices in Diversity Leadership**

[3 credit hours]

Organizations must be able to draw on their most important resource – the skills of the workforce. With the increasing richness of diversity in the world and in the workforce, organizational leaders need to expand their outlook and use creative strategies to effectively leverage diversity in the workplace.

Multicultural US Diversity

**MGMT 3770 Ethics In Leadership And Management**

[3 credit hours]

The ethical dilemmas faced by organizational leaders are explored and a four-lens model of ethical decision-making is presented. Students will practice using the model to resolve common ethical dilemmas for new and experienced managers.

**Term Offered:** Spring, Summer, Fall

**MGMT 3910 Research In Management**

[3 credit hours]

In-depth independent research work under the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall

**MGMT 4210 Leading And Managing Organizational Improvement**

[3 credit hours]

Covers theory, practice, and techniques in identifying major organizational problems and issues and leading the organization through change efforts.

**Term Offered:** Fall

**MGMT 4250 Performance Management For Individuals And Teams**

[3 credit hours]

Course examines the process and implementation of performance management systems at both individual and group levels. Performance appraisal, coaching, development planning, and performance problems will be discussed.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring

**MGMT 4330 Leading Organizational Change and Development**

[3 credit hours]

This course introduces students to the practice of analyzing, planning, implementing and evaluating organizational change and development. Students will learn to apply the relevant individual, team and organizational change interventions which contribute to greater performance and effectiveness.

**Term Offered:** Spring**MGMT 4780 Leading and Managing People**

[3 credit hours]

The basic principles, practices and dynamics of effective leadership in organizations are presented in this course. Students will have opportunities to assess their current leadership skills and identify strategies to develop their leadership capabilities through self-assessments and case studies.

**Term Offered:** Spring, Fall**MGMT 4880 Sports Leadership**

[3 credit hours]

The intent of this course is to provide the opportunity for the student to gain information and a better understanding of the various practices associated with sports leadership and management. Through cases, experiential exercises, teamwork, discussion, and exams, students will develop the skills needed to be effective leaders in the sports industry.

**Term Offered:** Fall**MGMT 4900 Seminar On Contemporary Issues In Management**

[3 credit hours]

This seminar is designed to facilitate applications of managerial skills, tools and techniques in meeting contemporary challenges in organizations.

**Prerequisites:** BUAD 3030 with a minimum grade of D-**Term Offered:** Fall**MGMT 4910 Research In Human Resource Management**

[1-3 credit hours]

Students have the opportunity to conduct an intensive investigation in a Human Resource Management area, supervised by a departmental faculty member. A formal paper is expected at the study's end.

**Prerequisites:** (HURM 3220 with a minimum grade of D- and BLAW 3550 with a minimum grade of D-)**Term Offered:** Spring, Summer, Fall**MGMT 4940 Management Internship**

[1-3 credit hours]

A supervised work experience for outstanding students. The internship involves practical experience. A written report is required of the student.

## BBA Entrepreneurship, Family, & Small Business

Entrepreneurship can be viewed as a personal passion for success, the desire to operate your own business, and spread your own wings. Success in your own business can be an exhilarating experience, but success does not just happen; it takes knowledge, preparation and skilled application.

The major in entrepreneurship educates and prepares students to succeed in their own business, or to achieve enhanced success in an existing business. Several key disciplines are pursued within the major,

including finance, management, communications, human resources, ethics and critical thinking. Graduates of the entrepreneurship major will be prepared to begin implementing their own business idea, acquire a franchise, or work for an established company seeking creative people to develop and manage new products.

Code	Title	Hours
<b>Required Courses</b>		
EFSB 3480	Entrepreneurial Finance	3
EFSB 4590	Entrepreneurship and Small Business Management	3
EFSB 4010	Growing Family And Entrepreneurial Businesses	3
EFSB 4690	Innovation and Technology Commercialization	3
EFSB 4790 or PSLS 3440	Franchising Professional Sales	3
BLAW 3570	The Laws Of Structuring And Operating A Business	3
Select one of the following:		3
EFSB 4940	Internship In Entrepreneurship And Family Business	
A 3000/4000 level business elective		
Total Hours		21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body:** Association to Advance Collegiate Schools of Business (AACSB) International.

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Fifth Term</b>		
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 3470	The Legal And Ethical Environment Of Business	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

**Sixth Term**

BUAD 3020	Principles Of Manufacturing And Service Systems	3
BLAW 3570	The Laws Of Structuring And Operating A Business	3
EFSB 4590	Entrepreneurship and Small Business Management	3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

**Seventh Term**

EFSB 3480	Entrepreneurial Finance	3
EFSB 4690	Innovation and Technology Commercialization	3
EFSB 4940	Internship In Entrepreneurship And Family Business	3
Non-U.S. Diversity <sup>1</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

**Eighth Term**

EFSB 4010	Growing Family And Entrepreneurial Businesses	3
EFSB 4790	Franchising	3
BUAD 4020	Senior Business Policy Forum	3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 Business elective if no Business minor is selected.

## BBA Human Resource Management

Human resource managers are needed in every size and type of organization. They help attract, develop and retain the people who make the organization successful. Human resource managers also work with team-building, problem-solving and interpersonal communication talents.

UT's human resource management program teaches students about a wide variety of HR issues – selection, training, recruitment, compensation, benefits, legal issues, employee relations and safety. Human resource management is designed to prepare candidates to assume positions as human resource practitioners in domestic and international business organizations, hospitals, nonprofit organizations, and local, state and federal government agencies.

Code	Title	Hours
<b>Required Courses</b>		
BLAW 3550	Legal And Safety Compliance Issues In Human Resource Management	3
HURM 3220	Human Resource Management	3
HURM 4640	Benefits, Health & Wellness	3

HURM 4650	Compensation	3
HURM 4660	Planning, Selection, and Recruitment	3
HURM 4710	Human Capital Performance and Development	3
HURM 4800	Human Resource Information Systems	3
Total Hours		21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15

<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16

<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16

<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15

<b>Fifth Term</b>		
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3470	The Legal And Ethical Environment Of Business	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

<b>Sixth Term</b>		
BLAW 3550	Legal And Safety Compliance Issues In Human Resource Management	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
HURM 3220	Human Resource Management	3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

<b>Seventh Term</b>		
HURM 4640	Benefits, Health & Wellness	3
HURM 4660	Planning, Selection, and Recruitment	3
HURM 4710	Human Capital Performance and Development	3
Non-US Diversity <sup>1</sup>		3

Core Elective <sup>1</sup>	3
Hours	15
<b>Eighth Term</b>	
BUAD 4020 Senior Business Policy Forum	3
HURM 4650 Compensation	3
HURM 4800 Human Resource Information Systems	3
Minor/Business Elective <sup>2</sup>	3
Hours	12
Total Hours	120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

## BBA Management

This area is designed to be more of a General Business option for students possibly interested in completing their degree or wishing to focus in a variety of Business courses in addition to a general management focus. Students seeking the complete array of course work in an intense Management curriculum should select the Organizational Leadership and Management (p. 225) area of specialization/major.

Code	Title	Hours
<b>Required Departmental Courses</b>		
Select four of the following: <sup>1</sup>		12
BLAW 3550	Legal And Safety Compliance Issues In Human Resource Management	
BLAW 3570	The Laws Of Structuring And Operating A Business	
BLAW 3670	International Business Law	
BLAW 4570	Legal And Ethical Aspects Of Managing Innovation And Technology	
BLAW 4580	Detection And Prevention Of Deceptive Business Practices	
EFSB 4010	Growing Family And Entrepreneurial Businesses	
EFSB 3480	Entrepreneurial Finance	
EFSB 4590	Entrepreneurship and Small Business Management	
EFSB 4690	Innovation and Technology Commercialization	
EFSB 4790	Franchising	
EFSB 4940	Internship In Entrepreneurship And Family Business <sup>2</sup>	
HURM 3220	Human Resource Management	
HURM 4640	Benefits, Health & Wellness	
HURM 4650	Compensation	
HURM 4660	Planning, Selection, and Recruitment	
HURM 4710	Human Capital Performance and Development	
HURM 4800	Human Resource Information Systems	
MGMT 3700	Best Practices in Diversity Leadership	
MGMT 3770	Ethics In Leadership And Management	
MGMT 3630	Conflict Management: Mediation & Negotiations	

MGMT 3910	Research In Management <sup>2</sup>	
MGMT 4210	Leading And Managing Organizational Improvement	
MGMT 4880	Sports Leadership	
MGMT 4330	Leading Organizational Change and Development	
MGMT 4780	Leading and Managing People	
MGMT 4900	Seminar On Contemporary Issues In Management	
MGMT 4940	Management Internship <sup>2</sup>	
<b>Electives</b>		
Select three Business elective courses <sup>3</sup>		9
Total Hours		21

<sup>1</sup> Select four courses with a maximum two courses from each alpha code.

<sup>2</sup> With departmental approval.

<sup>3</sup> Select three additional courses from any 3000/4000 Business level course not used in a minor from:

- ACCT
- EBUS
- FINA
- IBUS
- INFS
- MKTG
- OSCM
- PSLS

## Bachelor of Business Administration in Management

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Fifth Term</b>		
BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3

BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 3470	The Legal And Ethical Environment Of Business	3
Arts/Humanities <sup>1</sup>		3
Hours		16

**Sixth Term**

BUAD 3020	Principles Of Manufacturing And Service Systems	3
Minor/Business Elective <sup>2</sup>		3
MGMT Major Elective <sup>3</sup>		3
MGMT Major Elective - General Business <sup>4</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

**Seventh Term**

MGMT Major Elective <sup>3</sup>		3
MGMT Major Elective <sup>3</sup>		3
MGMT Major Elective - General Business <sup>4</sup>		3
Minor/Business Elective <sup>2</sup>		3
Non-US Diversity <sup>1</sup>		3
Hours		15

**Eighth Term**

BUAD 4020	Senior Business Policy Forum	3
MGMT Major Elective <sup>3</sup>		3
MGMT Major Elective - General Business <sup>4</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

<sup>3</sup> Management major elective, including internship, see degree audit for course selection.

<sup>4</sup> Management major elective outside of the Management Department, see degree audit for course selection.

## BBA Organizational Leadership and Management

The area of specialization in organizational leadership and management prepares students to enter a variety of organizations, both for profit and not-for-profit. Graduates of this program receive assessment and training in a number of areas that are crucial to a manager's success – planning, ethical decision-making, interpersonal skills, team-building, performance development and evaluation, conflict management, motivation and leading change.

Code	Title	Hours
HURM 3220	Human Resource Management	3
MGMT 3630	Conflict Management: Mediation & Negotiations	3
MGMT 3770	Ethics In Leadership And Management	3
MGMT 4210	Leading And Managing Organizational Improvement	3
MGMT 4250	Performance Management For Individuals And Teams	3
MGMT 4330	Leading Organizational Change and Development	3
MGMT 4780	Leading and Managing People	3
Total Hours		21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan. See pre-business/lower division requirements BBA plan.		16
Hours		16
<b>Fourth Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15
<b>Fifth Term</b>		
BUAD 3000	Career Development II	1
Arts/Humanities Core <sup>1</sup>		3
BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 3470	The Legal And Ethical Environment Of Business	3
Hours		16
<b>Sixth Term</b>		
BUAD 3020	Principles Of Manufacturing And Service Systems	3
HURM 3220	Human Resource Management	3
MGMT 3630	Conflict Management: Mediation & Negotiations	3
Core Elective <sup>1</sup>		3



Minor/Business Elective <sup>2</sup>		3
Hours		15
<b>Seventh Term</b>		
MGMT 3700	Best Practices in Diversity Leadership	3
MGMT 4210	Leading And Managing Organizational Improvement	3
MGMT 4780	Leading and Managing People	3
Minor/Business Elective <sup>2</sup>		3
Non-US Diversity <sup>1</sup>		3
Hours		15
<b>Eighth Term</b>		
BUAD 4020	Senior Business Policy Forum	3
MGMT 4250	Performance Management For Individuals And Teams <sup>3</sup>	3
MGMT 4330	Leading Organizational Change and Development	3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

<sup>3</sup> If course is not offered, students may substitute the course below. If students select MGMT 3770 please see your advisor to update your degree audit.  
MGMT 3770 Ethics In Leadership And Management

## Department of Marketing and International Business

Thomas Sharkey, Chair

Department of Marketing and International Business offers four unique and exciting programs. Join the more than 800 students to find out why Marketing, Professional Sales, International Business, and E-Business are their programs of choice...attractive jobs, valuable internships, industry and global networking, travel and study abroad, research-productive and student-centered faculty, and three very active student organizations are some of the compelling reasons!

## Degrees Offered

- BBA Digital Marketing (p. 229)
- BBA International Business (p. 229)
- BBA Marketing (p. 231)
- BBA Professional Sales (p. 232)

### EBUS 3090 Doing Business Digitally

[3 credit hours]

This course is an introduction to the networked economy, e-commerce and business transformation. It covers the technological trends, business opportunities, competitive threats, marketing responses and public policy issues concerning e-commerce.

**Term Offered:** Spring, Summer, Fall

### EBUS 3180 Web Design and Data Analytics

[3 credit hours]

A study of Web site design and management process for effective business communication, including authoring software, graphic tools, scripting techniques, java applets and related technical, legal ethical and managerial issues.

**Term Offered:** Fall

### EBUS 4040 Digital Business Intelligence

[3 credit hours]

A study of business intelligence management in an e-commerce environment, including the use of data mining and inbound marketing analytics tools for market analysis and business decision supports.

**Prerequisites:** EBUS 3090 with a minimum grade of D-

**Term Offered:** Spring, Fall

### EBUS 4150 Social Media Marketing

[3 credit hours]

A hands-on course involving case studies of successful e-commerce business models and a team-based project to develop e-commerce plan for established and start-up businesses.

**Prerequisites:** EBUS 3090 with a minimum grade of D-

**Term Offered:** Spring

### EBUS 4940 Internship

[3 credit hours]

Course description: Gain practical, hands –on professional experience while working in an organization.

### IBUS 3150 Understanding Cultural Differences For Business

[3 credit hours]

Course focuses on understanding cultures and managing cultural differences for competitive advantage in global business.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

### IBUS 3600 International Management

[3 credit hours]

An overview of management in different geographic regions of the world. Case studies will be used to compare and contrast national models of management.

**Prerequisites:** BUAD 3030 with a minimum grade of D-

**Term Offered:** Spring, Fall

### IBUS 4100 Study Abroad Program

[3 credit hours]

Program includes travel abroad, study and written report of an industry, company, or issues of interest, cultural immersion, and visits to manufacturing, service and government organizations.

**Term Offered:** Spring, Summer, Fall

**IBUS 4180 North American Business Practices**

[3 credit hours]

This course will examine the business environment in North America and compare business practices and trade relationships between Canada, Mexico and the United States.

**IBUS 4360 Global Business**

[3 credit hours]

Students will learn to integrate international business functions, develop strategies that respond to environmental changes, and understand the challenges faced by small, mid-sized and multinational firms operating in a global environment.

**Term Offered:** Spring, Fall**IBUS 4490 Global Management Systems**

[3 credit hours]

A study of how management systems in various world regions evolve in response to the emerging global context. Focus will be on analyzing the determinants of similarities and contrasts in management systems.

**Prerequisites:** BUAD 3030 with a minimum grade of D-**IBUS 4940 Internship In International Business II**

[3 credit hours]

A course in which the student receives practical International Business experience working in a global organization either within the U.S. or overseas.

**Term Offered:** Spring, Summer, Fall**IBUS 4980 Special Topics In International Business**

[3 credit hours]

Analysis of current issues in International Business.

**IBUS 4990 Independent Study**

[1-3 credit hours]

An individually supervised study in International Business. Students must submit a proposal to be approved by a department faculty member prior to enrolling in the course.

**MKTG 3130 Supply Chain Management**

[3 credit hours]

Examination of the role of logistics and supply chain management in creating value and as sources of competitive advantage. Analysis of transportation, warehousing, inventory management and materials management.

**Prerequisites:** BUAD 2080 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3140 International Marketing**

[3 credit hours]

Course focuses on developing an international marketing plan. Foreign country target market selection and development of a plan of action are explored in hands-on learning experience.

**Prerequisites:** BUAD 3010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3170 Marketing For Non-Profit Organizations**

[3 credit hours]

An introduction to marketing for non-business students. Focus is on planning and executing marketing programs in not-for-profit organizations. No credit for CBA students.

**Term Offered:** Spring**MKTG 3260 Mobile Marketing**

[3 credit hours]

A study on how firms can capitalize on the Internet as well as emerging digital and mobile marketing tools to conduct business internationally, assess e-commerce readiness in key regions, localize Web presence and contents and build business service infrastructures.

**Prerequisites:** BUAD 2080 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3280 Internet Marketing**

[3 credit hours]

A study of Internet-based marketing management, including market opportunity and environmental assessment, Web presence and value propositions, and special issues concerning marketing mix design and implementation.

**Prerequisites:** BUAD 3010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3690 Principles Of Marketing Communications**

[3 credit hours]

Focuses on communication tools in marketing: advertising, sales promotion, specialty advertising, packaging, publicity, direct marketing and personal selling. Attention to managerial decision making, legal and ethical aspects of promotion.

**Prerequisites:** BUAD 3010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3850 Buyer Behavior And Relationship Marketing**

[3 credit hours]

Utilization of the behavioral sciences for the analysis of both consumer and business markets. Designing marketing programs to build strong seller-buyer relationships.

**Prerequisites:** BUAD 3010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3870 Advertising Strategy**

[3 credit hours]

Project-oriented course providing hands-on experience in advertising campaign design. Emphasis on strategy and application involved in advertising.

**Prerequisites:** MKTG 3690 with a minimum grade of D-**Term Offered:** Spring**MKTG 3880 Marketing Research And Data-Based Management**

[3 credit hours]

This course addresses the fundamentals of marketing information system, marketing research and data-based marketing. Emphasis is on searching, developing and providing customer information for marketing decision making.

**Prerequisites:** BUAD 2070 with a minimum grade of D- and BUAD 3010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MKTG 3910 Direct Marketing**

[3 credit hours]

Techniques used and problems encountered in direct marketing. Analysis of the various marketing strategies, with an emphasis on promotions and media employed. Analysis of the social issues of direct marketing is included.

**Prerequisites:** BUAD 3010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall

**MKTG 3920 Sports Marketing**

[3 credit hours]

This course examines the world of sports as a business and will focus on attracting the ultimate customer-sports fans in an increasingly competitive, fragmented and global service. The course will discuss the management of sports at the professional, collegiate and special event levels focusing on the role marketing plays in planning and decision-making in attracting fans and other major customer—sponsors.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**MKTG 4130 Marketing Analysis And Decision Making**

[3 credit hours]

This capstone course, which focuses on small and global firms, is designed to sharpen students' integrative decision-making abilities through case analysis and a simulation or project-based analysis experience.

**Prerequisites:** (MKTG 3880 with a minimum grade of D- and MKTG 3850 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**MKTG 4220 International Sourcing, Logistics And Transportation**

[3 credit hours]

Physical supply, logistics and transportation functions are discussed within the context of a global marketplace, global business operations and international trade.

**Prerequisites:** BUAD 2080 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MKTG 4540 Business Marketing**

[3 credit hours]

Analysis of business markets and development of programs to market industrial business-to-business products/services.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MKTG 4940 Marketing Internship**

[1-3 credit hours]

Receive practical business experience working in an organization.

**Term Offered:** Spring, Summer, Fall

**MKTG 4980 Special Topics**

[3 credit hours]

Analysis of current issues in Marketing, International Business, or Business Economics.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MKTG 4990 Independent Study**

[1-3 credit hours]

Independent study in marketing, international business, or business economics. Student must submit a proposal to be approved by a department faculty member prior to enrolling in the course.

**Term Offered:** Spring, Summer, Fall

**PSLS 3000 Sales Career Orientation And Management**

[1 credit hour]

This course addresses careers in sales, looking at different types of selling and sales activities.

**Term Offered:** Spring, Fall

**PSLS 3080 Purchasing And Business Relationship Management**

[3 credit hours]

Purchasing and Business Relationship Management is designed for students interested in a career in sales, purchasing or general marketing. You will be exposed to the industrial buyer behavior and buying processes, strategic purchasing, relationship management and supply chain management. You will develop skills in communication, planning, analytical thinking and negotiation.

**Term Offered:** Spring, Summer, Fall

**PSLS 3440 Professional Sales**

[3 credit hours]

This course introduces the professional selling process from a customer collaboration perspective. The course utilizes role plays and exercises to develop a strong but adaptable sales process that will serve a student well in a business or complex selling situation.

**Term Offered:** Spring, Summer, Fall

**PSLS 3450 Sales Technologies and Strategies**

[3 credit hours]

This course introduces the student to the activities involved in supporting buyer-seller interactions and the personal selling function using the principles of Customer Relationship Management (CRM). Its purpose is to provide skills in areas related to prospecting, sales force automation technology, time and territory management, and managing customer follow-up.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSLS 4500 International Sales Negotiation**

[3 credit hours]

This course is designed to explore the cultural and business implications of a sales career within an international or cross-cultural setting. Students will work in an applied setting engaging in role-playing and company analysis to understand the unique characteristics of this context. Prerequisite: Junior standing

**PSLS 4710 Salesforce Leadership**

[3 credit hours]

The role and functions of the first line sales manager will be examined, including sales force size and organization, and management of the sales force. Issues related to hiring, training, supervising, compensating and evaluating salespersons are also emphasized.

**Prerequisites:** PSLS 3440 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSLS 4740 Advanced Sales**

[3 credit hours]

This course provides in depth study of advanced selling concepts including relationship management, account management, strategic selling, team selling and selected current topics. The course includes business presentations, field work, role playing and case studies.

**Prerequisites:** (PSLS 3440 with a minimum grade of D- and PSLS 3450 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PSLS 4940 Integrative Capstone: Sales Internship**

[3 credit hours]

Receive practical sales experiences working in a business environment.

**Prerequisites:** PSLS 3440 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## BBA Digital Marketing

Contact: Irena Pentina

The digital marketing specialization provides students with the managerial and technical skills for successful careers in the networked economy including Web design and maintenance as well as a study of business intelligence management in an e-commerce environment, including the use of data mining and warehousing tools for market analysis and business decision supports. These competencies are essential for business professionals in fields such as marketing, financial services, international business, purchasing, information systems, operations management and professional sales.

Code	Title	Hours
<b>Required Courses</b>		
EBUS 3090	Doing Business Digitally	3
EBUS 3180	Web Design and Data Analytics	3
EBUS 4040	Digital Business Intelligence	3
EBUS 4150	Social Media Marketing	3
<b>Electives</b>		
Select one of the following career tracks:		9
<i>Digital Technology Track</i>		
INFS 3380	Web Application Development I	
INFS 3780	Enterprise Wide Information Systems Management	
Select INFS 3240 when available or an INFS major elective.		
<i>Digital Marketing Applications Track</i>		
MKTG 3280	Internet Marketing	
Select two of the following:		
MKTG 3260	Mobile Marketing	
MKTG 4980	Special Topics	
MKTG 4940	Marketing Internship	
Total Hours		21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan		15
Hours		15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan		16
Hours		16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan		16
Hours		16

### Fourth Term

See pre-business/lower division requirements BBA plan		15
Hours		15

### Fifth Term

BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

### Sixth Term

BUAD 3470	The Legal And Ethical Environment Of Business	3
EBUS 3090	Doing Business Digitally	3
MKTG or INFS Career Track Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

### Seventh Term

EBUS 3180	Web Design and Data Analytics	3
EBUS 4040	Digital Business Intelligence	3
MKTG or INFS Career Track Major Elective <sup>3</sup>		3
Core Elective <sup>1</sup>		3
Non-US Diversity		3
Hours		15

### Eighth Term

BUAD 4020	Senior Business Policy Forum	3
EBUS 4150	Social Media Marketing	3
MKTG or INFS Career Track Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

<sup>3</sup> Select between Digital Technology Track (INFS) or Digital Marketing Applications Track (MKTG). See degree audit for course selection.

## BBA International Business

Thomas Sharkey and Sam Okoroafo, departmental mentors

The international business area of specialization plays a key role in preparing future business managers for today's dynamic global marketplace. The program provides training for careers in small, mid-sized and large companies and government and international agencies with a global orientation, particularly multinational corporations, export-

import firms, banks, transportation and logistics firms, and government and international agencies involved in international trade, finance and economic development.

Code	Title	Hours
<b>Required Courses</b>		
IBUS 3600	International Management	3
IBUS 4360	Global Business	3
MKTG 3140	International Marketing	3
FINA 3500	International Business Finance <sup>1</sup>	3
<b>Electives</b>		
Select two of the following:		6
BLAW 3670	International Business Law	
IBUS 3150	Understanding Cultural Differences For Business	
MKTG 3260	Mobile Marketing	
MKTG 4220	International Sourcing, Logistics And Transportation	
PSLS 4500	International Sales Negotiation	
IBUS 4100	Study Abroad Program <sup>2</sup>	
<b>Internship Elective</b>		
IBUS 4940	Internship In International Business II (or 3000/4000 level Business Elective)	3
Total Hours		21

<sup>1</sup> Students may replace this course with MKTG 4220 with departmental approval.

<sup>2</sup> Other courses subject to approval as electives, including study abroad courses and IBUS 4100.

## Foreign Language Requirements for International Business Area of Specialization

Students with an area of specialization in international business must demonstrate foreign language proficiency by satisfying one of the following requirements:

1. Completing four years of one foreign language in high school with a grade of B or higher in each course; or
2. Completing a university-level fourth semester (2150 or Intermediate II) foreign language course; or
3. Have a proficiency in a native language other than English.

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15

## Second Term

See pre-business/lower division requirements BBA plan.		16
Hours		16

## Third Term

See pre-business/lower division requirements BBA plan.		16
Hours		16

## Fourth Term

See pre-business/lower division requirements BBA plan.		15
Hours		15

## Fifth Term

BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

## Sixth Term

BUAD 3470	The Legal And Ethical Environment Of Business	3
IBUS 3150	Understanding Cultural Differences For Business	3
IBUS 3600	International Management	3
Minor/Business Elective <sup>2</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		15

## Seventh Term

FINA 3500	International Business Finance	3
MKTG 3140	International Marketing	3
IBUS Major Elective <sup>3</sup>		3
Core Elective <sup>1</sup>		3
Core Elective Foreign Language Requirement <sup>1</sup>		3
Hours		15

## Eighth Term

BUAD 4020	Senior Business Policy Forum	3
IBUS 4360	Global Business	3
IBUS 4940	Internship In International Business II (or 3/4XXX level Business Elective (Pre-requisite: permission)	3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved general education/university core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.



## BBA Marketing

The marketing specialization provides the student with the skills to make decisions about product design and quality, pricing, channels of distribution, advertising and personal selling in ways that enhance consumer satisfaction and further the goals of the organization. The student learns to approach problems with a clear understanding of the relationship between marketing and other business functions.

Code	Title	Hours
<b>Required Courses</b>		
MKTG 3850	Buyer Behavior And Relationship Marketing	3
MKTG 3880	Marketing Research And Data-Based Management	3
MKTG 4130	Marketing Analysis And Decision Making	3
<b>Electives</b>		
Select two courses from module I and an additional two courses from either module I or module II:		12
<i>Module I</i>		
MKTG 3140	International Marketing	
MKTG 3280	Internet Marketing	
MKTG 3690	Principles Of Marketing Communications	
MKTG 4540	Business Marketing	
MKTG 4940	Marketing Internship	
PSLS 3440	Professional Sales	
<i>Module II</i>		
MKTG 3130	Supply Chain Management	
MKTG 3260	Mobile Marketing	
MKTG 3870	Advertising Strategy	
MKTG 3910	Direct Marketing	
MKTG 3920	Sports Marketing	
MKTG 4220	International Sourcing, Logistics And Transportation	
MKTG 4980	Special Topics	
MKTG 4990	Independent Study	
PSLS 3080	Purchasing And Business Relationship Management	
PSLS 4710	Salesforce Leadership	
PSLS 4500	International Sales Negotiation	
Total Hours		21

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body:** Association to Advance Collegiate Schools of Business (AACSB) International.

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
Hours		15

### Second Term

See pre-business/lower division requirements BBA plan.		16
Hours		16

### Third Term

See pre-business/lower division requirements BBA plan.		16
Hours		16

### Fourth Term

See pre-business/lower division requirements BBA plan.		15
Hours		15

### Fifth Term

BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 3470	The Legal And Ethical Environment Of Business	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

### Sixth Term

BUAD 3020	Principles Of Manufacturing And Service Systems	3
MKTG 3850	Buyer Behavior And Relationship Marketing	3
MKTG Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

### Seventh Term

MKTG 3880	Marketing Research And Data-Based Management	3
MKTG Major Elective <sup>3</sup>		3
MKTG Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Non-US Diversity <sup>1</sup>		3
Hours		15

### Eighth Term

BUAD 4020	Senior Business Policy Forum	3
MKTG 4130	Marketing Analysis And Decision Making	3
MKTG Major Elective <sup>3</sup>		3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

<sup>3</sup> Marketing major elective including internship, see degree audit for course selection.

# BBA Professional Sales

Ellen Pullins, departmental mentor

In business, nothing happens until somebody sells something. Sales is the part of a firm that is responsible for generating the revenue. The sales force is the direct link between the firm and its customers. Professional salespeople consult with customers to understand their business, needs and problems, and offer specific solutions to each customer's situation. The professional sales area of specialization prepares students for distinguished careers in business-to-business selling.

Code	Title	Hours
<b>Required Professional Sales Courses</b>		
PSLS 3080	Purchasing And Business Relationship Management	3
PSLS 3440	Professional Sales	3
PSLS 3450	Sales Technologies and Strategies	3
PSLS 4710	Salesforce Leadership	3
PSLS 4740	Advanced Sales	3
MKTG 4540	Business Marketing <sup>1</sup>	3
or PSLs 4500	International Sales Negotiation	
PSLS 4940	Integrative Capstone: Sales Internship	3
<b>Recommended Courses towards General Education/University Core Requirements</b>		
COMM 1010	Comm Principles And Practices	
PHIL 1020	Critical Thinking	
PSY 1010	Principles Of Psychology	
SOC 1010	Introduction To Sociology	
Total Hours		21

<sup>1</sup> Select one from these two courses. Dual majors may also be able to utilize another course from their other major.

Below is a sample plan of study beginning with the fifth term. Please see pre-business/lower division requirements BBA plan (p. 195) for terms one through four and additional information. Consult your degree audit for your program requirements.

**Accrediting Body: Association to Advance Collegiate Schools of Business (AACSB) International.**

Course	Title	Hours
<b>First Term</b>		
See pre-business/lower division requirements BBA plan.		15
	Hours	15
<b>Second Term</b>		
See pre-business/lower division requirements BBA plan.		16
	Hours	16
<b>Third Term</b>		
See pre-business/lower division requirements BBA plan.		16
	Hours	16

## Fourth Term

See pre-business/lower division requirements BBA plan.	15
Hours	15

## Fifth Term

BUAD 3000	Career Development II	1
BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3040	Principles Of Financial Management	3
BUAD 3470	The Legal And Ethical Environment Of Business	3
Arts/Humanities Core <sup>1</sup>		3
Hours		16

## Sixth Term

BUAD 3020	Principles Of Manufacturing And Service Systems	3
PSLS 3440	Professional Sales	3
PSLS 3450	Sales Technologies and Strategies	3
Minor/Business Elective <sup>2</sup>		3
Core Elective <sup>1</sup>		3
Hours		15

## Seventh Term

PSLS 3080	Purchasing And Business Relationship Management	3
PSLS 4710	Salesforce Leadership	3
PSLS 4940	Integrative Capstone: Sales Internship	3
Minor/Business Elective <sup>2</sup>		3
Non-US Diversity <sup>1</sup>		3
Hours		15

## Eighth Term

BUAD 4020	Senior Business Policy Forum	3
MKTG 4540	Business Marketing	3
PSLS 4740	Advanced Sales	3
Minor/Business Elective <sup>2</sup>		3
Hours		12
Total Hours		120

<sup>1</sup> Select from approved University core course work, see degree audit for course selection.

<sup>2</sup> Minor elective or 3000/4000 level Business elective if no Business minor is selected.

# Minors

## Business Minor or Business Electives for Business Students

9 hours

As part of the minimum 10 course required in the area of specialization requirement in the B.B.A. degree, students complete 3 junior/senior level Business electives or a 3 courses toward an approved Business minor

in addition to the 7 courses required in their major. A second Business minor may be completed with 9 additional hours. Required Business Core BUAD courses serve as the prerequisite 4th course to meet minor requirements. Minors which include courses outside of the college will require more than 3 additional courses.

The following minors are **ONLY** available for College of Business and Innovation students. Students cannot duplicate credit in their minor, area of specialization and upper division core. The minor consists of three courses (9 hours), unless otherwise noted. Select the following link for Business minors for **non-business** students Business minors for non-business majors (p. 236).

#### Degrees Offered

- Accounting Minor (p. 233)
- Business Information Security (CyberSecurity) Minor (p. 233)
- Business Law Minor (p. 233)
- Commercial Real Estate Minor (p. 233) (Not all courses currently being offered.)
- Digital Marketing (Electronic Commerce) Minor (p. 233)
- Enterprise Resource Management (p. 234)
- Entrepreneurship, Family, & Small Business Minor (p. 234)
- Finance Minor (p. 234)
- Financial Data Analytics (p. 234)
- Financial Services Minor (p. 234)
- Information Systems Minor (p. 234)
- Insurance and Risk Management Minor (p. 235)
- International Business Minor (p. 235)
- Management Minor (p. 235)
- Marketing Minor (p. 235)
- Professional Sales Minor (p. 235)
- Operations and Supply Chain Management Minor (p. 235)
- Sustainability Minor (p. 236)

## Accounting Minor

Non-Accounting major Accounting courses are currently not being offered. College of Business and Innovation students who wish to add an Accounting minor must meet the requirements for the Accounting courses currently being offered, including all pre-requisites and GPA requirements.

Students who meet the eligibility requirements to enroll in Accounting major courses (minimum 2.75 higher ed GPA and 2.75 in BUAD 2040 + BUAD 2050 or equivalent courses), may select any 3 ACCT major courses to meet the requirements of an ACCT minor beginning with ACCT 3100.

## Business Information Security Minor (CyberSecurity)

**Business Information Security** (CyberSecurity) requires 9 credit hours.

Cyber Security is a rapidly growing field which is very important to business and governmental organizations. Information security jobs,

in both the private and public sectors, are growing at a very fast pace, based on bureau of labor statistics data and informal feedback from the departmental ISAC advisory group. Information Systems professionals are increasingly being required to have exposure in cyber security.

BUAD 2020 is a required pre-requisite course taken as part of the Business CORE.

#### Business Information Security (CyberSecurity) Requirements

Code	Title	Hours
INFS 3370	Business Data Communications	3
INFS 3400	Principles of Information Systems Security	3
INFS 4100	Business Intelligence Using Big Data	3
Total Hours		9

## Business Law Minor

Code	Title	Hours
<b>Required Courses</b>		
Select three of the following:		9
BLAW 3550	Legal And Safety Compliance Issues In Human Resource Management	
BLAW 3570	The Laws Of Structuring And Operating A Business	
BLAW 3670	International Business Law (Not Currently Offered)	
BLAW 4570	Legal And Ethical Aspects Of Managing Innovation And Technology	
BLAW 4580	Detection And Prevention Of Deceptive Business Practices	
MGMT 3770	Ethics In Leadership And Management	
Total Hours		9

## Commercial Real Estate Minor

Code	Title	Hours
<b>Required Courses</b>		
FINA 3660	Real Estate Principles, Practices And Finance	3
FINA 3670	Real Estate Valuation	3
FINA 3680	Real Estate Law, Insurance And Taxes	3
Not all courses currently being offered, therefore minor not available.		
Total Hours		9

## Digital Marketing (Electronic Commerce) Minor

Code	Title	Hours
<b>Required Courses</b>		
EBUS 3090	Doing Business Digitally	3
EBUS 3180	Web Design and Data Analytics	3
<b>Elective</b>		
Select one of the following:		3
EBUS 4040	Digital Business Intelligence	
MKTG 3280	Internet Marketing	

INFS 3380	Web Application Development I	
EBUS 4150	Social Media Marketing (With department approval)	
Total Hours		9

## Enterprise Resource Management Minor

BUAD 2020 is a required pre-requisite course for the Enterprise Resource Management minor and is taken as part of the Business CORE

Code	Title	Hours
INFS 3780	Enterprise Wide Information Systems Management	3
INFS 4100	Business Intelligence Using Big Data	3
INFS 4680	Enterprise Systems Implementation and Integration	3
Total Hours		9

## Entrepreneurship, Family, & Small Business Minor

Code	Title	Hours
<b>Required Courses</b>		
EFSB 4590	Entrepreneurship and Small Business Management	3
EFSB 4010	Growing Family And Entrepreneurial Businesses	3
EFSB 3480	Entrepreneurial Finance	3
With departmental approval, the following may be used as a substitution in the minor – consult an adviser.		
EFSB 4690	Innovation and Technology Commercialization	
EFSB 4790	Franchising	
Total Hours		9

## Finance Minor

Code	Title	Hours
<b>Required Courses</b>		
FINA 3480	Investments	3
FINA 4080	Intermediate Financial Management	3
FINA 4090	Financial Markets And Institutions	3
Total Hours		9

## Financial Data Analytics Minor

This Minor is specifically designed for Accounting and Finance majors. Data and business analytics has become a significant element of the accounting and finance occupations. This minor will help our accounting and finance majors to improve their skills and align it with the market needs.

Code	Title	Hours
BUAD 3040	Principles Of Financial Management (This course is a pre-requisite course taken as part of the Business Core.)	
BUAD 2020	Information Technology Management (This course is a pre-requisite course taken as part of the Business Core.)	
FINA 3890	Financial Modeling with Excel (Required)	3
OSCM 4250	Business Analytics-Techniques and Cases (Required)	3
Elective - Choose one of the following:		3
INFS 3150	Principles Of Structured Computer Programming And Problem Solving	
INFS 3400	Principles of Information Systems Security	
INFS 4100	Business Intelligence Using Big Data	
Total Hours		9

## Financial Services Minor

Code	Title	Hours
Select three of the following:		9
FINA 3480	Investments	
FINA 3660	Real Estate Principles, Practices And Finance	
FINA 4090	Financial Markets And Institutions	
FINA 3600	Risk Management	
FINA 3670	Real Estate Valuation	
FINA 4870	Advanced Financial Institutions & Markets	
FINA 3610	Life And Health Insurance	
FINA 4100	Security Analysis & Portfolio Management	
FINA 4890	Financial And Estate Planning	
FINA 4900	Seminar In Finance	
PSLS 3440	Professional Sales (with department approval)	
Total Hours		9

## Information Systems Minor

Code	Title	Hours
<b>Required Course</b>		
Select one of the following:		3
INFS 3250	Business Data Analysis & Reporting	
INFS 3150	Principles Of Structured Computer Programming And Problem Solving	
<b>Electives</b>		
Select two of the following:		6
INFS 3150	Principles Of Structured Computer Programming And Problem Solving	
INFS 3250	Business Data Analysis & Reporting	
INFS 3370	Business Data Communications	
INFS 3400	Principles of Information Systems Security	
INFS 3770	Introduction To Database Systems	
INFS 3780	Enterprise Wide Information Systems Management	

INFS 3980	Contemporary Topics	
INFS 4100	Business Intelligence Using Big Data	
INFS 4300	Web Application Development II	
INFS 4320	Information Systems Planning And Outsourcing Management	
INFS 4620	Enterprise Database Systems	
Total Hours		9

## Insurance and Risk Management Minor

Code	Title	Hours
<b>Required Courses</b>		
FINA 3600	Risk Management	3
FINA 3610	Life And Health Insurance	3
FINA 4890	Financial And Estate Planning	3
Total Hours		9

## International Business Minor

Code	Title	Hours
Select three of the following, taking into consideration any prerequisites:		9
BLAW 3670	International Business Law	
FINA 3500	International Business Finance	
IBUS 3600	International Management	
IBUS 4360	Global Business	
IBUS 3150	Understanding Cultural Differences For Business	
MKTG 3140	International Marketing	
MKTG 3260	Mobile Marketing	
MKTG 4220	International Sourcing, Logistics And Transportation	
PSLS 4500	International Sales Negotiation	
Total Hours		9

## Management Minor

Code	Title	Hours
Select three of the following:		9
HURM 3220	Human Resource Management	
MGMT 3630	Conflict Management: Mediation & Negotiations	
MGMT 3770	Ethics In Leadership And Management	
MGMT 4210	Leading And Managing Organizational Improvement	
MGMT 4250	Performance Management For Individuals And Teams	
MGMT 4780	Leading and Managing People (Recommended)	
<i>Other courses may be available for substitution. Please see an advisor.</i>		
Total Hours		9

## Marketing Minor

Code	Title	Hours
<b>Required</b>		
MKTG 3850	Buyer Behavior And Relationship Marketing	3
or MKTG 3880	Marketing Research And Data-Based Management	
<b>Electives</b>		
Select two of the following:		6
MKTG 3140	International Marketing	
MKTG 3280	Internet Marketing	
MKTG 3690	Principles Of Marketing Communications	
MKTG 4540	Business Marketing	
MKTG 3130	Supply Chain Management	
MKTG 3260	Mobile Marketing	
MKTG 3870	Advertising Strategy	
MKTG 3910	Direct Marketing	
MKTG 3920	Sports Marketing	
MKTG 4220	International Sourcing, Logistics And Transportation	
MKTG 4980	Special Topics	
MKTG 4990	Independent Study	
PSLS 3080	Purchasing And Business Relationship Management	
PSLS 3440	Professional Sales	
PSLS 4500	International Sales Negotiation	
PSLS 4710	Salesforce Leadership	
Total Hours		9

## Operations & Supply Chain Management Minor

Code	Title	Hours
<b>Prerequisite</b>		
BUAD 3020	Principles Of Manufacturing And Service Systems	
Select three of the following:		9
OSCM 3340	Quality Management and Process Improvement	
OSCM 3610	Operations Planning and Scheduling	
OSCM 3660	Strategic Sourcing	
OSCM 4150	Supply Chain Analytics and Cases	
OSCM 4250	Business Analytics-Techniques and Cases	
OSCM 4760	Sim Mod/Anlys Sply Chn Systm	
MKTG 3130	Supply Chain Management	
MKTG 4220	International Sourcing, Logistics And Transportation	
Total Hours		9

## Professional Sales Minor



Code	Title	Hours
<b>Required</b>		
PSLS 3440	Professional Sales	3
<b>Electives</b>		
Select two of the following:		6
PSLS 3080	Purchasing And Business Relationship Management	
PSLS 3450	Sales Technologies and Strategies	
PSLS 4500	International Sales Negotiation	
PSLS 4710	Salesforce Leadership	
PSLS 4740	Advanced Sales	
MKTG 4540	Business Marketing	
Total Hours		9

## Sustainability Minor

This is an interdisciplinary minor combining courses from the College of Business as well as the College of Natural Sciences and Mathematics, the College of Engineering, and the College of Arts and Letters. The minor requirements are the same for any student regardless of what is listed as their "home" college. Because of this, the minor requirements are somewhat different from other minors in the College of Business.

Of the 15 credit hours (5 courses) required in the Sustainability minor, 12 credit hours (4 courses) must be unique to other required courses in a student's degree program. This means that only one course may "double dip" as another requirement in their degree program – be that a major, minor or other degree requirement. If more than one course naturally occurs as a requirement in their degree program, the student would need to select additional course(s) from the list of approved electives for the minor so that they achieve the 12 unique hours. Both the College of Business and Innovation and a student's home college will review the minor requirements to certify completion for graduation.

Code	Title	Hours
<b>Program Requirements - 5 Courses - 15 hours</b>		
<i>Required - 4 Courses - 12 hours</i>		
GNEN 1500	Sustainability Living	3
EEES 2010	Introduction To Environmental Studies	3
BUAD 3500	Sustainable Business Practices	3
PHIL 3180	Environmental Ethics	3
<i>Elective - 1 Course - 3 hours - Select one from:</i>		3
BUAD 3020	Principles Of Manufacturing And Service Systems	
IBUS 4360	Global Business	
CHEM 1100	Chemistry And Society	
EEES 1150	Marine Biology	
EEES 2150	Biodiversity	
EEES 1010	Physical Geology	
EEES 2400	Oceanography And Water Resources	
EEES 2200	Climate Change	
EEES 1050	Geological Hazards And The Environment	
EEES 1130	Down To Earth: Environmental Science	
EEES 1170	Microbes And Society	

CHEE 4120	Biofuels	
CIVE 4690	Sustainability Engineering	
MIME 4410	Alternative Energy	
MIME 4820	Sustainability Analysis and Design	
ECON 3240	Environmental Economics	
GEPL 1100	Environmental Geography	
GEPL 3900	Environmental Planning	
GEPL 4160	Patterns Of World Development	
Total Hours		15

## Business Minors for Non-Business Students

The College of Business and Innovation offers a general minor and eight specialty minors (accounting; digital marketing; entrepreneurship, family and small business; international business; marketing; professional sales; operations/supply chain management and sustainability) for students in non-business programs at The University of Toledo.

These minors are recommended for students who want to enhance their academic programs with business-related course work. Students taking courses in the business minor must meet course prerequisite requirements. These minors are designed specifically for non-business students and should not be confused with the individual minors offered for College of Business and Innovation students. **Students can complete a maximum of two minors and may take no more than one course that fulfills the requirements of both minors.** Students should contact advisors in the College of Business and Innovation for additional details about the course requirements of business minors and contact advisors in their home college to determine how the business minor will fit into their degree curriculum.

## Degrees Offered

- Accounting Minor for Non-Business Students (p. 236)
- Digital Marketing Minor for Non-Business Students (p. 237)
- Entrepreneurship, Family, and Small Business Minor for Non-Business Students (p. 237)
- General Minor for Non-Business Students (p. 237)
- International Business Minor for Non-Business Students (p. 238)
- Marketing for Non-Business Students (p. 238)
- Operations Management/Supply Chain Management for Non-Business Students (p. 239)
- Professional Sales Minor for Non-Business Students (p. 239)
- Sustainability Minor for non-business students (p. 239)

## Accounting Minor for Non-Business Students

The accounting minor for non-business students requires 15 credit hours. A grade of C (2.0) or higher is required in all courses used to fulfill the accounting minor requirements. Prerequisites for all courses must be fulfilled.

Code	Title	Hours
<b>Required Course</b>		
ACCT 3100	Financial Accounting and Analysis <sup>1</sup>	3
<b>Electives</b>		
Select four of the following:		12
ACCT 3110	Intermediate Financial <sup>2</sup>	
ACCT 3310	Accounting Information Systems And Controls <sup>2</sup>	
ACCT 3210	Individual Taxation <sup>2</sup>	
ACCT 3320	Cost Accounting <sup>2</sup>	
ACCT 3120	Intermediate Financial 2 <sup>3</sup>	
FINA 4080	Intermediate Financial Management <sup>4</sup>	
Total Hours		15

<sup>1</sup> Prerequisite: Junior standing; a higher education GPA of 2.750 or higher and a 2.750 or higher GPA in BUAD 2040 and BUAD 2050 (or equivalent courses), which must include a grade of C (2.0) or higher in BUAD 2040 and BUAD 2050 (or equivalent courses).

<sup>2</sup> Prerequisite: ACCT 3100 with a grade of C (2.0) or better.

<sup>3</sup> Prerequisite: ACCT 3110 with a grade of C (2.0) or better.

<sup>4</sup> Prerequisite: BUAD 3040 with a grade of C (2.0) or better.

## Digital Marketing Minor for Non-Business Students

The digital marketing minor requires:

- Basic business computer proficiency (e.g., BUAD 1020, CMPT 1100 or equivalent);
- MIME 2600 or ECON 1200, or equivalent,
- Meet all course prerequisites; and
- 15 credit hours from selected EBUS- and INFS-related courses.

A grade of "C" (2.00) or higher is required in all courses.

Code	Title	Hours
<b>Required</b>		
EBUS 3090	Doing Business Digitally <sup>1</sup>	3
INFS 3250	Business Data Analysis & Reporting <sup>2</sup>	3
<b>Electives</b>		
Select 9 hours of the following:		9
INFS 3770	Introduction To Database Systems <sup>1</sup>	
EBUS 3180	Web Design and Data Analytics <sup>1</sup>	
INFS 3370	Business Data Communications <sup>3</sup>	
MKTG 3260	Mobile Marketing <sup>4</sup>	
MKTG 3280	Internet Marketing <sup>5</sup>	
INFS 3980	Contemporary Topics	
BUAD 2020	Information Technology Management	
Total Hours		15

<sup>1</sup> Prerequisite: junior standing.

<sup>2</sup> Prerequisite: junior standing and BUAD 1020 or equivalent.

<sup>3</sup> Prerequisite: BUAD 2020.

<sup>4</sup> Prerequisite: BUAD 2080.

<sup>5</sup> Prerequisite: BUAD 3010.

## Entrepreneurship, Family, and Small Business Minor for Non-Business Students

Prerequisites for all courses must be fulfilled. A grade of "C" (2.00) or higher is required in all courses.

Code	Title	Hours
<b>Required Business Courses</b>		
EFSB 3500	Introduction To Entrepreneurship for Non-Business Students	3
BUAD 2040	Financial Accounting Information	3
or ACTG 1040	Principles Of Financial Accounting	
EFSB 3480	Entrepreneurial Finance	3
EFSB 4590	Entrepreneurship and Small Business Management	3
EFSB 4010	Growing Family And Entrepreneurial Businesses	3
<b>Business Elective</b>		
Select one of the following:		3
BUAD 3010	Principles Of Marketing	
EFSB 4690	Innovation and Technology Commercialization	
EFSB 4790	Franchising	
Total Hours		18

## General Minor for Non-Business Students

Code	Title	Hours
<b>Required Prerequisite Courses <sup>1</sup></b>		
<i>Economics</i>		
Select one of the following:		
ECON 1150	Principles Of Macroeconomics	
& ECON 1200	and Principles Of Microeconomics <sup>2</sup>	
MIME 2600	Engineering Economics (or equivalent)	
<i>Mathematics</i>		
Select from any UT CORE Math course except statistics		
<i>Computing</i>		
Select one of the following:		
BUAD 1020	Micro-Computer Applications In Business	
CMPT 1100	Microsoft Office Applications	
or approved equivalent		
<i>Business Statistics</i>		
Select one of the following:		
BUAD 2060	Business Statistics <sup>2</sup>	
MATH 2600	Introduction To Statistics	
or equivalent		
<b>Required Foundation Course <sup>3</sup></b>		

BUAD 2040	Financial Accounting Information <sup>2</sup>	3
or ACTG 1040	Principles Of Financial Accounting	
<b>Additional Requirements<sup>3,4</sup></b>		
Select 3 courses from the following with at least one course at 3000 level to avoid additional coursework: <sup>5</sup>		9
BUAD 1010	Introduction To Business	
or BMGT 101	Business Principles	
BUAD 2050	Accounting For Business Decision-Making <sup>2</sup>	
or ACTG 1050	Principles Of Management Accounting	
BUAD 2070	Business Analytics <sup>2</sup>	
BUAD 2080	Global Environment Of Business	
or BMGT 2110	Managing In A Global Economy	
BUAD 3010	Principles Of Marketing <sup>2</sup>	
or MARS 101	Marketing Principles	
BUAD 3020	Principles Of Manufacturing And Service Systems <sup>2</sup>	
BUAD 3030	Managerial And Behavioral Processes In Organizations	
BUAD 3040	Principles Of Financial Management <sup>2</sup>	
BUAD 3470	The Legal And Ethical Environment Of Business	
or BMGT 231	Legal Environment Of Business	
BUAD 2020	Information Technology Management	
Select two additional 3000/4000 level Business courses <sup>6</sup>		6
Total Hours		18

<sup>1</sup> A minimum cumulative GPA of 2.25 is required in the following prerequisite courses or their equivalents. A student who does not meet the minimum standards but has at least a cumulative 2.0 in the prerequisites will be reviewed by the College of Business and Innovation on an individual basis.

<sup>2</sup> Prerequisites for an MBA can also be fulfilled by completing the indicated courses with a minimum grade of C (2.0).

<sup>3</sup> Beyond the prerequisite courses above, at least one of which must be at the 3000 level to avoid additional coursework. A grade of C (2.0) or higher is required in each of the following courses.

<sup>4</sup> At least three of the five courses selected to fulfill the additional minor in business requirements must be at the 3000 or 4000 level.

<sup>5</sup> Approved associate degree equivalents courses are shown as the second course. (Prerequisites for selected courses must be fulfilled.)

<sup>6</sup> Select **two** additional 3000 or 4000 level courses from the 6 listed above or select two courses at the 3000 or 4000 level from ACCT, FINA, INFS, MGMT, EFSB, IBUS, EBUS, OSCM, HURM, PSLs, BLAW or MKTG to complete the additional requirements. (Prerequisites for selected courses must be fulfilled.)

## International Business Minor for Non-Business Students

The international business minor for non-business students requires 18 to 21 hours of business courses (including international business electives). Prerequisites for all courses must be fulfilled. A grade of "C" (2.00) or higher is required in all courses.

Code	Title	Hours
<b>Required Course in Economics</b>		
Select one of the following: <sup>1</sup>		
ECON 1150 & ECON 1200	Principles Of Macroeconomics and Principles Of Microeconomics	
MIME 2600	Engineering Economics (or equivalent)	
<b>Required Business Courses</b>		
BUAD 2080	Global Environment Of Business (Prerequisite: Sophomore standing)	3
Select two of the following:		6
BUAD 3010	Principles Of Marketing <sup>2</sup>	
BUAD 3030	Managerial And Behavioral Processes In Organizations (Prerequisite: Junior standing)	
BUAD 3040	Principles Of Financial Management <sup>3</sup>	
<b>International Business Electives</b>		
Select at least two of the following:		6
IBUS 3600	International Management (Prerequisite: Junior standing) <sup>4</sup>	
MKTG 3140	International Marketing <sup>5</sup>	
FINA 3500	International Business Finance <sup>6</sup>	
Select one of the following pending availability or select all three courses from previous section.		3
IBUS 3150	Understanding Cultural Differences For Business (Prerequisite: Junior standing)	
IBUS 4100	Study Abroad Program <sup>7</sup>	
IBUS 4180	North American Business Practices (Prerequisite: Junior standing)	
MKTG 3260	Mobile Marketing (Prerequisite: Junior standing)	
MKTG 4220	International Sourcing, Logistics And Transportation <sup>8</sup>	
BLAW 3670	International Business Law <sup>4</sup>	
Total Hours		18

<sup>1</sup> These are not business course hours and do not count toward the 18 hours of business courses required in the program.

<sup>2</sup> Prerequisites: ECON 1200 Or MIME 2600, Junior standing.

<sup>3</sup> Prerequisite: BUAD 2040 Financial Accounting Information.

<sup>4</sup> Prerequisite: BUAD 3030.

<sup>5</sup> Prerequisite: BUAD 3010.

<sup>6</sup> Prerequisite: BUAD 3040.

<sup>7</sup> Subject to approval of departmental chair or IB faculty adviser. Prerequisite: Permission of Chair and Faculty.

<sup>8</sup> Prerequisite: BUAD 2080.

## Marketing for Non-Business Students

The marketing minor for non-business students requires 18 hours. Prerequisites for all courses must be fulfilled. A grade of "C" (2.00) or higher is required in all business courses.

Code	Title	Hours
<b>Required Course: Economics Pre-requisite</b>		
ECON 1200	Principles Of Microeconomics	3
or MIME 2600	Engineering Economics	
<b>Required Marketing Courses</b>		
BUAD 3010	Principles Of Marketing	3
MKTG 3850	Buyer Behavior And Relationship Marketing	3
<b>Marketing Electives</b>		
Select three of the following:		9
MKTG 3140	International Marketing	
MKTG 3280	Internet Marketing	
MKTG 3690	Principles Of Marketing Communications	
MKTG 3920	Sports Marketing	
MKTG 4540	Business Marketing	
PSLS 3440	Professional Sales	
Total Hours		18

## Operations Management/Supply Chain Management for Non-Business Students

Students must complete statistics and BUAD 3020 or equivalent as prerequisite and 15 credit hours.

Code	Title	Hours
Select 15 hours of the following:		15
MKTG 3130	Supply Chain Management	
EBUS 3090	Doing Business Digitally	
MKTG 4220	International Sourcing, Logistics And Transportation	
OSCM 3660	Strategic Sourcing	
OSCM 4420	Service Operations Management	
OSCM 3340	Quality Management and Process Improvement	
OSCM 3610	Operations Planning and Scheduling	
Total Hours		15

## Professional Sales Minor for Non-Business Students

The professional sales minor for non-business students requires 15 hours. Prerequisites for all courses must be fulfilled. If a student elects to take BUAD 3010 as an elective, ECON 1200 or MIME 2600 is required as an additional pre-requisite. A grade of "C" (2.00) or higher is required in all courses.

Code	Title	Hours
<b>Required Business Courses</b>		
PSLS 3440	Professional Sales	3
PSLS 3450	Sales Technologies and Strategies	3
PSLS 4740	Advanced Sales	3
<b>Business Elective</b>		

Select two of the following:		6
BUAD 3010	Principles Of Marketing	
PSLS 3080	Purchasing And Business Relationship Management	
PSLS 4710	Salesforce Leadership	
Total Hours		15

## Sustainability Minor for non-business students

This is an interdisciplinary minor combining courses from the College of Business as well as the College of Natural Sciences and Mathematics, the College of Engineering, and the College of Arts and Letters. The minor requirements are the same for any student regardless of what is listed as their "home" college. Because of this, the minor requirements are somewhat different from other minors in the College of Business.

Of the 15 credit hours (5 courses) required in the Sustainability minor, 12 credit hours (4 courses) must be unique to other required courses in a student's degree program. This means that only one course may "double dip" as another requirement in their degree program – be that a major, minor or other degree requirement. If more than one course naturally occurs as a requirement in their degree program, the student would need to select additional course(s) from the list of approved electives for the minor so that they achieve the 12 unique hours. Both the College of Business and a student's home college will review the minor requirements to certify completion for graduation.

General advising issues should be directed to the College of Business and Innovation academic advisors in SB 3130.

Code	Title	Hours
<b>Program Requirements – 5 courses – 15 hours</b>		
<i>Required - 4 Courses - 12 hours</i>		
GNEN 1500	Sustainability Living (Spring Term)	3
EEES 2010	Introduction To Environmental Studies	3
BUAD 3500	Sustainable Business Practices (Fall Term)	3
PHIL 3180	Environmental Ethics (Spring Term)	3
<i>Elective - 1 course - 3 hours – Select one from:</i>		3
BUAD 3020	Principles Of Manufacturing And Service Systems	
IBUS 4360	Global Business	
CHEM 1100	Chemistry And Society	
EEES 1150	Marine Biology	
EEES 2150	Biodiversity	
EEES 1010	Physical Geology	
EEES 2400	Oceanography And Water Resources	
EEES 2200	Climate Change	
EEES 1130	Down To Earth: Environmental Science	
EEES 1170	Microbes And Society	
CHEE 4120	Biofuels	
CIVE 4690	Sustainability Engineering	
MIME 4410	Alternative Energy	
MIME 4820	Sustainability Analysis and Design	

ECON 3240	Environmental Economics
GEPL 1100	Environmental Geography
GEPL 3900	Environmental Planning
GEPL 4160	Patterns Of World Development

## Workplace Certificates - Non-Degree Granting Programs

While not an official academic designation on a transcript, these workplace certificates have credit-bearing courses which appear on an official transcript and give added value to career goals.

Coursework may also be applied to future degree programs. Review of these scenarios must be discussed with a COBI academic advisor.

### Degrees Offered

- Accounting Technology Workplace Certificate (p. 240)
- Business Management Technology Workplace Certificate (p. 240)
- Computer Network Administration Workplace Certificate (p. 240)
- Computer Software Specialist Workplace Certificate (p. 240)
- Consultative Sales (Post Baccalaureate) Workplace Certificate (p. 240)
- Digital Marketing (Post Baccalaureate) Workplace Certificate (p. 240)
- Financial Planning Workplace Certificate (p. 241)
- Information Services and Support Workplace Certificate (p. 241)
- Programming and Software Development Workplace Certificate (p. 241)
- Web Design Workplace Certificate (p. 241)

### Accounting Technology Workplace Certificate

Code	Title	Hours
ACTG 1040	Principles Of Financial Accounting	3
ACTG 1050	Principles Of Management Accounting	3
ACTG 1200	QuickBooks	3
ACTG 2100	Intermediate Accounting I	3
ACTG 2400	Fundamentals Of Taxation	3
CMPT 1410	Microsoft Excel Spreadsheet Application	2
Total Hours		17

### Business Management Technology Workplace Certificate

Code	Title	Hours
BMGT 1010	Business Principles	3
BMGT 1540	Organizational Behavior	3
BMGT 2010	Workplace Management	3
BMGT 2020	Human Resource Development	3

BMGT 2110	Managing In A Global Economy	3
Total Hours		15

### Computer Network Administration Workplace Certificate

Code	Title	Hours
CMPT 1110	Pc Operating Systems	3
CNET 2100	Microsoft Operating Systems	3
CNET 2150	Computer Hardware	3
CNET 2200	Network Technologies	4
CNET 2400	Network Operating System Support	4
Total Hours		17

### Computer Software Specialist Workplace Certificate

Code	Title	Hours
Under Review, limited course availability.		
CMPT 1410	Microsoft Excel Spreadsheet Application	2
CMPT 1420	Microsoft Access Database Applications	2
CMPT 1430	Microsoft Word	2
CMPT 1440	Microsoft Powepoint Presentation	2
CMPT 2410	Adobe InDesign Desktop Publishing	3
CMPT 2430	Advanced Microsoft Word	2
CMPT 2460	Advanced Microsoft Excel Spreadsheet	2
Total Hours		15

### Consultative Sales (Post Baccalaureate) Workplace Certificate

Code	Title	Hours
<b>Required</b>		
PSLS 3440	Professional Sales	3
PSLS 3450	Sales Technologies and Strategies	3
PSLS 3080	Purchasing And Business Relationship Management	3
<b>Electives</b>		
Select two of the following:		6
BUAD 3010	Principles Of Marketing <sup>1</sup>	
PSLS 4710	Salesforce Leadership	
PSLS 4500	International Sales Negotiation	
MKTG 4540	Business Marketing	
Total Hours		15

<sup>1</sup> Required if student has not taken Marketing Principles.

### Digital Marketing (Post Baccalaureate) Workplace Certificate



Code	Title	Hours
<b>Required</b>		
MKTG 3280	Internet Marketing	3
MKTG 3260	Mobile Marketing	3
EBUS 4150	Social Media Marketing	3
<b>Electives</b>		
Select two of the following:		6
BUAD 3010	Principles Of Marketing <sup>1</sup>	
EBUS 4040	Digital Business Intelligence	
MKTG 3690	Principles Of Marketing Communications	
MKTG 3850	Buyer Behavior And Relationship Marketing	
MKTG 4980	Special Topics	
Total Hours		15

<sup>1</sup> Required if student has not taken Marketing Principles.

## Financial Planning Workplace Certificate

BUAD 2040/ACTG 1040 is also required, if not previously taken, as a prerequisite.

Code	Title	Hours
<b>Required</b>		
FINA 3600	Risk Management	3
FINA 3610	Life And Health Insurance	3
FINA 4890	Financial And Estate Planning	3
<b>Electives</b>		
Select two of the following:		6
BUAD 3040	Principles Of Financial Management <sup>1</sup>	
FINA 3480	Investments	
FINA 4090	Financial Markets And Institutions	
PSLS 3440	Professional Sales	
Total Hours		15

<sup>1</sup> Required if student has not taken Financial Principles.

## Information Services and Support Workplace Certificate

Code	Title	Hours
CMPT 1020	Computer Concepts	4
CMPT 1410	Microsoft Excel Spreadsheet Application	2
CMPT 1420	Microsoft Access Database Applications	2
CNET 2150	Computer Hardware	3
CNET 2200	Network Technologies	4
Total Hours		15

## Programming and Software Development Workplace Certificate

Code	Title	Hours
CMPT 1020	Computer Concepts	4
CMPT 1120	Visual Basic Programming	4
CMPT 2030	C Family Programming	4
CNET 2150	Computer Hardware	3
Total Hours		15

## Web Design Workplace Certificate

Code	Title	Hours
Under Review, limited course availability.		
CMPT 1320	Internet And The World Wide Web	1
CMPT 1400	Dreamweaver Web Page Developmnt	3
CMPT 1500	Flash Web Animation	3
CMPT 1600	Internet Design And Publishing	3
CMPT 1700	Podcasting, Vodcasting, and Blogging	3
CMPT 2620	Web Site Maintenance	3
Total Hours		16

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# COLLEGE OF ENGINEERING

## Undergraduate Catalog

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## Mission Statement

In our unique role as the comprehensive engineering school in Northwest Ohio, the University of Toledo's College of Engineering provides outstanding undergraduate and graduate programs to educate the leaders of tomorrow. We are committed to leadership in the creation and transfer of new knowledge and technologies through the efforts of a diverse faculty, staff and student body.

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**Degrees Offered****Undergraduate Degree Programs**

The College of Engineering offers the following ABET-accredited Bachelor of Science in Engineering degree programs:

- BS in Bioengineering (p. 253)
- BS in Chemical Engineering (p. 256)
- BS in Civil Engineering (p. 261)
- BS in Environmental Engineering (p. 262)
- BS in Computer Science and Engineering (p. 268)
- BS in Electrical Engineering (p. 269)
- BS in Mechanical Engineering (p. 280)

The College of Engineering also offers the following ABET-accredited Bachelor of Science in Engineering Technology degree programs:

- BS in Computer Science and Engineering Technology (p. 271)
- BS in Construction Engineering Technology (p. 272)
- BS in Electrical Engineering Technology (p. 273)
- BS in Information Technology (p. 273)
- BS in Mechanical Engineering Technology (p. 274)

The College of Engineering also offers a Minor in Computer Science and Engineering (p. 270).

Students may wish to consider a dual degree plan within the College of Engineering. Depending on which two curricula are involved, careful planning from the beginning may permit the completion of both degrees with less than a full year of additional study. In any dual degree plan, the student must be accepted by both major departments and have an advisor from each of the two degree programs. With any combination, the curricular requirements of each individual degree must be met.

**Graduate Programs**

The College of Engineering also offers a full range of graduate programs. Refer to the Graduate School (<http://utoledo-public.courseleaf.com/graduate/engineering>) section for information on programs and policies specifically related to graduate students.

**Cooperative (Co-op) Education Program**

Students in the Engineering Science degree programs must complete a cooperative (co-op) educational requirement. The purpose of the co-op program is to provide students with career-related experiences. The program also helps students defray the cost of their education and enhances employment opportunities after graduation. The curriculum in each of the Bachelor of Science in Engineering degree programs is set



up to accommodate four, and in some cases five, co-op assignments. To satisfy the requirement, a student must successfully complete a minimum of three registered, semester-long work experiences, alternating with semesters of coursework. The student pays a \$475 fee when registered for each of the required co-op experiences. Successful completion of each registered work experience appears on the student's transcript. A student with a registered work experience is considered a full time student for that term.

The College will assist students in finding co-op positions, but does not guarantee placement. Elaborations on implementation policies are available in the College's Career Development Center. For students in the Engineering Technology degree programs, participation in the co-op program is optional. Students who wish to participate in this program should contact the Career Development Center in the College of Engineering at 419.530.8050.

#### **Policy: Previous Work Experience for Co-op Credit**

Guidelines:

1. Previous work experience can be counted for only one co-op credit.
2. The work must have occurred within 2 years from the date of the request for approval.
3. Direct from high school students are not eligible for prior work experience credit for co-op.
4. Students and employers are required to complete evaluations based on the work experience.
5. Job duties/descriptions will be reviewed by engineering faculty within the respective departments.

Verification of Work:

Students must submit the following information to their co-op director:

1. Company website with text in English outlining products, services, customers, etc.
2. Letter from the employer on company letterhead including:
  - a. Job Title
  - b. Job Duties/Responsibilities
  - c. Location
  - d. Dates of Employment
  - e. Total number of Hours completed within designated time frame
3. Email Address of the Student's Direct Manager (must be an Engineer and business email address i.e. no gmail, etc.)
4. Email Address of the Student's Human Resource contact (business email address i.e. no gmail, etc.)

*Falsifying work experience for co-op credit is Academic Dishonesty (<http://www.utoledo.edu/dl/students/dishonesty.html>) and will be treated as such in the College.*

**\*\*Policy Effective March 2019**

#### **SPECIAL PROGRAMS FOR UNDERGRADUATES**

- Early Admission to Master of Science in Engineering (p. 282)
- Joint B.S. in Engineering or Engineering Technology/M.B.A. Program (p. 282)
- Minor in Business Administration (p. 283)

- Presumptive Admission Program to the University of Toledo College of Law (p. 283)

## **Accreditation**

The College of Engineering's Bachelor of Science programs in Bioengineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering and Mechanical Engineering are accredited by the Engineering Accreditation Commission (EAC) of ABET, [www.abet.org](http://www.abet.org). (<http://www.abet.org>) The program in Computer Science and Engineering is also accredited by the Computing Accreditation Commission (CAC) of ABET.

The Bachelor of Science programs in Computer Science and Engineering Technology, Construction Engineering Technology, Mechanical Engineering Technology and Electrical Engineering Technology are accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET. In addition, the Bachelor of Science programs in Computer Science and Engineering Technology and Information Technology are accredited by the Computing Accreditation Commission (CAC) of ABET.

## **Admission Requirements**

### **First Time Freshmen**

To be considered for admission to any Bachelor of Science program in Engineering, first time freshman students need a minimum cumulative high school GPA of 3.0 or GED average standard score of 510 in the 2002 format or 730 in the 2014 format with a Mathematical Reasoning sub-score of 190. A minimum ACT composite score of 22 or SAT combined score of 1110 and a minimum ACT math score of 22 or SAT math score of 550 are also required. Students also must successfully complete a minimum of four years of high school mathematics with fourth year emphasis on trigonometry or pre-calculus and high school chemistry. High school physics also is strongly recommended. Students who do not meet the minimum requirements will be considered for admission to an Engineering Technology program or they may choose another University program.

To be considered for admission to one of the Bachelor of Science in Engineering Technology programs or information technology program, first time freshman students need a minimum cumulative high school GPA of 2.5 or GED average standard score of 480 in the 2002 format or 700 in the 2014 format with a Mathematical Reasoning sub-score of 180. A minimum ACT composite score of 21 or SAT combined score of 1070 and a minimum ACT math score of 20 or SAT math score of 510 are also required. Students who do not meet the minimum requirements will be considered for admission to the University College Exploratory Studies program or may choose another University program.

## **Transfer Students**

Transfer students seeking admission to the Bachelor of Science programs in Bioengineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Environmental Engineering or Mechanical Engineering must have a minimum GPA of 2.75 from all previous college or university work and have college

credit equivalent to MATH 1850 and CHEM 1230, with grades of at least a C or higher.

Students transferring into the College of Engineering Bachelor of Science in Engineering Technology programs in Computer Science and Engineering Technology, Construction Engineering Technology, Electrical Engineering Technology, Information Technology and Mechanical Engineering Technology must have obtained a minimum cumulative GPA of 2.25 from all previous college or university work. Equivalent credit for MATH 1330 or MATH 1340 with a grade of C or higher is also required for Construction Engineering Technology and Mechanical Engineering Technology. Equivalent credit for MATH 1850 or MATH 2450 with a grade of C or higher is also required for Computer Science and Engineering Technology and Electrical Engineering Technology.

Students not admitted to an engineering program may not take engineering courses unless those courses are required for a degree program outside of engineering.

Students transferring from other institutions must earn at least 32 hours of undergraduate credit in residence at The University of Toledo. At least 14 of these must be in the major area. The remaining credit hours are to be in engineering topics or in other areas that satisfy degree requirements.

Full-time students must take their last semester in residence and part-time students must take their last 14 hours in residence unless exceptional arrangements have been made in advance with the Associate Dean of Undergraduate Studies in the College of Engineering.

## Academic Policies

Students in the College of Engineering are subject to the general regulations that apply to all students enrolled in The University of Toledo. Refer to the UT Policy website (<http://www.utoledo.edu/policies/academic/undergraduate>) for academic policies that apply to all undergraduate students. The following policies apply to undergraduate students enrolled in the College of Engineering.

### Bachelor of Science Degree Requirements

A total of 128 hours of course credit is required for all Bachelor of Science degree programs offered by the College of Engineering, not including co-op hours. To obtain a degree in an undergraduate program, students must have the proper number of credit hours in courses required for the curriculum, a minimum overall cumulative GPA of 2.0, and a minimum GPA of 2.0 in the student's major. When a course is repeated, only the grade the last time a course was taken is used in the calculation of the major GPA.

All Bachelor of Science degree programs offered by the College of Engineering have a common structure of mathematics, basic sciences, humanities/fine arts, social sciences, multicultural studies and engineering topics. A minimum of three semesters of co-operative education are required for all seven Engineering Science degree programs, and are optional for all five Engineering Technology degree programs. Engineering Technology students that opt to pursue the co-op program must complete a minimum of three semesters of co-op.

The required curriculum and recommended course sequence for each program is presented on the website of the department offering that program. These curricula permit the student to complete the Engineering Science degree requirements with co-op in five years and the Engineering Technology degree requirements without co-op in four years.

After 100 hours have been attempted, students should obtain a degree audit from the myUT portal to formulate plans for completion of the program and to receive degree approval of the Associate Dean of Undergraduate Studies. Preparation of the final semester schedules should be completed to insure that all degree requirements will be met. Application for graduation should be made to the via the myUT portal before the published deadline, in accordance with the procedures noted on the Registrar's website (<http://www.utoledo.edu/offices/registrar/graduation.html>).

### DEGREE AUDIT REQUIREMENT (DARS)

The Degree Audit Reporting System is an automated record that contains all of a student's graduation requirements and tracks that student's progress toward meeting those requirements. Degree audits are available to students upon request from the Office of Student Retention and Academic Success and online through the myUT portal Student Self-Service. Students are encouraged to keep current degree audits for their personal use and to discuss their degree audits with their academic advisers.

### Class Rank

Class rank is determined as follows:

- Freshman: 0-29 earned hours
- Sophomore: 30-59 earned hours
- Junior: 60-89 earned hours
- Senior: 90+ earned hours

### DEGREE AUDIT REQUIREMENT (DARS)

The Degree Audit Reporting System is an automated record that contains all of a student's graduation requirements and tracks that student's progress toward meeting those requirements. Degree audits are available to students upon request from the Office of Student Retention and Academic Success and online through the myUT portal Student Self-Service. Students are encouraged to keep current degree audits for their personal use and to discuss their degree audits with their academic advisers.

### EVALUATION OF TRANSFER COURSES

The College of Engineering Office of Undergraduate Studies assists in the evaluation of engineering coursework based on course equivalencies determined by the appropriate academic unit as coordinated through the Registrar's Office. In many cases, courses from other universities/colleges have been pre-approved for equivalency and will transfer with confirmation. The evaluation of non-engineering coursework is coordinated by the Registrar's Office and completed by the appropriate college.

### Pass/No Credit Option

Engineering students do not have the option to take any coursework on a pass/no credit basis.

## Repeated Courses AND GPA Recalculation

Students may repeat a previously attempted course. If the grade in the repeated course is higher, the student may petition the college in which the course is taught to have the initial grade excluded from the overall GPA calculation. There is a limit of 12 total credit hours eligible for GPA recalculation; please see the GPA Recalculation policy (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-07%20Repeating%20a%20course%20and%20recalculation%20of%20GPA.pdf>) for details. Note that all grades, including those for repeated courses, will be included in the determination of eligibility for graduation honors, fellowships, or other distinctions awarded on the basis of GPA. However, when a course in the major is repeated, only the grade the last time the course is taken is used in the major GPA calculation as described in the Bachelor of Science Degree Requirements section above.

## Required Academic Performance

All students are expected to maintain a minimum cumulative GPA of 2.0. A student who achieves a cumulative GPA below 2.0 will be placed on probation and is expected to achieve a term GPA above 2.0 during subsequent semesters in order to achieve a cumulative GPA above 2.0. A term GPA below 2.0 while on probation could lead to suspension or dismissal as described in the Academic Standing (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-01%20Academic%20standing.pdf>) policy.

### Readmission from suspension or dismissal

Suspended or dismissed students must submit a written petition to the Associate Dean of Undergraduate Studies in order to gain readmission after the term of suspension or dismissal has been completed. Readmission decisions will be made by the Associate Dean of Undergraduate Studies in conjunction with the Undergraduate Program Director of the degree program to which the student is requesting readmission. Readmission petitions must be received before 5 pm on July 15th for Fall readmission, before 5 pm on November 15th for Spring readmission, and before 5 pm on April 1st for Summer readmission.

Note that there are no appeals to receive an early readmission to the College of Engineering following a suspension or dismissal. Readmission petitions will only be considered after the full suspension or dismissal term has been served.

## Student Services

### Undergraduate Academic Advising

Undergraduate academic advising is provided by each department in the College of Engineering for students who are currently in one of the department's majors. Engineering undergraduate students have a support structure that includes their assistant/associate director of student services (staff member) and their undergraduate program director (faculty member). The individuals below are the assistant/associate directors of student services who manage the academic advising for engineering students.

If you are not in the College of Engineering or in the engineering major you wish to pursue, please contact the Assistant Director of Engineering Transfer Programs. The information is listed below.

### Bioengineering (BIOE)

Robin Van Hoy, B.A., Assistant Director  
Robin.VanHoy@utoledo.edu  
419-530-8078  
NI 5051

Faculty Undergraduate Program Director  
Eda Yildirim-Ayan  
Eda.YildirimAyan@utoledo.edu  
419-530-8257  
NI 5031

### Chemical Engineering (CHME)

Chanda Raine, M.Ed., Associate Director  
Chanda.Raine@utoledo.edu (Chanda.Raine@utoledo.edu)  
419-530-8096  
NI 3050

Faculty Undergraduate Program Director  
Maria Coleman  
maria.coleman@utoledo.edu (dong.kim@utoledo.edu)  
419-530-8084  
NI 3051

### Civil Engineering and Environmental Engineering (CVLE or ENVE)

Kyle Sawyer M.A., Assistant Director  
kyle.sawyer@utoledo.edu (bryan.bosch@utoledo.edu)  
419-530-8114  
NI 3006

Department Chair  
Ashok Kumar  
ashok.kumar@utoledo.edu (dong.kim@utoledo.edu)  
419-530-8136  
NI 3036

### Electrical Engineering and Computer Science and Engineering (ELCE or CSE)

Christie Hennen, M.E., Associate Director  
christina.hennen@utoledo.edu  
419-530-3853  
NI 2008

Faculty Undergraduate Program Director  
Richard Molyet  
Richard.molyet@utoledo.edu (richard.molyet@utoledo.edu)  
419-530-8143  
NI 2008

### Mechanical Engineering (MECE)

Debbie Kraftchick, MSIE, Associate Director  
mimeadvising@utoledo.edu  
419-530-8210  
NI 4006

Julie Croy, M.A., Assistant Director  
mimeadvising@utoledo.edu

419-530-8210  
NI 4006

Faculty Undergraduate Program Director  
Sorin Cioc  
sorin.cioc@utoledo.edu (matthew.franchetti@utoledo.edu)  
419-530-8051  
NI 4006 E

### Engineering Technology (ET)

Majors:

- Computer science and engineering technology (CSET)
- Construction engineering technology (CET)
- Electrical engineering technology (ELCT or also known as EET)
- Information Technology (ITCE or also known as IT or BSIT)
- Mechanical engineering technology (MCHT or also known as MET)

Myrna Rudder, Associate Director  
myrna.rudder@utoledo.edu  
419-530-3062  
NI 1600

Faculty Undergraduate Program Director  
CET - Nick Kissoff  
Nicholas.kissoff@utoledo.edu  
419-530-3165  
NE 1615

CSET & IT - Jared Oluoch (<http://www.utoledo.edu/engineering/engineering-technology/cset/oluoch.html>)  
jared.oluoch@utoledo.edu  
419-530-3272  
NE 1613

ELCT - T (<http://www.utoledo.edu/engineering/engineering-technology/cset/oluoch.html>)ed Evans  
william.evans@utoledo.edu (jared.oluoch@utoledo.edu)  
419-530-3349  
NE 1621

MCHT - Carmen Cioc  
carmen.cioc2@utoledo.edu (jared.oluoch@utoledo.edu)  
419-530-3017  
NE 1609

### Office of Undergraduate Studies- Undecided engineering, transfers, and change of majors:

Ryan Crudder, Assistant Director of Engineering Transfer Programs  
ryan.crudder@utoledo.edu (Emily.creamer@utoledo.edu)  
419-530-8048  
NI 1045

## Honors Program

The Honors Program in the College of Engineering provides opportunities for challenging and individual study to undergraduate students of unusually high ability, motivation and initiative. Students with a minimum high school GPA of 3.5 and a minimum ACT composite of 25 are

encouraged to apply. Current University of Toledo students and transfer students may apply for admission to the Honors Program if they have completed at least 15, but not more than 60, graded semester hours with a minimum UT GPA of at least 3.5, and have been interviewed by an honors advisor. All admissions to the Honors Program are granted on a space-available basis.

To receive the College Honors citation upon graduation from an engineering bachelor's degree program, the following criteria must be met:

1. A minimum GPA of 3.3 for all college coursework;
2. A minimum of 27 semester hours in honors courses;
3. Completion of HON 1010, HON 2010 and HON 3010;
4. A minimum of 10 semester hours of honors courses offered by the College of Engineering;
5. An honors thesis or honors project.

## Professional Registration

Registration by the State of Ohio as a Professional Engineer is important for professional practice and requires four to eight years of engineering experience after graduation. The first step is applying for and passing the Fundamentals of Engineering (FE) examination, a computer-based exam given during four two-month windows each year at testing centers around the state. Application deadlines for these examinations are several months before testing dates.

All engineering graduates are strongly encouraged to take the FE near their date of graduation and are permitted to sit for the exam during their final semester of enrollment prior to graduation. After four years of acceptable engineering experience, the State Board of Registration will permit the engineering graduate to take the Professional Engineers (PE) examination. Engineering technology graduates must pass the FE exam and need a minimum of eight years of acceptable engineering experience before taking the PE exam.

Applications should be filed to meet published deadlines of the National Council of Examiners for Engineering and Surveying and the State Board of Registration in Columbus. Additional information is available in the Ohio Board of Professional Engineers and Surveyors at <http://www.peps.ohio.gov/> or from the National Council of Examiners for Engineering and Surveying at <http://ncees.org>.

The undergraduate engineering degree programs are intended to prepare students with no prior experience for Professional Engineer Licensure. Successful completion of the UT engineering programs satisfies the academic requirements for professional engineering credentialing set forth by the Ohio Board of Professional Engineers and Surveyors of the State of Ohio. As licensure requirements may vary by state, if you intend to practice in a state outside of Ohio, contact Dr. Matthew Franchetti in the program/college to discuss eligibility for licensure in that state.

## Learning Outcomes

### Undergraduate Degree Programs of Study

**The Bachelor of Science in Engineering degree programs accredited by the Engineering Accreditation Commission (EAC) of ABET must demonstrate that their graduates attain the following outcomes:**

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

**The Bachelor of Science in Engineering Technology degree programs accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET must demonstrate that their graduates attain the following outcomes:**

1. An ability to select and apply the knowledge, techniques, skills, and modern tools of their discipline to broadly defined engineering technology activities
2. An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies
3. An ability to conduct standard tests and measurements; to conduct, analyze and interpret experiments; and to apply experimental results to improve processes
4. An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives
5. An ability to function effectively as a member or leader on a technical team
6. An ability to identify, analyze and solve broadly-defined engineering technology problems
7. An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature
8. An understanding of the need for and an ability to engage in self-directed continuing professional development

9. An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity
10. A knowledge of the impact of engineering technology solutions in a societal and global context
11. A commitment to quality, timeliness, and continuous improvement.

**The Bachelor of Science in Engineering and Engineering Technology degree programs accredited by the Computing Accreditation Commission (CAC) of ABET must demonstrate that their graduates will have the ability to:**

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
3. Communicate effectively in a variety of professional contexts
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline

## Department of Bioengineering

**Brent D. Cameron, Professor, Chair and Graduate Program Director**  
Nitschke Hall Room 5051

Phone: 419.530.8030

Fax: 419.530.8076

brent.cameron@utoledo.edu

Eda Yildirim-Ayan, Undergraduate Program Director  
eda.yildirimayan@utoledo.edu

Robin Van Hoy, Assistant Director of Dept. Student Services  
robin.vanhoy@utoledo.edu

The Department of Bioengineering offers an ABET-accredited Bachelor of Science in Bioengineering degree program that features more than 45 hours of Bioengineering courses taught by award-winning faculty, an integrated co-operative education experience and a combined Bacc2MD Pathway program offered in conjunction with the University of Toledo College of Medicine.

## Degrees Offered

- BS in Bioengineering (p. 253)

**BIOE 1000 Orientation and Introduction to Bioengineering Computing**  
[0-2 credit hours]

Application of graphical design and numerical analysis software required for the solution of bioengineering problems. This course also provides a one-semester overview of key engineering principles and concepts.

**Term Offered:** Fall



**BIOE 1010 Professional Development**

[1 credit hour]

Preparation for co-op and full-time employment in industry. Topics include resume writing, interviewing skills, compensation and benefits, social protocol and corporate ethics, biomedical ethics, design and quality control processes and governmental regulation.

**Term Offered:** Spring**BIOE 1200 Introduction to Bioengineering Applications**

[0-2 credit hours]

Application of graphical design and numerical analysis software required for the solution of bioengineering problems. This course also provides a one-semester overview of key engineering principles and concepts.

**Prerequisites:** BIOE 1000 with a minimum grade of D-**Term Offered:** Spring**BIOE 1410 Freshman Design Innovation I**

[1 credit hour]

Basic concepts for biomedical device design and development and incorporating innovation and entrepreneurial mindset in freshman bioengineering students using team- and project-based learning experiences.

**Term Offered:** Fall**BIOE 1420 Freshman Design Innovation II**

[1 credit hour]

Basic concepts for biomedical device design and development and incorporating entrepreneurial mindset in freshman bioengineering students using team- and project-based learning experiences.

**Prerequisites:** BIOE 1410 with a minimum grade of D-**Term Offered:** Spring**BIOE 2100 Bioengineering Thermodynamics**

[0-3 credit hours]

Principles of thermodynamics and conservation of mass applied to living systems, biomedical devices and bioprocesses.

**Prerequisites:** PHYS 2130 with a minimum grade of D- and CHEM 1240 with a minimum grade of D- and MATH 2850 with a minimum grade of D- or MATH 2950 with a minimum grade of D-**Term Offered:** Spring, Fall**BIOE 2200 Biomaterials**

[3 credit hours]

Physical and chemical properties of materials commonly used in medicine. Topics include inflammatory, immunogenic, carcinogenic and toxicologic responses within host tissues as well as testing and evaluation strategies for effective use of materials in medicine and biology.

**Prerequisites:** PHYS 2130 with a minimum grade of D- and (MATH 1860 with a minimum grade of D- or MATH 1930 with a minimum grade of D-) and CHEM 1240 with a minimum grade of D-**Term Offered:** Spring, Fall**BIOE 3110 Introduction To Biomechanics**

[3 credit hours]

Mechanics of the human musculoskeletal system and its joints. Basic concepts for deformable body mechanics, including stress and strain analysis, viscoelasticity, and applications to common problems in orthopedic biomechanics.

**Prerequisites:** (CIVE 1150 with a minimum grade of D- and BIOL 2170 with a minimum grade of D-)**Term Offered:** Spring**BIOE 3300 Biomedical Electronics**

[3 credit hours]

Measurement circuits, signal analysis, and computer design in biological systems and medicine. Electronic devices, digital devices, amplifier design and instrumentation safety.

**Prerequisites:** (EECS 2300 with a minimum grade of D- and BIOE 1200 with a minimum grade of D-)**Term Offered:** Spring, Fall**BIOE 3400 Biotransport Phenomena**

[3 credit hours]

The quantitative description of momentum transport (viscous flow) and mass transport (convection and diffusion) in living systems. Application of engineering methods to model and quantify aspects of bioengineering systems.

**Prerequisites:** BIOE 2100 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-**Term Offered:** Spring, Fall**BIOE 3500 Bioprocessing Laboratory**

[0-3 credit hours]

Introduction to processing techniques used in biotechnology and pharmaceutical industries. The process from concept to product is covered, including the creation and culture of recombinant organisms to synthesize a protein product and the extraction, purification, and assay of the final product.

**Prerequisites:** (BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D- and CHEM 1240 with a minimum grade of D-) and BIOE 2100 (may be taken concurrently) with a minimum grade of D- and (MATH 1860 with a minimum grade of D- or MATH 1930 with a minimum grade of D-)**Term Offered:** Spring, Fall**BIOE 3940 Co-Op Experience**

[1 credit hour]

Approved co-op experience. Course may be repeated.

**Prerequisites:** BIOE 1010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**BIOE 3950 Co-Op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** BIOE 3940 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**BIOE 4100 Physiology For Bioengineers**

[3 credit hours]

Review of general physiological principles followed by a comprehensive study of the human nervous, muscle, circulatory, respiratory, excretory and digestive systems from an engineering perspective.

**Prerequisites:** BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D- and CHEM 1240 with a minimum grade of D- and EECS 2300 (may be taken concurrently) with a minimum grade of D-**Term Offered:** Fall

**BIOE 4110 Advanced Biomechanics**

[3 credit hours]

The goal of this course is for students to be able to describe motions of the human body. Three-dimensional analysis and measurements of human body movements including kinematics, kinetics and energetics of human gait, anthropometry and application to bioengineering and orthopedics will be presented. Euler angles and the screw axis method will be used to describe three-dimensional motions.

**Prerequisites:** BIOE 3110 with a minimum grade of D-

**Term Offered:** Fall

**BIOE 4120 Biosignal Processing**

[3 credit hours]

Design and application of analog and digital signal processors to biomedical signals. Covered topics include the Laplace transform, analog filter design, continuous and discrete Fourier transform, and FIR/IIR digital filter design.

**Prerequisites:** BIOE 3300 with a minimum grade of D- and BIOE 4140 with a minimum grade of D- and (MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-)

**Term Offered:** Fall

**BIOE 4140 Biomedical Instrumentation Laboratory**

[0-2 credit hours]

Design and construction of medical instrumentation, including aspects of signal and image processing, computer integration, and software development. Written skills are emphasized through laboratory report organization, documentation of results, error analysis and interpretation of findings.

**Prerequisites:** BIOE 3300 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4300 Biomedical Quality Control**

[3 credit hours]

Statistical methods for the design, testing and manufacturing of medical devices# the application of statistical methods to quality systems and process validation.

**Prerequisites:** (MATH 1860 with a minimum grade of D- or MATH 1930 with a minimum grade of D-)

**Term Offered:** Spring

**BIOE 4320 Advanced Biomedical Quality Control**

[3 credit hours]

Advanced statistical methods for the design, testing and manufacturing of medical devices; the application of advanced statistical methods to quality systems and process validation.

**Prerequisites:** BIOE 4300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4410 Bioengineering Design Project I**

[3 credit hours]

This course integrates the engineering and life science backgrounds of senior bioengineering students through the presentation of design principles for problems in biomechanical, bioelectrical, biochemical and biological systems. Oral and written communication, engineering economics and business plans are reviewed.

**Prerequisites:** (BIOE 3110 with a minimum grade of D- and BIOE 3300 with a minimum grade of D- and BIOE 3400 with a minimum grade of D- and BIOE 3500 with a minimum grade of D- and BIOE 3940 with a minimum grade of D-)

**Term Offered:** Fall

**BIOE 4420 Bioengineering Design Project II**

[3 credit hours]

A continuation of BIOE 4410. Teams of senior bioengineering students solve problems in biomechanical, bioelectrical, biochemical and biological systems through a design project. Ethics discussions, testing and evaluation of designs, progress reports, oral presentations and a written final report are required.

**Prerequisites:** BIOE 4410 with a minimum grade of D-

**Term Offered:** Spring

**BIOE 4610 Applications of Biotransport**

[3 credit hours]

The application of engineering principles to the design and analysis of artificial organs, drug delivery systems, and tissue engineering and their clinical application.

**Prerequisites:** BIOE 3400 with a minimum grade of D-

**Term Offered:** Spring

**BIOE 4620 Biochemical Engineering**

[3 credit hours]

The application of engineering principles to the design and analysis of biological processes that employ living organisms for the production of biochemicals.

**Prerequisites:** BIOE 3500 with a minimum grade of D- and BIOE 3400 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4630 Bioseparations**

[3 credit hours]

Practical and theoretical aspects of processes required to separate and purify cells, proteins and other biological compounds.

**Prerequisites:** BIOE 3500 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4640 Medical Imaging**

[3 credit hours]

Mathematics and physics underlying major medical imaging modalities including X-ray radiography and computerized tomography (CT), magnetic resonance imaging (MRI), nuclear medicine imaging, and ultrasound imaging.

**Prerequisites:** BIOE 4300 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D- or MATH 3860 with a minimum grade of D- and PHYS 2140 with a minimum grade of D-

**Term Offered:** Fall

**BIOE 4710 Biomechanics Of Soft And Hard Tissues**

[3 credit hours]

Composite and hierarchical models bones; models of bone remodeling. Soft tissues models: linear and nonlinear viscoelasticity, Fung's quasilinear viscoelastic theory. Biphasic and triphasic models and mechano-ionic interactions.

**Prerequisites:** BIOE 3110 with a minimum grade of D-**Term Offered:** Fall**BIOE 4720 Cellular Electrophysiology**

[3 credit hours]

The physiology of electrically excitable tissues, including nerve, muscle and secretory tissues. Action potential generation, neurotransmission and modulatory mechanisms. Methods for constructing and using computational models of excitable membranes.

**Prerequisites:** (EECS 2300 with a minimum grade of D- and BIOE 4100 with a minimum grade of D-) and (MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D- or MATH 3860 with a minimum grade of D-)

**Term Offered:** Spring**BIOE 4730 Computational Bioengineering**

[3 credit hours]

Introduction to and utilization of computational packages for bioengineering applications. Introduction to finite element analysis and applications in biochemical, biofluidics, bioheat transfer, optimization.

**Prerequisites:** (BIOE 3110 with a minimum grade of D- and BIOE 1200 with a minimum grade of D-)

**Term Offered:** Spring**BIOE 4740 Tissue Engineering**

[3 credit hours]

Application of principles from engineering and the life sciences toward the development of biological substitutes that restore, maintain or improve tissue function.

**Prerequisites:** (BIOE 2200 with a minimum grade of D- and BIOE 4100 with a minimum grade of D-)

**Term Offered:** Spring, Fall**BIOE 4750 Experimental Methods In Orthopedic Biomechanics**

[3 credit hours]

This course provides students with experience in experimental techniques used in orthopaedics and in the study of the musculoskeletal system including mechanical testing of different materials, experimental and analytical methods for stress analysis, strain gages, methods used in human motion analysis to include motion capture, force pressure plates and electromyography. Students will learn to analyze human motion by capturing movements of their choice and will then conduct a biomechanical analysis to quantitatively describe their capture movements.

**Prerequisites:** BIOE 3110 with a minimum grade of D- or CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring**BIOE 4980 Bioengineering Special Topics**

[1-3 credit hours]

Selected subjects in the field of bioengineering with intensive investigation of the recent literature in a few areas of special interest to the class and the professor.

**Term Offered:** Spring, Fall**BIOE 4990 Bioengineering Independent Study**

[1-3 credit hours]

The student, under the guidance of their research adviser, explores in-depth specific areas or topics related to their research.

**Term Offered:** Spring, Summer, Fall

## BS in Bioengineering

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOE 1000	Orientation and Introduction to Bioengineering Computing	2
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 1850	Single Variable Calculus I	4
ENGL 1110	College Composition I	3
BIOE 1410	Freshman Design Innovation I	1
	Hours	15
<b>Second Term</b>		
BIOE 1200	Introduction to Bioengineering Applications	2
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
MATH 1860	Single Variable Calculus II	4
PHYS 2130	Physics For Science And Engineering Majors I	5
BIOE 1420	Freshman Design Innovation II	1
	Hours	17
<b>Third Term</b>		
CIVE 1150	Engineering Mechanics: Statics	3
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
MATH 2850	Elementary Multivariable Calculus	4
PHYS 2140	Physics For Science And Engineering Majors II	5
	Hours	17
<b>Fourth Term</b>		
BIOE 1010	Professional Development	1
BIOE 2200	Biomaterials	3
MATH 2860	Elementary Differential Equations	3
BIOE 4300	Biomedical Quality Control	3
BIOE 2100	Bioengineering Thermodynamics	3
	Hours	13
<b>Fifth Term</b>		
ENGL 2950	Science And Technical Report Writing	3
BIOE 4750	Experimental Methods In Orthopedic Biomechanics	3
	Social Sciences Core	3

Diversity of US	3
Hours	12
<b>Sixth Term</b>	
BIOE 3940 Co-Op Experience	1
Hours	1
<b>Seventh Term</b>	
BIOE 2100 Bioengineering Thermodynamics	3
BIOE 3500 Bioprocessing Laboratory	3
BIOE 4100 Physiology For Bioengineers	3
EECS 2300 Electric Circuits	4
Hours	13
<b>Eighth Term</b>	
BIOE 3940 Co-Op Experience	1
Hours	1
<b>Ninth Term</b>	
BIOE 3300 Biomedical Electronics	3
BIOE 3400 Biotransport Phenomena	3
BIOE 4140 Biomedical Instrumentation Laboratory	2
BIOE 4300 Biomedical Quality Control	3
Technical Elective	3
Hours	14
<b>Tenth Term</b>	
BIOE 3940 Co-Op Experience	1
Hours	1
<b>Eleventh Term</b>	
BIOE 4120 Biosignal Processing	3
BIOE 4410 Bioengineering Design Project I	3
BIOE Technical Elective	3
Technical Elective	3
Arts/Humanities Core/Non-US Diversity	3
Hours	15
<b>Twelfth Term</b>	
BIOE 4420 Bioengineering Design Project II	3
BIOE Technical Elective	3
Technical Elective	3
Social Sciences Core	3
Hours	12
Total Hours	131

## Department of Chemical Engineering

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## Degrees Offered

- BS in Chemical Engineering (p. 256)

### CHEE 1000 Orientation And Computing For Chemical Engineers

[0-3 credit hours]

An introduction to the UT campus, campus resources, the College of Engineering and the Department of Chemical and Environmental Engineering. Primary emphasis is on engineering computing, data analysis and basic chemical engineering calculations.

**Term Offered:** Fall

### CHEE 1010 Professional Development

[1 credit hour]

Social protocol and ethics in industry. Resume writing and interview skills are presented in preparation for the Co-op experience. Review of resource materials for technical and non-technical individual learning. Oral and written presentation techniques are emphasized.

**Prerequisites:** CHEE 1000 with a minimum grade of D-

**Term Offered:** Spring

### CHEE 2010 Mass And Energy Balances

[3 credit hours]

Introduction to the principles and techniques used in chemical engineering. Basic concepts of mathematics, physics and chemistry are applied to solving problems involving stoichiometry, material balances and energy balances.

**Prerequisites:** CHEE 1000 with a minimum grade of D- and (MATH 1850 (may be taken concurrently) with a minimum grade of D- and CHEM 1230 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Spring

### CHEE 2110 Process Fluid Mechanics

[3 credit hours]

A comprehensive introduction to process fluid mechanics. Topics include: hydrostatics, characteristics of laminar and turbulent flow, mechanical energy balance, flow through packed beds and fluidization of solids, design of pumping systems and piping networks and metering of fluids.

**Prerequisites:** CHEE 2010 with a minimum grade of D-

**Term Offered:** Spring

### CHEE 2230 Chemical Engineering Thermodynamics I

[3 credit hours]

The principles of thermodynamics and their application to chemical engineering. Topics include states and properties of matter, the first and second law of thermodynamics and thermo-chemical effects.

**Prerequisites:** CHEE 2010 with a minimum grade of D- and MATH 1850 with a minimum grade of D-

**Term Offered:** Fall

**CHEE 2330 Chemical Engineering Thermodynamics II**

[3 credit hours]

Topics include properties of fluid mixtures, phase equilibria, chemical equilibria, power generation and refrigeration processes.

**Prerequisites:** CHEE 2230 with a minimum grade of D- and MATH 1860 with a minimum grade of D-

**Term Offered:** Spring, Summer

**CHEE 3030 Separation Processes**

[3 credit hours]

An introduction to equilibrium-based separation processes. Topics include distillation, extraction, leaching, drying and membrane separations. Preliminary equipment design calculations.

**Prerequisites:** CHEE 2330 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CHEE 3110 Process Heat Transfer**

[2 credit hours]

Fundamental equations of heat transfer. Fourier's law. Steady and unsteady thermal conduction. Heat transfer coefficients. Heat exchangers. Condensation and boiling. Forced and natural convection. Radiation, Kirchoff's law and view factors.

**Prerequisites:** CHEE 2110 (may be taken concurrently) with a minimum grade of D- and CHEE 2230 with a minimum grade of D-

**Corequisites:** CHEE 2110

**Term Offered:** Spring

**CHEE 3120 Mass Transfer**

[3 credit hours]

Mass transfer and its application in chemical engineering separations. Diffusivity, mass transfer coefficients and Fick's Law. Applications in continuous and stagewise processes, including absorption, extraction and distillation.

**Prerequisites:** (CHEE 2110 with a minimum grade of D- and CHEE 3030 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Fall

**CHEE 3300 Reactor Engineering And Design**

[3 credit hours]

Fundamentals of chemical reaction engineering. Rate laws, kinetics and mechanisms of homogeneous and heterogeneous reactions. Analysis of reaction rate data. Design of industrial reactors.

**Prerequisites:** CHEE 2230 with a minimum grade of D-

**Term Offered:** Fall

**CHEE 3400 Process Dynamics And Control**

[3 credit hours]

An introduction to designing control systems for chemical engineering processes. Process stability and controller design and selection. Application of Laplace transforms, frequency response techniques and simulation software for open-loop and closed-loop analysis.

**Prerequisites:** CHEE 3300 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D- and CHEE 2110 with a minimum grade of D-

**Term Offered:** Fall

**CHEE 3940 Co-Op Work Experience**

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** CHEE 1010 with a minimum grade of D- and CHEE 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CHEE 3950 Co-Op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** CHEE 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CHEE 4010 Green Engineering Principles**

[3 credit hours]

The principles of chemical process analysis and design are introduced for the development of the green engineering processes. Common components of chemical processes are reviewed and quantitative analyses of process performance and economics developed. The impact of design variables on material and energy usage is demonstrated.

**Prerequisites:** CHEM 1240 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CHEE 4110 Green Engineering Applications**

[3 credit hours]

Applications of green engineering principles in the chemical industry are discussed. Metrics for comparing process options are introduced along with common techniques for improving process performance.

**Prerequisites:** CHEE 4010 with a minimum grade of D-

**Corequisites:** CHEE 4520

**Term Offered:** Spring, Fall

**CHEE 4120 Biofuels**

[3 credit hours]

The technical, economic, social, and political issues associated with energy consumption are discussed. The potential for biofuels to replace current energy sources is examined based on the historical evolution of the industry and current research activity.

**Prerequisites:** CHEM 1230 with a minimum grade of D-

**Term Offered:** Spring

**CHEE 4410 New Separations**

[3 credit hours]

Introduction to and analysis of new separation techniques relevant to downstream processing of bioreactor products. Topics include new extraction and adsorption methods, chromatography techniques, ultrafiltration and electrokinetic methods such as electrophoresis and isoelectric focusing.

**Prerequisites:** (CHEE 3110 with a minimum grade of D- and CHEE 3120 with a minimum grade of D- and CHEE 3030 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CHEE 4500 Chemical Engineering Laboratory I**

[2 credit hours]

An experimental study of the design and performance of selected chemical engineering processes and equipment. Analysis of data, design of experiments and laboratory reports are emphasized.

**Prerequisites:** (CHEE 2110 with a minimum grade of D- and CHEE 3030 with a minimum grade of D- and CHEE 3110 with a minimum grade of D-)

**Term Offered:** Spring, Fall



**CHEE 4520 Chemical Process Economics And Design**

[3 credit hours]

Chemical equipment and process design. Introduction to simulation and flow-sheeting techniques and software. Topics include plant safety and pollution prevention, market analysis, cost estimating, decision making and cash flow analysis.

**Prerequisites:** (CHEE 2110 with a minimum grade of D- and CHEE 2330 with a minimum grade of D- and CHEE 3030 with a minimum grade of D-) and CHEE 3110 with a minimum grade of D-

**Term Offered:** Spring, Summer

**CHEE 4540 Chemical Process Simulation And Design**

[3 credit hours]

Application of chemical engineering fundamentals and the use of process simulators in the synthesis of chemical processes. Use of cost factors and environmental considerations in process decisions. The solution of a comprehensive case study and the preparation of a formal report are required.

**Prerequisites:** CHEE 3120 with a minimum grade of D- and CHEE 4520 with a minimum grade of D- and CHEE 3300 with a minimum grade of D-

**Term Offered:** Fall

**CHEE 4550 Chemical Engineering Laboratory II**

[2 credit hours]

An experimental study of the design and performance of selected chemical engineering process equipment, focusing on heat and mass transfer and process control. Design of experiments, analysis of data and presentation techniques are emphasized.

**Prerequisites:** (CHEE 3300 (may be taken concurrently) with a minimum grade of D- and CHEE 3120 (may be taken concurrently) with a minimum grade of D- and CHEE 3400 (may be taken concurrently) with a minimum grade of D- and CHEE 4500 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Fall

**CHEE 4800 Polymer Science And Engineering**

[3 credit hours]

Polymerization processes, characterization, structure and properties of polymers, processing and engineering applications of the major polymer types.

**Term Offered:** Fall

**CHEE 4960 Senior Honors Thesis**

[3 credit hours]

Independent research under the guidance of a faculty member, requiring an oral report and a written thesis upon completion of work.

**Term Offered:** Spring, Summer, Fall

**CHEE 4980 Special Topics In Chemical Engineering**

[1-4 credit hours]

Special topics of interest to chemical engineers - upper division.

**Term Offered:** Spring, Summer, Fall

**CHEE 4990 Independent Studies In Chemical Engineering**

[1-4 credit hours]

Independent studies in chemical engineering - upper division.

**Term Offered:** Spring, Summer, Fall

## BS in Chemical Engineering

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Bachelor of Science in Chemical Engineering

Course	Title	Hours
<b>First Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 1850	Single Variable Calculus I	4
CHEE 1000	Orientation And Computing For Chemical Engineers	3
ENGL 1110	College Composition I	3
Hours		15
<b>Second Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
MATH 1860	Single Variable Calculus II	4
COMM 1010	Comm Principles And Practices	3
CHEE 1010	Professional Development	1
CHEE 2010	Mass And Energy Balances	3
Hours		16
<b>Third Term</b>		
PHYS 2130	Physics For Science And Engineering Majors I	5
MATH 2850	Elementary Multivariable Calculus	4
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
CHEE 2230	Chemical Engineering Thermodynamics I	3
Hours		16
<b>Fourth Term</b>		
MATH 2860	Elementary Differential Equations	3
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
CHEE 2330	Chemical Engineering Thermodynamics II	3
Social Sciences Core		3
Elective		3
Hours		16
<b>Fifth Term</b>		
CHEE 3940	Co-Op Work Experience	1
Hours		1
<b>Sixth Term</b>		
PHYS 2140	Physics For Science And Engineering Majors II	5
Advanced Chemistry Elective		3
CHEE 2110	Process Fluid Mechanics	3
CHEE 3030	Separation Processes	3
CHEE 3110	Process Heat Transfer	2
Hours		16

**Seventh Term**

CHEE 3940	Co-Op Work Experience	1
	Hours	1

**Eighth Term**

	Advanced Chemistry Elective	3
	Engineering Elective	3
CHEE 3120	Mass Transfer	3
CHEE 3300	Reactor Engineering And Design	3
CHEE 4500	Chemical Engineering Laboratory I	2
ENGL 2950	Science And Technical Report Writing	3
	Hours	17

**Ninth Term**

CHEE 3940	Co-Op Work Experience	1
	Hours	1

**Tenth Term**

	Diversity of US	3
	Social Sciences Core	3
	Engineering Elective	3
CIVE 1150	Engineering Mechanics: Statics	3
or EECS 2340	or Electric Circuits For Nonmajors	
CHEE 4520	Chemical Process Economics And Design	3
	Hours	15

**Eleventh Term**

	Advanced Science Elective	3
	Arts/Humanities Core/ Non-US Diversity	3
	CHEE Elective	3
CHEE 3400	Process Dynamics And Control	3
CHEE 4540	Chemical Process Simulation And Design	3
CHEE 4550	Chemical Engineering Laboratory II	2
	Hours	17
	Total Hours	131

## Department of Civil Engineering and Environmental Engineering

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As a department that celebrates human diversity, we advance civil engineering knowledge, solutions, and practices through research and education of civil engineers who:

- have a balanced, integrated, and state-of-the-art education
- are creative, independent, and practical thinkers
- are world-class leaders, designers, and entrepreneurs

## Degrees Offered

- BS in Civil Engineering (p. 261)
- BS in Environmental Engineering (p. 262)
- Surveying Minor (p. 263)

### CIVE 1000 Freshman Civil Engineering Experience

[0-1 credit hours]

Computer literacy, report writing, word processing, table creation, equation, equation writing, data manipulation, data graphical plotting. Introduction to various disciplines in Civil Engineering, Structural, Geotechnical, Transportation, Environmental. Practice in engineering problem solving process.

**Term Offered:** Fall

### CIVE 1100 Civil Engineering Measurements

[0-3 credit hours]

Study of graphical representations of engineering structures and systems and application by hand drawing and computer aided techniques. Instruments and methods for linear and angular measurements. Error theory and propagation. Familiarization with geographical information systems.

**Corequisites:** CIVE 1110

**Term Offered:** Spring, Fall

### CIVE 1110 Computer Aided Drafting for Civil Engineers

[1 credit hour]

Study of graphical representation of engineering structures and systems and application by hand-drawing and computer aided techniques.

**Corequisites:** CIVE 1100

**Term Offered:** Spring, Fall

### CIVE 1150 Engineering Mechanics: Statics

[3 credit hours]

Study of coplanar statics of particles, vector addition, resultant components, equilibrium, free body diagrams, equivalent force systems, vector products, scalar products, 2 & 3 dimensional equilibrium of rigid bodies, analysis of machines, pulleys, trusses. Centroids, moments of inertia, shear and bending moment diagrams.

**Prerequisites:** (MATH 1850 with a minimum grade of D- and PHYS 2130 with a minimum grade of D-) or (MATH 1920 with a minimum grade of D- and PHYS 2130 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

### CIVE 1160 Engineering Mechanics: Strength Of Materials

[3 credit hours]

Material properties. Axially loaded members, including eccentric loads and thin wall pressure vessels. Axial load applications: Stress-Strain relationships, Stress & Strain transformations. Torsion: solid sections, circular sections. Torsional load applications: Combined axial and torsion stress. Beams: shear and bending moment diagrams, bending stress, deflection. Beam load applications: Combined shear, torsion and bending stress. Buckling of long columns.

**Prerequisites:** CIVE 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CIVE 1170 Fluid Mechanics For Civil Engineers**

[3 credit hours]

Fundamental concepts of fluid mechanics. Use of hydrostatics, continuity, momentum and energy equations to solve fluid problems applied to pipe flow, open channel flow and boundary layer flow. Introduction to turbo machinery.

**Prerequisites:** PHYS 2130 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 2000 Professional Development**

[1 credit hour]

Basic concepts of career planning, co-op performance expectations, necessary skills for maximizing learning from experiences and realities of the professional community.

**Prerequisites:** CIVE 1000 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 2110 Civil Engineering Materials With Laboratory**

[0-3 credit hours]

Introduction to properties of aggregates, Portland cement, concrete, steel, glass and bituminous mixtures. Mix designs of cement and asphalt concrete and standard test procedures for strength, workability, serviceability and durability.

**Prerequisites:** CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 2550 Sustainability Problem Solving**

[1 credit hour]

Teams of students work as part of an enterprise to address real-world engineering design projects or problems. Develops group problem-solving skills. Stresses interpersonal, project management, and action planning skills. Frames the problem from a systems and sustainability perspective including the technical, social, economic, and environmental dimensions and solutions of the problem. Students have the option to start a new enterprise or join an existing one from previous cohorts. This course may be repeated for credit.

**Term Offered:** Spring, Summer, Fall

**CIVE 2990 Individual Study In Civil Engineering**

[1-3 credit hours]

An opportunity for qualified underclassmen to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.

**Term Offered:** Summer, Fall

**CIVE 3120 Civil Engineering Systems Analysis**

[3 credit hours]

Systems Approach, optimization by differential calculus techniques, linear programming, transportation and assignment problems, management of construction projects, critical path method, PERT and decision analysis.

**Prerequisites:** MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 3210 Soil Mechanics**

[0-3 credit hours]

A study of soil as an engineering material. Geologic origins, physical properties, movement of water through soil, soil stresses, consolidation, shear strength. Engineering properties testing of soils in laboratory.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and CIVE 1170 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CIVE 3220 Foundation Engineering**

[3 credit hours]

Application of soil mechanics principles to design for problems encountered in excavations, embankments, foundations, retaining structures, abutments, slope stability. Evaluation of the ability of soil to function in various capacities.

**Prerequisites:** CIVE 3210 with a minimum grade of D-

**Term Offered:** Summer

**CIVE 3310 Structural Analysis**

[3 credit hours]

Analysis of statically determinate structures; analysis of simple and compound trusses, beams and frames; introduction to indeterminate structures; slope deflection and moment distribution. Introduction to computer applications.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and MATH 1890 with a minimum grade of D- or MATH 2890 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CIVE 3410 Steel Design I**

[3 credit hours]

An introduction to the principles underlying design of axial tension members, axial compression members, beams, columns and base plates. Also includes welded and bolted connections.

**Prerequisites:** CIVE 3310 with a minimum grade of D-

**Term Offered:** Summer

**CIVE 3420 Reinforced Concrete Design I**

[3 credit hours]

Introduction to principles and underlying design of basic structural beams, columns, one-way slabs in reinforced concrete. Shear reinforcement.

**Prerequisites:** CIVE 3310 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 3510 Transportation Engineering I**

[3 credit hours]

To provide an overview of transportation systems and operating characteristics of various highway modes. Concept of land use/transportation interaction. Considerations of vehicle and human characteristics in design of highway elements. Introduction to highway capacity and traffic control devices. Transportation planning process leading to local area traffic management with introduction to transportation system management and intelligent transportation systems.

**Prerequisites:** (CIVE 1100 with a minimum grade of D- and MIME 2300 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 3520 Transportation Engineering II**

[3 credit hours]

Survey of various modes of transport with emphasis on service provided by each and facilities required. Introduction to physical and practical aspects of design of transport facilities including drainage, pavements, railroads, ports and harbors, pipelines and transportation terminals.

**Prerequisites:** (CIVE 3510 with a minimum grade of D- and CIVE 3210 with a minimum grade of D- and CIVE 2110 with a minimum grade of D-)

**Term Offered:** Summer

**CIVE 3610 Water Supply And Treatment**

[0-3 credit hours]

This course includes lecture, laboratory exercises and a team-based design project. The topics covered will include water quality, water supply, design of the physical and chemical treatment processes, water distribution systems and contemporary issues related to drinking water.

**Prerequisites:** CIVE 1170 with a minimum grade of D-

**Term Offered:** Fall

**CIVE 3620 Air Pollution Engineering I**

[3 credit hours]

Introduction to sources of air pollution, basic meteorological processes, air quality modeling, technology for air pollution control, odor control and noise pollution. Introduction to health effects of air pollutants, risk assessment and global atmospheric change. The students are required to use the USEPA programs for stack design and computations for ground level concentrations.

**Prerequisites:** CIVE 1170 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 3630 Wastewater Engineering**

[3 credit hours]

This course is focused on wastewater engineering processes. The class format may include lectures, laboratory and field exercises, problem sessions, and team-based design work. The topics covered will include wastewater characterization, collection, treatment process design, discharge, as well as stormwater management and modeling.

**Prerequisites:** CIVE 1170 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 3720 Boundary Surveying**

[3 credit hours]

Analysis of evidence and procedures for boundary location, Researching local survey records, and Platting and Subdivision Design. Basic legal principles for boundary surveying. Evaluation, use, and admissibility of boundary evidence in courts of law. Discussion of surveyor's liability and role in courts of law.

**Prerequisites:** CIVE 1100 with a minimum grade of D- and CIVE 1110 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 3730 Geodetic and Control Surveying**

[0-3 credit hours]

Introduction to Geodesy and Control Surveying including State Plane Coordinates, Azimuths from Celestial Observations, Development of Control Networks for Surveys, Introduction of Global Positioning Systems and Aerial Mapping, high accuracy measurements which account for the curvature of the Earth, and definitions of geodetic data for survey control.

**Prerequisites:** (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030)

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Summer

**CIVE 3760 Route and Construction Surveying**

[0-3 credit hours]

Route Surveying and Geometric Design including Horizontal, Vertical and Spiral Curves, Topographic Surveying and Mapping, Earthwork Volumes, and Construction Layout and Staking. **Prerequisites:** (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030)

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Summer

**CIVE 3770 Cadastral Surveys and Ohio Land Systems**

[3 credit hours]

Study of the Official Surveys of the United States. Establishment and Retracement of Public Land Survey System Surveys and Colonial Land Surveys. History of Land Systems in the United States and Original Ohio Land Subdivisions. **Prerequisites:** (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030).

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Spring

**CIVE 3940 Co-Op Experience**

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** CIVE 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CIVE 3950 Co-op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** CIVE 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CIVE 4210 Advanced Soil Mechanics**

[3 credit hours]

A study of soil behavior including stress distributions, deformation, consolidation and shear strength. The course focuses upon the development and use of well accepted solutions and practical applications.

**Prerequisites:** CIVE 3210 with a minimum grade of D-

**CIVE 4240 Design With Geosynthetics**

[3 credit hours]

Use of geosynthetic materials in engineering design for reinforcement, barrier, separation and/or drainage functions. Design applications for geotechnical, transportation and environmental uses.

**Prerequisites:** (CIVE 3210 with a minimum grade of D- and CIVE 3220 with a minimum grade of D-)

**CIVE 4300 Advanced Mechanics Of Materials**

[3 credit hours]

Introduction to theory of elasticity, plane-stress and plane-strain problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetrical bending, torsion, shear center and axisymmetrically loaded members.

**Prerequisites:** CIVE 1160 with a minimum grade of D- and (MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4320 Computer-Aided Analysis of Structures**

[3 credit hours]

Matrix analysis of continuous beams, trusses and frames by force method and displacement method. Methods of consistent deformation and slope deflection will be discussed to complement the matrix analysis. Computer applications.

**Prerequisites:** CIVE 3310 with a minimum grade of D-

**CIVE 4340 Experimental Mechanics**

[3 credit hours]

Application of experimental techniques to stress analysis. Comparison of experimental and analytical methods. Theory of electrical resistance strain gages. Methods of photoelasticity including photostress. Data acquisition systems and their use.

**Prerequisites:** CIVE 2110 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 4430 Structural Steel Design II**

[3 credit hours]

Study of local failure in beams, biaxial bending, plate girders, composite beams, semi-rigid composite connections and beam columns.

**Prerequisites:** CIVE 3410 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 4440 Reinforced Concrete Design II**

[3 credit hours]

Analysis and design of columns under axial compression and biaxial bending. Consideration of bar cut-off, development lengths. Design of two-way slabs and building frames in reinforced concrete. Deflection of beams. Shear design provisions for deep beams.

**Prerequisites:** CIVE 3420 with a minimum grade of D-

**CIVE 4480 Reinforced Masonry Design**

[3 credit hours]

Study of the design of reinforced and unreinforced masonry design, beams and walls and columns. Working stress design, strength design and empirical design are studied.

**Prerequisites:** CIVE 3420 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 4550 Traffic Control**

[3 credit hours]

To provide a detailed understanding of the basic concepts of traffic engineering together with driver-roadway-vehicle system characteristics. Capacity analysis of freeways, rural highways, multilane and two lane highways. Traffic control devices and traffic signal design and capacity. Traffic studies and data collections; volume, speed and travel time, accident and parking studies. Introduction to other tools to mitigate traffic congestion.

**Prerequisites:** CIVE 3510 with a minimum grade of D-

**Term Offered:** Fall

**CIVE 4610 Hydrology And Water Resources**

[3 credit hours]

This course is directed to application of fluid mechanics, hydrology, and hydraulics to the discipline of water resources engineering. Topics covered include flow in closed conduits, flow in open channels, pump systems, surface water hydrology, and computational modeling for hydraulic systems. At the successful completion of this course, the student will learn to apply the fundamental principles to the practical solution of both analysis and design problems in closed and open conduit flows.

**Prerequisites:** (CIVE 3610 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

**Term Offered:** Spring

**CIVE 4630 Indoor Air Quality**

[3 credit hours]

Characterization of indoor air pollutants, predictions of indoor air quality levels and indoor air quality control. Four to five design problems involving indoor air quality will be discussed/solved in the class. Special emphasis on the indoor radon and asbestos problems in the United States. Use of USEPA program.

**Term Offered:** Fall

**CIVE 4680 Environmental Law**

[3 credit hours]

An overview of the major federal environmental statutes: Clean Air Act, Clean Water Act, RCRA, CERCLA, etc. and legal perspective of why they were developed. Exposure to some basic legal principles which will be integrated into the overall study of environmental law. Provides a practical perspective on how the law can be applied to situations encountered by environmental engineers and scientists in the real world.

**Term Offered:** Fall

**CIVE 4690 Sustainability Engineering**

[3 credit hours]

Course develops students' abilities to apply the principles of sustainability to engineered systems. Course topics include sustainability definition and data, life cycle assessment based design, planetary boundaries, greenhouse gas emissions, green construction.

**Term Offered:** Spring, Fall



**CIVE 4710 Advanced Engineering Systems Modeling**

[3 credit hours]

A systematic approach to the analysis of complicated engineering system involving uncertain and probabilistic phenomena. Decision-making with multiple objectives, monte carlo simulation, reliability based design, and Markov process are studied.

**Prerequisites:** (CIVE 3120 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4720 Boundary Control and Legal Principles**

[3 credit hours]

Establishment and Re-establishment of Land Boundaries, Locating Points and Line for Boundaries, Historical Development of Boundaries, Introduction of Rectangular System of Public Land Surveys, Systems to Describe Properties, Application of Legal Principles to Boundary Analysis. Prerequisites: (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030).

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4750 Senior Design Projects**

[0-3 credit hours]

To provide real world civil engineering design experience through a design problem as would be developed in an actual civil engineering consultant's office.

**Term Offered:** Spring, Fall

**CIVE 4770 Legal and Ethical Aspects of Surveying**

[3 credit hours]

Study of Statute and Common Law pertaining to Surveying and Property Rights, Interpretations and Methods to Describe Real Property, Minimum Standards for Surveys, Ethics for Professional Surveyors. Prerequisites: (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030)

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4900 Seminars In Civil Engineering**

[1-3 credit hours]

An opportunity for qualified upperclassmen to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall

**CIVE 4990 Special Topics - Independent Study**

[1-3 credit hours]

An opportunity for a qualified upper class person to pursue a relevant area of Civil Engineering under the supervision of a faculty member.

## BS in Civil Engineering

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
MATH 1850	Single Variable Calculus I	4

CHEM 1230	General Chemistry I	4
CIVE 1000	Freshman Civil Engineering Experience	1
CIVE 1100	Civil Engineering Measurements	3
CIVE 1110	Computer Aided Drafting for Civil Engineers	1
Hours		16

**Second Term**

ENGL 2950	Science And Technical Report Writing	3
MATH 1860	Single Variable Calculus II	4
PHYS 2130	Physics For Science And Engineering Majors I	5
CIVE 2000	Professional Development	1
Social Sciences Core		3
Hours		16

**Third Term**

MATH 2850	Elementary Multivariable Calculus	4
MATH 2890	Numerical Methods And Linear Algebra	3
PHYS 2140	Physics For Science And Engineering Majors II	5
CIVE 1150	Engineering Mechanics: Statics	3
Science Elective		3
Hours		18

**Fourth Term**

MATH 2860	Elementary Differential Equations	3
MIME 2300	Engineering Dynamics	3
CIVE 1160	Engineering Mechanics: Strength Of Materials	3
Arts/Humanities Core		3
Social Sciences Core		3
Hours		15

**Fifth Term**

CIVE 3940	Co-Op Experience	1
Hours		1

**Sixth Term**

CIVE 1170	Fluid Mechanics For Civil Engineers	3
CIVE 2110	Civil Engineering Materials With Laboratory	3
CIVE 3120	Civil Engineering Systems Analysis	3
CIVE 3310	Structural Analysis	3
FE Elective		3
Hours		15

**Seventh Term**

CIVE 3940	Co-Op Experience	1
Hours		1

**Eighth Term**

CIVE 3210	Soil Mechanics	3
CIVE 3510	Transportation Engineering I	3
CIVE 3610	Water Supply And Treatment	3
CIVE 3620	Air Pollution Engineering I	3
CIVE 3630	Wastewater Engineering	3
Hours		15

**Ninth Term**

CIVE 3940	Co-Op Experience	1
	Hours	1

**Tenth Term**

CIVE 3220	Foundation Engineering	3
CIVE 3410	Steel Design I	3
CIVE 3420	Reinforced Concrete Design I	3
CIVE 3520	Transportation Engineering II	3
MIME 4000	Engineering Statistics I	3
	Hours	15

**Eleventh Term**

CIVE 4750	Senior Design Projects	3
MIME 2600	Engineering Economics	3
Technical Elective		3
Technical Elective		3
Diversity of US		3
Arts/Humanities Core/Non-US Diversity		3
	Hours	18
	Total Hours	131

## BS in Environmental Engineering

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 1850	Single Variable Calculus I	4
CHEE 1000	Orientation And Computing For Chemical Engineers	3
EEES 2010	Introduction To Environmental Studies	3
	Hours	15
<b>Second Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
MATH 1860	Single Variable Calculus II	4
CHEE 2010	Mass And Energy Balances	3
CIVE 2000	Professional Development	1
EEES 2150	Biodiversity	4
	Hours	17
<b>Third Term</b>		
PHYS 2130	Physics For Science And Engineering Majors I	5
MATH 2850	Elementary Multivariable Calculus	4
CHEE 2230	Chemical Engineering Thermodynamics I	3
ENGL 1110	College Composition I	3
CIVE 2550	Sustainability Problem Solving	1
	Hours	16

**Fourth Term**

MATH 2860	Elementary Differential Equations	3
PHYS 2140	Physics For Science And Engineering Majors II	5
CIVE 1150	Engineering Mechanics: Statics	3
CIVE 2550	Sustainability Problem Solving	1
Arts/Humanities Core		3
	Hours	15

**Fifth Term**

CIVE 3940	Co-Op Experience	1
	Hours	1

**Sixth Term**

CHEE 2110 or CIVE 1170	Process Fluid Mechanics or Fluid Mechanics For Civil Engineers	3
CIVE 1160	Engineering Mechanics: Strength Of Materials	3
CIVE 2550	Sustainability Problem Solving	1
CIVE 4680	Environmental Law	3
EEES 3050	General Ecology	3
ENGL 2950	Science And Technical Report Writing	3
	Hours	16

**Seventh Term**

CIVE 3940	Co-Op Experience	1
	Hours	1

**Eighth Term**

CIVE 3210	Soil Mechanics	3
CIVE 3610	Water Supply And Treatment	3
CIVE 3620	Air Pollution Engineering I	3
CIVE 3630	Wastewater Engineering	3
EEES 4450	Hazardous Waste Management	3
Social Sciences Core		3
	Hours	18

**Ninth Term**

CIVE 3940	Co-Op Experience	1
	Hours	1

**Tenth Term**

ECON 3240	Environmental Economics	3
MIME 4000	Engineering Statistics I	3
Technical Elective		3
CIVE 2550	Sustainability Problem Solving	1
Arts/Humanities Core/Diversity of US		3
Social Sciences Core		3
	Hours	16

**Eleventh Term**

CIVE 4750	Senior Design Projects	3
EEES Elective		3
Technical Elective		3
Technical Elective		3

Non-US Diversity	3
Hours	15
Total Hours	131

## Surveying Minor

Code	Title	Hours
CIVE 3720	Boundary Surveying	3
CIVE 3730	Geodetic and Control Surveying	0-3
CIVE 3760	Route and Construction Surveying	0-3
CIVE 3770	Cadastral Surveys and Ohio Land Systems	3
CIVE 4720	Boundary Control and Legal Principles	3
CIVE 4770	Legal and Ethical Aspects of Surveying	3
Total Hours		12-18

## Department of Electrical Engineering and Computer Science

**Mansoor Alam, Professor, Chair**

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The mission of the EECS Department is to educate future engineers and scientists in the fields of electrical engineering and computer science; to contribute to the body of knowledge in the fields of electrical engineering and computer science; and to conduct research and contribute to the development of innovative solutions to address diverse technological and societal needs.

## Degrees Offered

- BS in Computer Science and Engineering (p. 268)
- BS in Electrical Engineering (p. 269)
- Minor in Computer Science and Engineering (p. 270)

### EECS 1000 EECS First Year Design

[0-3 credit hours]

Orientation to the University, college and departmental facilities, procedures and methodologies available to the student for the academic journey. Introduction to engineering design to EECS freshmen with emphasis on a semester long team-based design project.

**Term Offered:** Fall

### EECS 1100 Digital Logic Design

[0-4 credit hours]

Number representation and Boolean Algebra. Combinational circuit analysis and design. K-map and tabulation methods. Multiplexers, decoders, adders/subtractors and PLD devices. Sequential circuit analysis and design. Registers, counters and recognizers.

**Term Offered:** Spring, Fall

### EECS 1500 Introduction to Programming

[0-3 credit hours]

Covers the concept and properties of an algorithm, analysis and decomposition of computational problems, use of modern programming practices. Introduction to arrays and classes. Uses the C++ language.

**Term Offered:** Spring

### EECS 1510 Introduction To Object Oriented Programming

[0-3 credit hours]

Introduces the basics of programming using the Java language. Covers number types, objects, methods, control structures, vectors, files, and inheritance. Utilizes the Java platform to develop GUI interfaces.

**Term Offered:** Spring

### EECS 2000 EECS Professional Development

[1 credit hour]

Preparation for entry to the professions of Electrical Engineering and Computer Science and Engineering, including ethics and social responsibilities, employment practices, continuing education and professional registration.

**Term Offered:** Spring

### EECS 2110 Computer Architecture and Organization

[3 credit hours]

Fundamentals of computer architecture, computer arithmetic, memory systems, interfacing and communication, device subsystems, processor design, cpu organization, assembly programming, performance, distributed models and multiprocessing.

**Prerequisites:** EECS 1100 with a minimum grade of D- and EECS 1500 with a minimum grade of D- or EECS 1510 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

### EECS 2300 Electric Circuits

[0-4 credit hours]

An introduction to electrical circuit components and laws, including ideal op-amps, DC circuit analysis, AC circuit analysis, transient analysis of RL and RC circuits and computer-aided circuit analysis.

**Prerequisites:** PHYS 2140 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

### EECS 2340 Electric Circuits For Nonmajors

[3 credit hours]

For students not majoring in EECS. An introduction to electrical circuit components and laws, resistive circuit analysis, AC circuit analysis, phasers, three-phase circuits and computer-aided circuit analysis.

**Prerequisites:** PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**EECS 2500 Linear Data Structures**

[3 credit hours]

This course looks at stacks, queues, and lists as well as the order of algorithms used to access and modify these structures. In addition recursion, hashing, sorting, and set representation are examined in depth.

**Prerequisites:** EECS 1510 with a minimum grade of D-

**Term Offered:** Fall

**EECS 2510 Non-Linear Data Structures**

[3 credit hours]

The data structures introduced in EECS 1570 are extended to include trees (binary, balanced, and n-ary), graphs, and advanced sorting techniques. In addition, the C++ language is used as the main vehicle and is introduced in the course. Students are expected to have a strong background in Java prior to this course.

**Prerequisites:** EECS 2500 with a minimum grade of D- and EECS 2520 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 2520 Discrete Structures**

[3 credit hours]

An introduction to the discrete structures used in computer science to develop software including proof techniques, Boolean logic, graphs, trees, recurrence relations, functions, combinatorics, and number theory.

**Prerequisites:** PHIL 1010 with a minimum grade of D- and EECS 1510 with a minimum grade of D-

**Term Offered:** Spring, Summer

**EECS 3100 Embedded Systems**

[0-4 credit hours]

Microcontroller interfacing, assembly and C language programming for embedded systems, timer, input/output synchronization; analog to digital conversion, digital to analog conversion, interrupts, and embedded system debugging techniques.

**Prerequisites:** EECS 2110 with a minimum grade of D- and EECS 3210 with a minimum grade of D- and EECS 3400 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**EECS 3150 Data Communications**

[3 credit hours]

Analog and digital data transmission, transmission media, Modulation techniques. Data encoding, asynchronous and synchronous transmissions, USART, RS232-C, RS-449 standards. Data link configuration and control, error control, multiplexing and demultiplexing.

**Prerequisites:** (EECS 1100 with a minimum grade of D- and EECS 3210 with a minimum grade of D-)

**Term Offered:** Summer, Fall

**EECS 3210 Signals and Systems**

[3 credit hours]

Signal and system representation. Convolution and impulse response. Fourier series, Fourier transform and Laplace transform. Discrete-time systems and Z-transforms. Computer simulation using MATLAB.

**Prerequisites:** EECS 2300 with a minimum grade of D- and (EECS 1500 with a minimum grade of D- or EECS 1510 with a minimum grade of D-) and MATH 2890 with a minimum grade of D- and (MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EECS 3220 Electric Circuits II**

[3 credit hours]

Advanced topics including three-phase systems, magnetically-coupled systems, resonance and second-order systems, Laplace transform circuit analysis, Fourier series for periodic waveforms and applications to electric circuits, ideal filters, system modeling and two-port networks.

**Prerequisites:** EECS 2300 with a minimum grade of D-

**Corequisites:** EECS 3210

**Term Offered:** Spring, Fall

**EECS 3300 Probabilistic Methods In Engineering**

[3 credit hours]

Techniques for modeling and analysis of random phenomena in EECS, including communication, control and computer systems. Distribution, density and characteristic functions. Computer generation. Functions of random variables.

**Prerequisites:** EECS 3210 with a minimum grade of D-

**Term Offered:** Spring

**EECS 3400 Electronics I**

[0-4 credit hours]

Large-signal and incremental characteristics of the pn diode, BJT, MOSFET and JFET. Large-signal analysis and computer simulation of devices and digital circuits. Logic gate implementation. Laboratory experiments and projects.

**Prerequisites:** EECS 2300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3420 Electronics II**

[3 credit hours]

Analog transistor, diode and integrated circuit analysis and design. Incremental analysis techniques, frequency response and feedback techniques.

**Prerequisites:** (EECS 3210 with a minimum grade of D- and EECS 3400 with a minimum grade of D-)

**Term Offered:** Summer, Fall

**EECS 3440 Electronics Laboratory**

[1 credit hour]

Laboratory experiments and projects in the testing and design of analog and mixed-signal electronic circuits.

**Prerequisites:** EECS 3420 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3460 Electrical Energy Conversion**

[3 credit hours]

Traditional and renewable electrical energy sources, principles of electromechanical energy conversion, magnetic circuits and transformers, steady state performance of synchronous machines, dc machines, single phase and three phase induction motors.

**Prerequisites:** EECS 3710 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Summer, Fall

**EECS 3480 Energy Conversion Laboratory**

[1 credit hour]

Laboratory studies of power transformers, synchronous machines, DC machines, single and three phase induction motors.

**Prerequisites:** EECS 3460 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3540 Systems And Systems Programming**

[3 credit hours]

Examines the external and internal characteristics of computer operating systems and related software. Details of at least one operating system and comparison with other operating systems. An introduction to systems level programming.

**Prerequisites:** EECS 2110 with a minimum grade of D- and EECS 2510 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3550 Software Engineering**

[3 credit hours]

An introduction to the Software Engineering process. Includes: the software lifecycle, user requirements, human-computer interaction, functional specification, software design, software tools, testing and modification. A major term project is assigned.

**Prerequisites:** EECS 2510 with a minimum grade of D- and (ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1020 with a minimum grade of D-)

**Term Offered:** Spring

**EECS 3710 Electromagnetics I**

[3 credit hours]

The nature of electromagnetism, Complex numbers, Transmission lines, Smith chart, Impedance matching, Vector analysis, Coordinate transformations, Electrostatics, Electrical properties of materials, Boundary conditions, Magnetostatics, Magnetic properties of materials, Boundary conditions.

**Prerequisites:** EECS 2300 with a minimum grade of D- and PHYS 2140 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3720 Electromagnetics II**

[3 credit hours]

Maxwell's equations, Boundary conditions for electromagnetics, Plane-wave propagation in lossless and lossy media, Reflection, Transmission, Waveguides, Cavity resonators, Radiation, Antenna radiation characteristics, Antennas, Satellite communication systems, Introduction to CAD tools.

**Prerequisites:** EECS 3710 with a minimum grade of D-

**Term Offered:** Spring

**EECS 3940 Co-Op Experience**

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** EECS 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**EECS 3950 Co-Op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** EECS 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**EECS 4000 Senior Design Project**

[4 credit hours]

Student teams select and research a design project and propose a design which is implemented, tested and evaluated. Progress reports, a written final report and an oral presentation are required.

**Prerequisites:** EECS 3100 with a minimum grade of D- or EECS 3420 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4010 Senior Design Project I**

[1 credit hour]

Student teams select and research a design project and propose a design. Topics covered include entrepreneurship, business plan, technical communications, design process, design teams, standards, ethics, safety and environment, and intellectual property. A fully developed senior design project proposal is required.

**Prerequisites:** EECS 3100 with a minimum grade of D- or EECS 3420 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4020 Senior Design Project II**

[3 credit hours]

Student teams implement, test and evaluate a design previously proposed in EECS 4010. Written reports on progress and final project are required. Preliminary design and critical design reviews may be performed. Oral presentation and senior design exposition participation are needed.

**Prerequisites:** EECS 4010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4100 Theory of Computation**

[3 credit hours]

Examines formal models of automata and languages. Finite-state automata, regular languages, pushdown automata, context-free languages, Turing machines, decidability, reducibility, and P vs NP complexity classes.

**Prerequisites:** EECS 2510 with a minimum grade of D- and EECS 2520 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4120 Introduction to Fuzzy Systems and Applications**

[3 credit hours]

[3 hours] Introduction to Fuzzy Rule Based Intelligent Systems. Basic Concepts of Fuzzy logic, Fuzzy Sets, Fuzzy Arithmetic, Fuzzy Relations, Fuzzy Graphs, Approximate Reasoning and Fuzzy Implications. Applications in Real World Domains. Prerequisite: EECS 2110.

**Prerequisites:** EECS 2110 with a minimum grade of D-

**EECS 4130 Digital Design**

[4 credit hours]

The design of digital systems, design methodologies, hardware description language such as VHDL: behavioral-, data flow- and structural-level description of digital systems. Implementation technologies including PLDs and FPGAs.

**Prerequisites:** EECS 2110 with a minimum grade of D-

**Term Offered:** Spring



**EECS 4170 Real-Time Embedded Systems Design**

[3 credit hours]

Programming applications in a real-time environment. C language is used to program various microcontroller functions, including timers, A/D and D/A converters, RS-232 communication and CAN networking.

**Prerequisites:** EECS 3100 with a minimum grade of D-

**EECS 4200 Feedback Control Systems**

[3 credit hours]

Feedback methods for the control of dynamic systems. Topics include characteristics and performance of feedback systems, state variable analysis, stability, root locus and frequency response methods and computer simulation.

**Prerequisites:** EECS 3220 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4220 Programmable Logic Controllers**

[3 credit hours]

An introduction to programmable logic controllers (PLCs), process control algorithms, interfacing of sensors and other I/O devices, simulation and networking.

**Prerequisites:** (EECS 1100 with a minimum grade of D- and EECS 3210 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EECS 4240 Power Systems Operation**

[3 credit hours]

Single line diagrams and per unit calculations, network matrices and Y-bus, load flow techniques, large system loss formula, real and reactive power dispatch, power system relays and protection.

**Prerequisites:** EECS 3460 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4260 Control Systems Design**

[3 credit hours]

A general study of computer-aided design of control systems. Topics include: stability, compensation, pole placement, nonlinear systems and digital systems.

**Prerequisites:** EECS 4200 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4330 Image Analysis And Computer Vision**

[3 credit hours]

Imaging geometry, image filtering, segmentation techniques, image representation and description, stereo vision and depth measurements, texture analysis, dynamic vision and motion analysis, matching and recognition.

**Prerequisites:** EECS 3300 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4360 Communication Systems**

[3 credit hours]

Fourier transform applications in signal analysis and communication. Signals spectra, filtering, AM and FM modulation, noise and optimum receiver, sampling theorem, multiplexing, PCM, introduction to digital modulators and demodulators.

**Prerequisites:** EECS 3300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4370 Information Theory And Coding**

[3 credit hours]

Coding concepts, Huffman code, entropy analysis, channel and mutual information, channel capacity and Shannon's theorem, algebraic coding theory and application to blockcode and cyclic code, introduction to convolutional code.

**Prerequisites:** EECS 3300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4380 Digital Signal Processing**

[3 credit hours]

Discrete Fourier Transform (DFT), discrete convolution and correlation, Fast Fourier Transform (FFT) and its applications, design of IIR and FIR digital filters, multirate/channel digital systems, decimation and interpolation.

**Prerequisites:** EECS 3210 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4390 Wireless And Mobile Networks**

[3 credit hours]

Mobile radio propagation; the cellular concept; multiple radio access; multiple division techniques; channel allocation; mobile communication systems; existing wireless systems; network protocols; AD HOC and sensor networks; wireless LANS and PANS; recent advances.

**Prerequisites:** (EECS 3210 with a minimum grade of D- and EECS 3300 with a minimum grade of D-) or (EECS 3210 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EECS 4400 Solid State Electronics**

[3 credit hours]

A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors and various models of BJT's and FET's.

**Prerequisites:** (EECS 3400 with a minimum grade of D- and PHYS 3070 with a minimum grade of D-)

**Term Offered:** Fall

**EECS 4410 Electro-Optics**

[3 credit hours]

Introduction to laser physics, optics, optical waveguides, optical communication systems and electro-optics. Design of light processing and communication systems will be considered with emphasis on optics and optical communication.

**Prerequisites:** EECS 3710 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4460 Power System Mangement**

[3 credit hours]

An advanced study of the management and operation of today's power system. Included are historical developments, utility and operational costs and economics, power generation alternatives, fuel alternatives, renewable applications, transmission and distribution practices, and a discussion of current power system issues, both in the U.S. and abroad.

**Prerequisites:** EECS 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4470 Electronic Design**

[3 credit hours]

Principles and techniques of analog active circuit design. Selected design problems are given and circuits using standard parts are designed and laboratory tested. A design notebook is kept.

**Prerequisites:** EECS 3210 with a minimum grade of D- and EECS 3420 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4480 Power Electronics**

[3 credit hours]

Electronic power switching circuits. Half-wave and full-wave rectification. Characteristics of wide bandgap semiconductors. Analysis and design of inverters (dc-ac converters). Isolated and non-isolated dc-dc converters.

**Prerequisites:** EECS 3420 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4490 Electronic Energy Processing II**

[3 credit hours]

Resonant dc-dc converters. DC-AC inverters and harmonic analysis. Variable-speed motor drives. Laboratory design and analysis of various electronic energy processing circuits.

**Prerequisites:** EECS 4480 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4500 Programming for the World Wide Web**

[3 credit hours]

Fundamental concepts and programming languages for constructing contemporary websites. Differences and similarities between procedural, object-oriented, and scripting languages. Topics include HTML, Javascript, CSS, XML, Ajax, PHP, ASP.net, Three.js, and related technologies, as well as their impact on the programming process.

**Prerequisites:** EECS 2510 with a minimum grade of D- and EECS 4100 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4520 Advanced Systems Programming**

[4 credit hours]

Pertinent concepts of systems programming. Topics covered include: synchronization, distributed programming models, kernel design, peripheral handling, file systems and security history and methods.

**Prerequisites:** EECS 3540 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4530 Computer Graphics I**

[4 credit hours]

An introduction to typical computer graphics systems and their operation. Interactive techniques will be introduced as well as representations and projections of three-dimensional images. Exercises using graphics equipment are assigned.

**Prerequisites:** EECS 1500 with a minimum grade of D- or EECS 1510 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4540 Computer Graphics II**

[4 credit hours]

Examines current topics related to realistic and representative 3D computer graphics. Topics include curve and surface geometry, solid modeling, ray tracing, radiosity and real-time computer graphics.

**Prerequisites:** EECS 2510 with a minimum grade of D- and EECS 4530 with a minimum grade of D-

**EECS 4560 Database Management Systems**

[3 credit hours]

Introduction to Database Systems, Data Modeling, Entity-Relationship Diagrams, The Relational Model, SQL, Relational Algebra, Relational Calculus, Normal Forms (1NF, 2NF, 3NF, BCNF, 4NF, PJNF/5NF), Candidate keys, superkeys, schema decomposition, Functional dependency, Entity and Referential Integrity.

**Prerequisites:** EECS 2510 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4580 Human Computer Interface Design**

[3 credit hours]

[3 hours] The design of human-computer interfaces and their importance to human-computer interaction. Human engineering, implementation techniques, prototyping, and current and future research areas.

**Prerequisite:** EECS 3550

**Prerequisites:** EECS 3350 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4590 Algorithms**

[3 credit hours]

Techniques for devising efficient computer algorithms. Topics include: divide-and-conquer techniques, dynamic programming, linear programming, graph algorithms, greedy algorithms, NP and P complexity classes, and approximation algorithms for NP complete problems.

**Prerequisites:** EECS 2510 with a minimum grade of D and EECS 4100 with a minimum grade of D-

**EECS 4600 Solid State Devices**

[0-4 credit hours]

Theory and operation of physical electronic devices. Electrical transport in metals, semiconductors and models of BJT's and FET's. Optoelectronic devices and integrated circuits. Laboratory includes hands-on experimentation with basic semiconductor fabrication processes.

**Prerequisites:** EECS 3400 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4610 Digital Vlsi Design I: Basic Subsystems**

[4 credit hours]

CMOS process technologies, CMOS logic families, custom and semi-custom design. Subsystem design of adders, counters and multipliers. System design methods and VLSI design tools.

**Prerequisites:** EECS 3400 with a minimum grade of D-

**EECS 4640 Inside Cryptography**

[3 credit hours]

Examines the inner workings of several cryptographic algorithms, including the discrete math behind them. Introduces operations in a Galois Field, and covers some Prime Number Theory. Symmetric algorithms include Feistel (DES) and non-Feistel (AES) designs; Asymmetric algorithms include Merkle-Hellman and RSA. Block and stream modes are explored, as are cryptographic hash functions, and ECB and Chained modes of encryption.

**Prerequisites:** EECS 2520 with a minimum grade of D- and EECS 3100 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4720 Fundamentals of Cyber Security**

[3 credit hours]

Introduces to cyber security, its interdisciplinarity, relation to nation, businesses, society, and people. Discusses cyber security terminologies, technologies, protocols, threat analysis, security principles, security mechanisms, policies, forensics, incidence response and methods/practices to secure systems. Additional real-world security problems are discussed using hands-on experiments.

**Prerequisites:** EECS 2110 with a minimum grade of D-**Term Offered:** Fall**EECS 4730 Open Source Software**

[3 credit hours]

History and description of the open source movement, who participates, how it works, and why it works. Evolution patterns of open source development, the code itself, and the open source community as a whole. Open source licenses, legal issues, and commercial markets. Survey of real-world implementations.

**Prerequisites:** EECS 3550 with a minimum grade of D-**EECS 4740 Artificial Intelligence**

[3 credit hours]

This course explores the topic of intelligent software agents with a emphasis on hands-on design of adaptive problem-solving agents for environments of increasing complexity ranging from single-agent computer games to complex real-world multi-agent environments.

**Prerequisites:** EECS 2510 with a minimum grade of D-**Term Offered:** Spring, Fall**EECS 4750 Machine Learning**

[3 credit hours]

This course emphasizes learning algorithms and theory including concept, decision tree, neural network, computational, Bayesian, evolutionary, and reinforcement learning.

**Prerequisites:** (MIME 4000 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and EECS 2110 with a minimum grade of D-)**Term Offered:** Fall**EECS 4760 Computer Security**

[3 credit hours]

Foundational concepts in Computer Security: The CIA Triad, Authentication, Access Control, Least Privilege, Complete Mediation, Economy of Mechanism, Reference Monitors, Defensive Programming, Threats and Attacks, Network Security, Introduction to Cryptography, Database Security.

**Prerequisites:** EECS 2110 with a minimum grade of D- and EECS 3540 with a minimum grade of D-**Term Offered:** Fall**EECS 4770 Computer Hacking and forensic Analysis**

[3 credit hours]

Hacking ethics, beneficial vs. malicious hacking, unconventional (extreme) programming techniques, casing networks and operating systems, exposing system vulnerabilities through penetration, collecting and analyzing digital evidence, forensic tools, case studies.

**Prerequisites:** EECS 2110 with a minimum grade of D-**EECS 4790 Network Security**

[4 credit hours]

Theory and practice of network security. Topics include firewalls, Windows, UNIX and TCP/IP network security. Security auditing, attacks, viruses, intrusion detection and threat analysis will also be covered.

**Prerequisites:** EECS 4720 with a minimum grade of D-**Term Offered:** Spring**EECS 4980 Special Topics In EECS**

[1-4 credit hours]

Pilot offerings of new courses involving emerging topics of interest are introduced using this number. One credit per lecture/recitation hour and/or 2.5 lab hours per week.

**Term Offered:** Spring, Summer, Fall**EECS 4990 Independent Study In Eecs**

[1-4 credit hours]

Selected topics in electrical engineering or computer science and engineering. The instructor will specify the scope of the investigation and will meet regularly with the student(s). The study is expected to require an average of 3 hours student effort per week per credit.

**Term Offered:** Spring, Summer, Fall

## BS in Computer Science and Engineering

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
MATH 1850	Single Variable Calculus I	4
CHEM 1230	General Chemistry I	4
EECS 1000	EECS First Year Design	3
ENGL 1110	College Composition I	3
PHIL 1010	Introduction To Logic	3
Hours		17
<b>Second Term</b>		
MATH 1860	Single Variable Calculus II	4
PHYS 2130	Physics For Science And Engineering Majors I	5
EECS 2000	EECS Professional Development	1
EECS 1510	Introduction To Object Oriented Programming	3
ENGL 2950	Science And Technical Report Writing	3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
PHYS 2140	Physics For Science And Engineering Majors II	5
EECS 1100	Digital Logic Design	4
EECS 2500	Linear Data Structures	3
Hours		16
<b>Fourth Term</b>		
MATH 2860	Elementary Differential Equations	3

MATH 2890	Numerical Methods And Linear Algebra	3
EECS 2110	Computer Architecture and Organization	3
EECS 2300	Electric Circuits	4
EECS 2520	Discrete Structures	3
Hours		16
<b>Fifth Term</b>		
EECS 3940	Co-Op Experience	1
Hours		1
<b>Sixth Term</b>		
EECS 2510	Non-Linear Data Structures	3
EECS 3210	Signals and Systems	3
EECS 3400	Electronics I	4
Social Sciences Core		3
Free Elective		3
Hours		16
<b>Seventh Term</b>		
EECS 3940	Co-Op Experience	1
Hours		1
<b>Eighth Term</b>		
EECS 3100	Embedded Systems	4
EECS 3150	Data Communications	3
MIME 4000	Engineering Statistics I	3
ECON 1150	Principles Of Macroeconomics or ECON 1200 or Principles Of Microeconomics	3
EECS 4560	Database Management Systems	3
Hours		16
<b>Ninth Term</b>		
EECS 3940	Co-Op Experience	1
Hours		1
<b>Tenth Term</b>		
EECS 3540	Systems And Systems Programming	3
EECS 3550	Software Engineering	3
EECS 4010	Senior Design Project I	1
EECS 4100	Theory of Computation	3
Technical Elective		3
Arts/Humanities Core/Diversity of US		3
Hours		16
<b>Eleventh Term</b>		
EECS 4020	Senior Design Project II	3
Technical Elective		3
Technical Elective		3
Non-US Diversity		3
EECS 4760	Computer Security	3
Hours		15
Total Hours		131

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
MATH 1850	Single Variable Calculus I	4
CHEM 1230	General Chemistry I	4
EECS 1000	EECS First Year Design	3
ECON 1150	Principles Of Macroeconomics or ECON 1200 or Principles Of Microeconomics	3
ENGL 1110	College Composition I	3
Hours		17
<b>Second Term</b>		
MATH 1860	Single Variable Calculus II	4
PHYS 2130	Physics For Science And Engineering Majors I	5
EECS 2000	EECS Professional Development	1
EECS 1500	Introduction to Programming	3
ENGL 2950	Science And Technical Report Writing	3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
PHYS 2140	Physics For Science And Engineering Majors II	5
EECS 1100	Digital Logic Design	4
Arts/Humanities Core		3
Hours		16
<b>Fourth Term</b>		
MATH 2860	Elementary Differential Equations	3
MATH 2890	Numerical Methods And Linear Algebra	3
EECS 2110	Computer Architecture and Organization	3
EECS 2300	Electric Circuits	4
Diversity of US		3
Hours		16
<b>Fifth Term</b>		
EECS 3940	Co-Op Experience	1
Hours		1
<b>Sixth Term</b>		
EECS 3210	Signals and Systems	3
EECS 3220	Electric Circuits II	3
EECS 3400	Electronics I	4
EECS 3710	Electromagnetics I	3
Arts/Humanities Core/Non-US Diversity		3
Hours		16
<b>Seventh Term</b>		
EECS 3940	Co-Op Experience	1
Hours		1
<b>Eighth Term</b>		
EECS 3100	Embedded Systems	4
EECS 3420	Electronics II	3

## BS in Electrical Engineering

EECS 3460	Electrical Energy Conversion	3
CIVE 1150 or MIME 3400	Engineering Mechanics: Statics or Thermodynamics I	3
Social Sciences Core		3
Hours		16
<b>Ninth Term</b>		
EECS 3940	Co-Op Experience	1
Hours		1
<b>Tenth Term</b>		
EECS 3300	Probabilistic Methods In Engineering	3
EECS 3440	Electronics Laboratory	1
EECS 3720	Electromagnetics II	3
EECS 4010	Senior Design Project I	1
EECS 4200	Feedback Control Systems	3
Technical Elective		3
Hours		14
<b>Eleventh Term</b>		
EECS 3480	Energy Conversion Laboratory	1
EECS 4020	Senior Design Project II	3
EECS 4360	Communication Systems	3
EECS 4600	Solid State Devices	4
Technical Elective		3
Technical Elective		3
Hours		17
Total Hours		131

## Minor in Computer Science and Engineering

Students may earn a minor in computer science and engineering (CSE) by completing the six required courses listed below, plus two courses selected from the list of advanced courses. To be eligible to register for these courses, students must be coded as CSE minor candidates and have successfully completed MATH 1850 and MATH 1860. A GPA of 2.0 is required in the EECS courses.

Code	Title	Hours
<b>Required Courses</b>		
EECS 1100	Digital Logic Design	4
EECS 1510	Introduction To Object Oriented Programming	3
EECS 2110	Computer Architecture and Organization	3
EECS 2500	Linear Data Structures	3
EECS 2510	Non-Linear Data Structures	3
EECS 2520	Discrete Structures	3
<b>Advanced Courses</b>		
Select two of the following:		6-8
EECS 3100	Embedded Systems	
EECS 3540	Systems And Systems Programming	
EECS 3550	Software Engineering	
EECS 4100	Theory of Computation	
EECS 4130	Digital Design	

EECS 4500	Programming for the World Wide Web
EECS 4530	Computer Graphics I
EECS 4560	Database Management Systems
<hr/>	
Total Hours	25-27

## Department of Engineering Technology

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An education in engineering technology emphasizes problem solving, technical skills and extensive laboratory experience to integrate theory and practice. The curriculum includes a solid foundation in applied sciences and mathematics.

## Degrees Offered

- BS in Computer Science and Engineering Technology (p. 271)
- BS in Construction Engineering Technology (p. 272)
- BS in Electrical Engineering Technology (p. 273)
- BS in Information Technology (p. 273)
- BS in Mechanical Engineering Technology (p. 274)

### ENGT 1000 Engineering Technology Orientation

[1 credit hour]

Overview of careers in engineering technology, information about each program in Engineering Technology, and skills required for success in technological fields, such as computer skills.

**Term Offered:** Spring, Fall



**ENGT 2000 Professional Development**

[1 credit hour]

An introduction to the performance expectations of the engineering profession. Topics covered include resume writing, public speaking, interviewing skills, ethics, social responsibilities and the value of continuing education and professional registration.

**Prerequisites:** ENGT 1000 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGT 2500 Technical Project Management**

[3 credit hours]

General methodology of managing a technical project from concept to operational use. Emphasis is on the functions and responsibilities of the project manager related to maintaining project control and team management.

**Term Offered:** Spring, Fall

**ENGT 3010 Applied Statistics And Design Of Experiments**

[4 credit hours]

Introduction to probability, statistical inference and design of experiments. Topics include confidence intervals, tests of hypothesis, regression, analysis of variance, factorial experimental designs and propagation of experimental errors.

**Prerequisites:** MATH 2460 with a minimum grade of D- or MATH 1860 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGT 3020 Applied Engineering Mathematics**

[3 credit hours]

Introduction to partial derivatives, series expansions, complex variables, differential equations and Laplace transform analysis. Application of computers for numerical solution techniques.

**Prerequisites:** (MATH 2460 with a minimum grade of D- or MATH 1860 with a minimum grade of D-) and ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGT 3050 Fundamentals Of Electricity**

[0-4 credit hours]

An introduction to basic analytical techniques for resistive and reactive DC and AC electric circuits, and an introduction to electronic devices, including diodes and transistors. No credit towards EET degree.

**Prerequisites:** MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGT 3600 Engineering Economics**

[3 credit hours]

Fundamentals of analysis of engineering projects and capital investment decisions. Review of break-even analyses, rate of return, cost benefit ratios and tax and inflation implications will be performed.

**Term Offered:** Spring, Fall

**ENGT 3940 Co-Op Experience**

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** ENGT 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGT 3950 Co-op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** ENGT 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGT 4050 Senior Technology Capstone**

[3 credit hours]

A comprehensive problem in engineering technology is assigned to a group of students who work together as a team to present a solution in a formal written and oral report.

**Term Offered:** Spring, Fall

**ENGT 4900 Engineering Review For Professional Certification**

[3 credit hours]

A review and application of general engineering principles and procedures in preparation for the Fundamentals of Engineering (FE) exam. Offered for students preparing to take the exam and for those considering it.

**ENGT 4980 Special Topics In Engineering Technology**

[1-4 credit hours]

Selected topics in engineering technology with emphasis on intensive investigation of recent literature in areas of special interest.

**Term Offered:** Spring, Summer, Fall

## BS in Computer Science and Engineering Technology

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CSET 1100	Introduction to Computer Science and Engineering Technology	4
EET 2420	Electrical Instrumentation Laboratory	1
PHIL 1010	Introduction To Logic	3
ENGT 1000	Engineering Technology Orientation	1
ENGL 1110	College Composition I	3
Social Sciences Core		3
Hours		15
<b>Second Term</b>		
CSET 1200	Object Oriented Programming and Data Structures	3
PHYS 2010	Technical Physics I	5
Communications Elective		3
EET 2210	Digital Logic Fundamentals	4
ENGL 2950	Science And Technical Report Writing	3
Hours		18
<b>Third Term</b>		
PHYS 2020	Technical Physics II	5
MATH 2450	Calculus For Engineering Technology I	4
CSET 2200	PC and Industrial Networks	4

CSET 2230	Assembly Language and Computer Architecture	4
	Hours	17
<b>Fourth Term</b>		
ENGT 3050	Fundamentals Of Electricity	4
MATH 2460	Calculus For Engineering Technology II	4
EECS 2520	Discrete Structures	3
EET 2410	Mechatronics I	4
Social Sciences Core		3
	Hours	18
<b>Fifth Term</b>		
ENGT 2000	Professional Development	1
ENGT 3010	Applied Statistics And Design Of Experiments	4
EET 3350	Embedded Systems Design	4
MATH 2890	Numerical Methods And Linear Algebra	3
Technical Elective		3
	Hours	15
<b>Sixth Term</b>		
Natural Sciences Core		4
CSET 3150	Introduction to Algorithms	4
CSET 3300	Database-Driven Web Sites	4
	Hours	12
<b>Seventh Term</b>		
Professional Development Elective		3
CSET 3600	Software Engineering and Human Interfacing	4
CSET 4350	Operating Systems	3
CSET 4750	Computer Networks And Data Communication	4
Diversity of US		3
	Hours	17
<b>Eighth Term</b>		
Professional Development Elective		3
Arts/Humanities Core/Non-US Diversity		3
CSET 4250	Applied Programming Languages	3
ENGT 4050	Senior Technology Capstone	3
Technical Elective		4
	Hours	16
	Total Hours	128

## BS in Construction Engineering Technology

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGT 1000	Engineering Technology Orientation	1

MATH 1330	Trigonometry	3
ENGL 1110	College Composition I	3
CET 1010	Intro to Constr Eng Technology	1
CET 1100	Architectural Drafting	3
CET 1150	Construction Materials And Codes	3
	Hours	14

### Second Term

PHYS 2010	Technical Physics I	5
ENGL 2950	Science And Technical Report Writing	3
CET 1210	Surveying	3
CET 1250	Building Systems	3
Social Sciences Core		3
	Hours	17

### Third Term

PHYS 2020	Technical Physics II	5
MATH 2450	Calculus For Engineering Technology I	4
CET 1200	Engineering Mechanics	4
CET 2110	Materials Testing	3
CET 2010	Construction Safety	1
	Hours	17

### Fourth Term

CET 2030	Construction Graphics	3
CET 2060	Construction Estimating	3
CET 2220	Soil Mechanics	3
CET 2250	Structural Design	4
Social Sciences Core		3
	Hours	16

### Fifth Term

CET 3010	Architectural CADD	4
CET 3210	Surveying Applications	3
Communications Elective		3
MATH 2460	Calculus For Engineering Technology II	4
Natural Sciences Core		3
	Hours	17

### Sixth Term

Professional Development or Technical Elective		3
CET 3120	Advanced Construction Materials	3
CET 3160	Contracts and Specifications	3
CET 3220	Hydrology And Hydraulics	3
ENGT 3010	Applied Statistics And Design Of Experiments	4
	Hours	16

### Seventh Term

Professional Development or Technical Elective		3
Arts/Humanities Core		3
CET 4250	Advanced Structural Design	4
CET 4460	Construction Management And Scheduling	3
ENGT 3600	Engineering Economics	3
	Hours	16

**Eighth Term**

CET 4350	Soils, Foundations And Earth Structures	3
ENGT 4050	Senior Technology Capstone	3
Professional Development or Technical Elective		3
Diversity of US		3
Arts/Humanities Core/Non-US Diversity		3
Hours		15
Total Hours		128

## BS in Electrical Engineering Technology

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGT 1000	Engineering Technology Orientation	1
MATH 1330	Trigonometry	3
ENGL 1110	College Composition I	3
EET 1010	DC Circuits	4
CHEM 1230	General Chemistry I	4
Hours		15
<b>Second Term</b>		
ENGL 2950	Science And Technical Report Writing	3
Social Sciences Core		3
EET 1410	Electrical Drafting	3
EET 1020	AC Circuits	4
EET 2210	Digital Logic Fundamentals	4
Hours		17
<b>Third Term</b>		
MATH 2450	Calculus For Engineering Technology I	4
PHYS 2010	Technical Physics I	5
Communications Elective		3
EET 2010	Electronic Principles	4
Hours		16
<b>Fourth Term</b>		
MATH 2460	Calculus For Engineering Technology II	4
PHYS 2020	Technical Physics II	5
EET 2020	Electronic Device Applications	4
CSET 2200	PC and Industrial Networks	4
Hours		17
<b>Fifth Term</b>		
ENGT 3010	Applied Statistics And Design Of Experiments	4
ENGT 3020	Applied Engineering Mathematics	3
EET 3150	C Programming	4
EET 2410	Mechatronics I	4
Hours		15

**Sixth Term**

Diversity of US		3
EET 3250	Network Analysis	3
EET 3350	Embedded Systems Design	4
EET 4550	Mechatronics II	4
MET 2100	Statics For Technology	3
Hours		17

**Seventh Term**

EET 4150	Analog Systems Design	4
EET 4250	Database Applications for Industry	4
or EET 4300	or Motors and Generators	
or EET 4350	or Electric Power Systems	
EET 4350	Electric Power Systems	4
or EET 4250	or Database Applications for Industry	
or EET 4300	or Motors and Generators	
Arts/Humanities Core		3
Arts/Humanities Core/Non-US Diversity		3
Hours		18

**Eighth Term**

Elective - Professional Development		3
Social Sciences Core		3
EET 4450	Automatic Control Systems	4
ENGT 4050	Senior Technology Capstone	3
Hours		13
Total Hours		128

## BS in Information Technology

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CSET 1100	Introduction to Computer Science and Engineering Technology	4
MATH 1730	Calculus with Applications to Business and Finance	5
ECON 1150	Principles Of Macroeconomics	3
ENGT 1000	Engineering Technology Orientation	1
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
ENGT 3050	Fundamentals Of Electricity	4
ECON 1200	Principles Of Microeconomics	3
Natural Sciences Core and Natural Science Core Laboratory		4
ENGL 2950	Science And Technical Report Writing	3
Social Sciences Core		3
Hours		17
<b>Third Term</b>		
BUAD 2040	Financial Accounting Information	3
ENGT 2500	Technical Project Management	3

ITEC 2100	Small Computer Systems	4
Diversity of US		3
Arts/Humanities Core		3
Hours		16
<b>Fourth Term</b>		
BUAD 2050	Accounting For Business Decision-Making	3
Humanities/Multicultural Elective		3
CSET 1200	Object Oriented Programming and Data Structures	3
Communications Elective		3
CSET 2200	PC and Industrial Networks	4
Hours		16
<b>Fifth Term</b>		
ENGT 3010	Applied Statistics And Design Of Experiments	4
CSET 3200	Client/Server Computing	3
CSET 3100	Advanced Web Site Design	3
BUAD 3050	Information Technology Management	3
INFS 3770	Introduction To Database Systems	3
Hours		16
<b>Sixth Term</b>		
Technical/Professional Development Elective		3
Technical/Professional Development Elective		3
CSET 3300	Database-Driven Web Sites	4
CSET 3250	Client-Side Scripting	3
INFS 4300	Web Application Development II	3
Hours		16
<b>Seventh Term</b>		
Technical/Professional Development Elective		3
CSET 4100	SERVER-SIDE PROGRAMMING	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
CSET 4750	Computer Networks And Data Communication	4
CSET 4150	Web Server Administration	3
Hours		16
<b>Eighth Term</b>		
Technical/Professional Development Elective		3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
CSET 4250	Applied Programming Languages	3
ENGT 4050	Senior Technology Capstone	3
Natural Sciences Core		3
Hours		15
Total Hours		128

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGT 1000	Engineering Technology Orientation	1
MATH 1330	Trigonometry	3
MET 1020	Technical Drawing	3
MET 1050	Computers for Engineering Technology	3
MET 1110	Metal Machining And Processes	3
Arts/Humanities Core		3
Hours		16
<b>Second Term</b>		
ENGL 1110	College Composition I	3
ENGT 2000	Professional Development	1
PHYS 2010	Technical Physics I	5
MET 1120	Metal Machining & Processes Lab	1
MET 1250	Computer Aided Drafting and Design	3
Social Sciences Core		3
Hours		16
<b>Third Term</b>		
ENGL 2950	Science And Technical Report Writing	3
PHYS 2020	Technical Physics II	5
MATH 2450	Calculus For Engineering Technology I	4
MET 2100	Statics For Technology	3
MET 2150 or MET 2350	Numerical Control Applications or Advanced Computer Aided Drafting and Design	3
Hours		18
<b>Fourth Term</b>		
MET 2050	Fluid And Hydraulic Mechanics	4
MATH 2460	Calculus For Engineering Technology II	4
MET 2210	Technical Thermodynamics	4
MET 2120	Strength Of Materials For Technology	4
Hours		16
<b>Fifth Term</b>		
MET 3400	Applied Dynamics	3
COMM 2820	Group Communication	3
ENGT 3010	Applied Statistics And Design Of Experiments	4
ENGT 3020	Applied Engineering Mathematics	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
Hours		18
<b>Sixth Term</b>		
MET 3200	Mechanical Design I	3
MET 3100	Applied Thermodynamics	4
Technical Elective		3
MET 2310	Materials Science	3

## BS in Mechanical Engineering Technology

MET 2320	Materials Science Laboratory	1
	Hours	14
<b>Seventh Term</b>		
MET 4200	Mechanical Design II	3
Social Sciences Core		3
MET 4100	Applied Fluid Mechanics	4
ENGT 3050	Fundamentals Of Electricity	4
Diversity of US		3
	Hours	17
<b>Eighth Term</b>		
ENGT 4050	Senior Technology Capstone	3
EET 4450	Automatic Control Systems	4
Professional Development Elective		3
Arts/Humanities Core/Non-US Diversity		3
	Hours	13
	Total Hours	128

## Department of Mechanical, Industrial and Manufacturing Engineering

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### Our department's guiding mission statement:

Excellence in undergraduate and graduate education and research with regional and national impact.

### Our departmental vision:

To be a leading department in the State of Ohio with state and national ranking in the upper quartile, providing state-of-the-art education and research programs which prepare our graduates for leadership roles in a globally competitive environment.

## Degrees Offered

- BS in Mechanical Engineering (p. 280)
- Mechatronics Minor (p. 282)

### MIME 1000 Orientation To Me & Ie

[0-3 credit hours]

The mechanical engineering profession is discussed with emphasis on career opportunities. Orientation to the university campus, study skills and time management. Word processing, spreadsheets, e-mail, design projects, and MATLAB programming are studied.

**Term Offered:** Summer, Fall

### MIME 1010 Professional Development

[1 credit hour]

Social protocol and ethics in industry are reviewed. Resume writing and interview skills are developed. Course assists in preparing the student for the co-op experience in industry.

**Prerequisites:** MIME 1000 with a minimum grade of D-

**Term Offered:** Spring, Summer

### MIME 1100 Introduction To Cad

[0-2 credit hours]

Techniques for visualization and representation of machine components using solid modeling and projection. Section views, orthographic projection, dimensioning and tolerancing. CAD techniques for solving vector problems.

**Term Offered:** Summer, Fall

### MIME 1650 Materials Science & Engineering

[0-3 credit hours]

Engineering properties of materials, the effect of atomic bonding and crystalline structure on the mechanical properties of metals, ceramics and polymers. Common measurement, testing and comparison techniques to aid in selection of materials. Laboratory experiences include compressive and tensile strength testing, the effects of heat upon strength, hardness and micro-structure, the effects of combining certain materials in a composite to improve overall mechanical properties.

**Prerequisites:** CHEM 1230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

### MIME 2000 Measurements Laboratory

[0-2 credit hours]

How to write engineering laboratory reports. Statistical analysis of experimental data, uncertainty analysis, general characteristics of measurement systems, static and dynamic measurements, computer data acquisition, applications to thermal, mechanical and electrical systems.

**Prerequisites:** EECS 2340 with a minimum grade of D- and (ENGL 1930 with a minimum grade of D- or ENGL 2950 with a minimum grade of D-)

**Term Offered:** Spring, Fall

### MIME 2300 Engineering Dynamics

[3 credit hours]

Kinematics of particles and rigid bodies. Thorough study of kinetics of particles and rigid bodies using Newton's laws of motion, work-energy methods, and impulse and momentum methods.

**Prerequisites:** CIVE 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall



**MIME 2600 Engineering Economics**

[3 credit hours]

The study of micro-economic and macro-economic theories. Methods of economic analysis, including the time value of money, are described. Economic decision criteria are used to select best alternatives with emphasis in engineering. Impact of economic decisions on various sectors of society are discussed.

**Term Offered:** Spring, Fall**MIME 2650 Manufacturing Processes**

[0-3 credit hours]

Manufacturing processes discussed include metal casting and forming such as forging, rolling, extrusion, stamping and drawing. Metal cutting processes such as turning, boring, drilling, milling, sawing and broaching are discussed. Polymer processes including injection molding and extrusion as well as ceramic part production are covered. Laboratory experiences include creating parts using many of these processes.

**Prerequisites:** MIME 1650 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MIME 2700 Applied Measure & Instrument**

[4 credit hours]

A hands on introduction to engineering measurement methods and instrumentation, including electrical circuits, sensors, actuators, data acquisition, and system response.

**Prerequisites:** PHYS 2140 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MIME 2920 Special Projects**

[1-3 credit hours]

A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for students interested in mechanical, industrial or manufacturing engineering early in their undergraduate program. Instructor will specify scope of project to correspond to credit hours.

**Term Offered:** Spring, Summer, Fall**MIME 2980 Special Topics**

[1-3 credit hours]

A special topic at the undergraduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member. Credits will correspond to regular class meetings of one lecture hour per week per credit hour.

**Term Offered:** Fall**MIME 2990 Independent Study**

[1-3 credit hours]

An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for engineering students early or midway through their program of study. Instructor will specify scope of project to correspond to credit hours.

**MIME 3200 Introduction to Project Engineering**

[3 credit hours]

Topics include: engineering economics; societal, legal and ethical concerns; project scheduling; and designing for quality as well as matching client desires with product attributes.

**Term Offered:** Spring, Summer, Fall**MIME 3300 Design And Analysis Of Mechanical Systems**

[3 credit hours]

Design and analysis of mechanisms, gear trains, planetary gear trains, cam-and-follower devices with application to mechanical systems. Motion, force, torque and vibration analysis. Balancing of rotating and reciprocating components in machines.

**Prerequisites:** MIME 2300 (may be taken concurrently) with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MIME 3310 Mechanical Design I**

[3 credit hours]

Applications of mechanics of materials to analysis and design of mechanical components; introduction to fracture mechanics; applications of failure theories to design of machine elements subjected to static and cyclic loadings.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and MIME 1650 with a minimum grade of D-)**Corequisites:** MIME 3330**Term Offered:** Spring, Summer, Fall**MIME 3320 Mechanical Design II**

[3 credit hours]

Application of failure theories in static and fatigue loading to the design and analysis of mechanical elements including fasteners, power screws, welded joints, springs, bearings, gears, clutches, brakes and shafts.

**Prerequisites:** MIME 3310 with a minimum grade of C-**Term Offered:** Spring, Summer, Fall**MIME 3330 Mechanics Laboratory**

[0-1 credit hours]

This laboratory course consists of experiments in strength of materials and stress analysis. Experiments include stress analysis of straight and curved beams, analysis of torsion and combined stresses in shafts, stress concentrations, and determination of mechanical properties from tension tests and fatigue tests.

**Corequisites:** MIME 3310**Term Offered:** Spring, Summer, Fall**MIME 3360 Vibration Laboratory**

[0-1 credit hours]

This laboratory course will be taken concurrently with Mechanical Vibration and consists of experiments to determine the natural frequency of one degree of freedom systems, free and forced vibrations of lumped parameter systems, mode shapes and natural frequencies of multidegree of freedom systems, and mode shapes and natural frequencies of torsional vibration systems.

**Corequisites:** MIME 3370**Term Offered:** Spring, Summer, Fall**MIME 3370 Mechanical Vibration**

[3 credit hours]

Modeling mechanical systems, mechanical elements, equations of motion for single-DOF and multi-DOF systems, linearization of equations of motion, free and forced response, electrical systems, frequency response, feedback control systems.

**Prerequisites:** MIME 2300 with a minimum grade of D- and MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-**Corequisites:** MIME 3360**Term Offered:** Spring, Summer, Fall

**MIME 3380 Modeling and Control of Engineering Systems**

[3 credit hours]

Physical modeling and feedback principles are applied for control of mechanical systems. Transient response, root locus and frequency response principles are applied to the control of basic mechanical and electrical systems.

**Prerequisites:** MIME 3370 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 3400 Thermodynamics I**

[3 credit hours]

Introduction to thermal sciences with an emphasis on the first and second law of thermodynamics. Topics include conservation of energy for closed and open systems, thermodynamic properties and cycles and entropy production.

**Prerequisites:** (MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-) and PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 3410 Thermodynamics II**

[3 credit hours]

Review of open and closed systems in thermodynamics, the Carnot principle and cycle efficiency concepts. Application to gas and vapor power cycles and refrigeration cycles. Thermodynamic property relations, gaseous mixtures and combustion.

**Prerequisites:** MIME 3400 with a minimum grade of D-

**Corequisites:** MIME 3420

**Term Offered:** Spring, Summer, Fall

**MIME 3420 Fluids Laboratory**

[0-1 credit hours]

This laboratory course is to be taken with Fluid Mechanics and Thermodynamics II to illustrate the concepts in those courses. Experiments include fluid statics, forces on a submerged surface, center of pressure, manometers, surface tension, flow visualization, Bernoulli's equation, control volume analysis, viscous flow in pipes, flow over bodies, turbomachinery, and thermodynamic cycles.

**Corequisites:** MIME 3410, MIME 3430

**Term Offered:** Spring, Summer, Fall

**MIME 3430 Fluid Mechanics**

[3 credit hours]

Fluid mechanics for mechanical engineers. Topics include fluid statics and dynamics, equations of motion, dimensional analysis, boundary layer theory, flow in pipes, turbulence, fluid machinery, potential flow, CFD and aerodynamics.

**Prerequisites:** MIME 3400 with a minimum grade of D-

**Corequisites:** MIME 3420

**Term Offered:** Spring, Summer, Fall

**MIME 3440 Heat Transfer**

[3 credit hours]

A comprehensive study of conduction, convection and radiation. Derivation and solution of differential equations related to heat transfer. Analysis of forced and free convection and heat exchangers. Dimensional analysis related to heat transfer.

**Prerequisites:** MIME 3430 with a minimum grade of D-

**Corequisites:** MIME 3450

**Term Offered:** Spring, Summer, Fall

**MIME 3450 Energy Laboratory**

[0-1 credit hours]

This laboratory course is to be taken with Heat Transfer to illustrate the concepts in this course. Experiments include Fourier's Law, cooling of fins/rods, determination of free and forced convection heat transfer coefficients, heat exchangers, Stefan Boltzmann Law, surface emission, surface reflection.

**Corequisites:** MIME 3440

**Term Offered:** Spring, Summer, Fall

**MIME 3780 Engineering Management**

[3 credit hours]

The development of the fundamentals required in an engineering and manufacturing environment where technical competency is considered standard and an appreciation of the human behavioral responses to managerial policies and rules is essential. This course covers the basics of planning organizing, leading and control from the subordinates' as well as the manager's perspective.

**Term Offered:** Fall

**MIME 3940 Co-Op Experience**

[1 credit hour]

Students in the Industrial and Mechanical Engineering programs are to enroll in this course during each of their approved Co-Op experiences.

**Prerequisites:** MIME 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 3950 Co-op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** MIME 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 4000 Engineering Statistics I**

[3 credit hours]

This course introduces the student to the areas of probability theory and statistical inferences. Topics include sample spaces, the concepts of random variables, probability distributions; functions of random variables, transformation of variables, moment generating functions, sampling and estimation theory; T, F and chi-square distribution.

**Prerequisites:** MATH 2850 with a minimum grade of D- or MATH 2950 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 4040 Modern Manufacturing Methods**

[3 credit hours]

This course provides an overview of the philosophy, design and management of production factories throughout the world. This course explores the evolution and revolution of manufacturing since the 1960's and the numerous philosophical changes that have shaped the factory of today. The course examines the fundamental design of the factory in an effort to meet the demands of customers, culture of the organization, competitive situation, and pressures of marketing and management.

**Term Offered:** Fall

**MIME 4060 Manufacturing Engineering**

[3 credit hours]

Students apply machine tools and fabrication processes to optimize the manufacture of a product. Emphasis is on engineering design integrated with economic principles and fabricating methods.

**Prerequisites:** MIME 2650 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Summer, Fall

**MIME 4070 Computer-Aided Manufacturing**

[3 credit hours]

The study of machining processes using numerical control machine tools and controllers. Development of programs to machine parts on mills and lathes. Conversion of CAD models to programs through software interfaces.

**Prerequisites:** MIME 2650 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4080 Operations Research I**

[3 credit hours]

This course focuses on the mathematical methods of Operations Research and their applications in engineering. Topics include the optimal solution of deterministic and stochastic mathematical models, modeling process, linear programming, the simplex method, duality theory and sensitivity analysis.

**Prerequisites:** MIME 4000 with a minimum grade of D- and MATH 2860 with a minimum grade of D-

**MIME 4100 Manufactur Systems Simulation**

[3 credit hours]

Discrete and continuous simulation models are used to study queuing, networks, manufacturing and related engineering systems. Simulation languages and animation are covered. Statistical inference is used to draw conclusions and to identify the best system.

**Prerequisites:** MIME 2650 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Spring

**MIME 4180 Legal Aspects of Engineering**

[3 credit hours]

This course offers an introduction to legal topics for engineers. Topics include: contracts, negligence, products liability, patents and copyright, employment law, criminal law, environmental law, and business law.

**Term Offered:** Spring

**MIME 4200 Senior Design Projects**

[3 credit hours]

Students work in teams using knowledge gained in earlier courses to solve real design, manufacturing and operational problems relevant to industry. Oral and written communications with participating companies as well as teamwork are stressed. Other topics include patents, product liability, safety, ethics and design for manufacturing.

**Prerequisites:** (MIME 3200 with a minimum grade of D- and MIME 3320 (may be taken concurrently) with a minimum grade of D- and MIME 3440 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Spring, Fall

**MIME 4230 Dynamics Of Human Movement**

[3 credit hours]

The goal of this course is for students to be able to describe motions of the human body. Three-dimensional analysis and measurements of human body movements including kinematics, kinetics and energetics of human gait, anthropometry and application to bioengineering and orthopedics will be presented. Euler angles and the screw axis method will be used to describe three-dimensional motions.

**Prerequisites:** MIME 2300 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4240 Experimental Methods in Orthopedic Biomechanics**

[3 credit hours]

Experimental techniques used in orthopedics and in the study of the musculoskeletal system including mechanical testing, experimental and analytical methods for stress analysis, strain gauges, methods used in human motion analysis to include motion capture, force plates and EMG.

**Prerequisites:** MIME 1650 with a minimum grade of D- and CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4280 Cad-Finite Element Methods**

[3 credit hours]

An introduction to the basic concepts of the finite element method. Topics include engineering analysis of continuous systems, numerical solutions of boundary value problems, method of weighted residuals and the principle of minimum potential energy, applications of commercially available finite element programs.

**Prerequisites:** MIME 3320 with a minimum grade of D-

**Term Offered:** Summer, Fall

**MIME 4300 Advanced Mechanics Of Materials**

[3 credit hours]

Theory of elasticity, plane stress and plane problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetric bending, torsion, shear center and axisymmetrically loaded members.

**Prerequisites:** CIVE 1160 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4310 Mechanics Of Composite Materials**

[3 credit hours]

Review of elasticity of anisotropic solids, determination of mechanical properties of fiber-reinforced lamina, analysis and performance of laminated composites.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and MIME 1650 with a minimum grade of D-)

**Term Offered:** Spring

**MIME 4320 Fatigue Of Materials & Structures**

[3 credit hours]

Fatigue design methods; fatigue fracture mechanisms; cyclic deformation behavior and material cyclic properties; stress-based, and fracture mechanics-based methodologies to fatigue life prediction of smooth and notched members subjected to constant or variable amplitude loadings.

**Prerequisites:** CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring

**MIME 4410 Alternative Energy**

[3 credit hours]

This course focuses on the technical aspects of sustainable energy technologies, such as wind, solar, biomass, ocean waves/tides, geothermal, and hydropower; it also covers issues and applications related to storage, transportation, distribution, industrial usage, and buildings. The course investigates the progress, challenges, and opportunities of each technology to be both technically feasible and economically viable.

**MIME 4430 Automotive Control Systems**

[3 credit hours]

This course covers the major aspects of automotive control, including engine, driveline, and complete vehicle control. This includes applications such as fuel and ignition control, ABS systems, gear-shifting, and vehicle velocity estimation.

**Prerequisites:** MIME 3380 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4440 Mechatronics**

[3 credit hours]

This course will give students hands-on experience with mechatronic systems and components. The laboratory will be used to demonstrate several mechatronics systems including inverted pendulums, suites of sensors and motors, and other more complex systems. A major part of the course will be a semester-long project where the students conceive, design, and build a mechatronic device.

**Prerequisites:** MIME 3380 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4450 Automation Design**

[3 credit hours]

This course will introduce the range of common components used in automation, including actuators, sensors, motors, linear guides, energy chain, industrial robots and light curtains. Students will practice (with feedback) walking through the design process in specifying, sizing, laying out and integrating these components.

**Prerequisites:** MIME 1100 with a minimum grade of D- and MIME 2300 with a minimum grade of D- and CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4460 MATLAB for Engineers**

[3 credit hours]

This course will review the basics of using MATLAB, identify best-practices applicable to MATLAB and other programming languages, and provide examples of more-advanced functionality such as image processing, Simulink control of mechatronic systems, numerically solving differential equations, GPU computation, and optimization. Programming experience would be helpful, but this would also be a good opportunity to rapidly grow programming skills with an easy-to-learn language.

**Prerequisites:** MATH 2860 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4510 Turbomachinery**

[3 credit hours]

Theory of energy transfer between fluid and rotor in turbomachines. Design of turbomachine components. Applications to pumps, compressors and turbines.

**Prerequisites:** (MIME 3410 with a minimum grade of D- and MIME 3430 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**MIME 4520 Heating, Ventilating And Air Conditioning**

[3 credit hours]

Control of the thermal environment within enclosed spaces including psychometric properties of air heating and cooling, loads and factors affecting human comfort. Analysis of basic heating and refrigeration systems, heat pumps, heaters, utilization of solar energy, humidifiers, energy conservation and controls for systems.

**Prerequisites:** MIME 3410 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4530 Internal Combustion Engines**

[3 credit hours]

Study of Carnot, Otto, Diesel and Brayton Cycles, performance characteristics, combustion engines and construction details of internal combustion engines. Analysis of problems associated with carburetion, fuel injection, combustion, cooling, supercharging, emissions and emission control.

**Prerequisites:** MIME 3410 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4540 Jet Propulsion**

[3 credit hours]

Mechanics and thermodynamics of jet propulsion. Fundamentals of high-speed flow. Analysis of gas turbine engine components: diffuser, compressor, turbine and nozzle. Investigation of characteristics of ramjets, turbojets, turbofans and turboprops. Introduction to solid and liquid rockets.

**Prerequisites:** MIME 3410 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4550 Aerodynamics**

[3 credit hours]

Fundamentals of aerodynamics, potential flow theory, aerodynamic forces and moments, introduction to numerical analysis, application to internal flows, theory of lift for infinite and finite wings, induced drag.

**Prerequisites:** MIME 3430 with a minimum grade of D-

**Term Offered:** Spring

**MIME 4560 Gas Dynamics**

[3 credit hours]

Analysis of compressible flow phenomena including shock and detonation waves. Internal flow with friction and heat addition. Analysis and application to supersonic airfoil theory, inlet nacelles, nozzles to generate supersonic thrust and jet engine combustors.

**Prerequisites:** MIME 3430 with a minimum grade of D-

**Term Offered:** Spring

**MIME 4690 Reliability**

[3 credit hours]

Reliability of components and multicomponent systems. Static and dynamic reliability models for both independent and dependent failures. Effects of hot and cold redundancy. Reliability testing consideration and renewal theory.

**Prerequisites:** MIME 4010 with a minimum grade of D-

**Term Offered:** Spring

**MIME 4820 Sustainability Analysis and Design**

[3 credit hours]

The course is intended to introduce students to sustainability analysis and design in manufacturing and service settings as related to mechanical and industrial engineering. It will cover solid waste minimization for manufacturers, life cycle analysis, and environmentally conscious design.

**MIME 4920 Special Projects**

[1-3 credit hours]

A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for students interested in mechanical, industrial or manufacturing engineering nearing completion of their undergraduate degree. Instructor will specify scope of project to correspond to credit hours.

**Term Offered:** Spring, Summer, Fall**MIME 4980 Special Topics**

[1-3 credit hours]

A special topic at the undergraduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member. This is intended for students nearing graduation. Credits will correspond to regular class meeting of one lecture hour per week per credit hour.

**Term Offered:** Spring, Summer, Fall**MIME 4990 Independent Study**

[1-3 credit hours]

An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for engineering students nearing graduation. Instructor will specify scope of study to correspond to credit hours.

**Term Offered:** Fall

## BS in Mechanical Engineering

Below is a sample plan of study for a BS in Mechanical Engineering with no concentration (general). Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
MATH 1850	Single Variable Calculus I	4
ENGL 1110	College Composition I	3
CHEM 1230	General Chemistry I	4
MIME 1000	Orientation To Me & Ie	3
MIME 1100	Introduction To Cad	2
Hours		16
<b>Second Term</b>		
MATH 1860	Single Variable Calculus II	4
PHYS 2130	Physics For Science And Engineering Majors I	5
MIME 1010	Professional Development	1
Select one of the following:		3
ECON 1010	Introduction To Economic Issues	
ECON 1150	Principles Of Macroeconomics	
ECON 1200	Principles Of Microeconomics	

ENGL 2950	Science And Technical Report Writing	3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
PHYS 2140	Physics For Science And Engineering Majors II	5
MIME 1650	Materials Science & Engineering	3
CIVE 1150	Engineering Mechanics: Statics	3
Arts/Humanities Core		3
Hours		18
<b>Fourth Term</b>		
MATH 2860	Elementary Differential Equations	3
MIME 2650	Manufacturing Processes	3
MIME 4000	Engineering Statistics I	3
CIVE 1160	Engineering Mechanics: Strength Of Materials	3
EECS 2340	Electric Circuits For Nonmajors	3
Hours		15
<b>Fifth Term</b>		
MIME 3940	Co-Op Experience	1
Hours		1
<b>Sixth Term</b>		
MIME 2000	Measurements Laboratory	2
MIME 2300	Engineering Dynamics	3
MIME 3300	Design And Analysis Of Mechanical Systems	3
MIME 3310	Mechanical Design I	3
MIME 3330	Mechanics Laboratory	1
MIME 3400	Thermodynamics I	3
Hours		15
<b>Seventh Term</b>		
MIME 3940	Co-Op Experience	1
Hours		1
<b>Eighth Term</b>		
MIME 3320	Mechanical Design II	3
MIME 3360	Vibration Laboratory	1
MIME 3370	Mechanical Vibration	3
MIME 3410	Thermodynamics II	3
MIME 3420	Fluids Laboratory	1
MIME 3430	Fluid Mechanics	3
Diversity of US		3
Hours		17
<b>Ninth Term</b>		
MIME 3940	Co-Op Experience	1
Hours		1
<b>Tenth Term</b>		
MIME 3200	Introduction to Project Engineering	3
MIME 3380	Modeling and Control of Engineering Systems	3
MIME 3440	Heat Transfer	3



MIME 3450	Energy Laboratory	1
Technical Elective		3
Technical Elective		3
Hours		16
<b>Eleventh Term</b>		
MIME 4200	Senior Design Projects	3
Technical Elective		3
Technical Elective		3
Arts/Humanities Core/Non-US Diversity		3
Social Sciences Core		3
Hours		15
Total Hours		131

## BS in Mechanical Engineering with a Mechatronics Concentration

Below is a sample plan of study with a concentration in Mechatronics. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
MATH 1850	Single Variable Calculus I	4
ENGL 1110	College Composition I	3
CHEM 1230	General Chemistry I	4
MIME 1000	Orientation To Me & Ie	3
MIME 1100	Introduction To Cad	2
Hours		16
<b>Second Term</b>		
MATH 1860	Single Variable Calculus II	4
PHYS 2130	Physics For Science And Engineering Majors I	5
MIME 1010	Professional Development	1
Select one of the following:		3
ECON 1010	Introduction To Economic Issues	
ECON 1150	Principles Of Macroeconomics	
ECON 1200	Principles Of Microeconomics	
ENGL 2950	Science And Technical Report Writing	3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
PHYS 2140	Physics For Science And Engineering Majors II	5
MIME 1650	Materials Science & Engineering	3
CIVE 1150	Engineering Mechanics: Statics	3
Arts/Humanities Core		3
Hours		18
<b>Fourth Term</b>		
MATH 2860	Elementary Differential Equations	3
MIME 2650	Manufacturing Processes	3
MIME 4000	Engineering Statistics I	3

CIVE 1160	Engineering Mechanics: Strength Of Materials	3
EECS 2340	Electric Circuits For Nonmajors	3
Hours		15
<b>Fifth Term</b>		
MIME 3940	Co-Op Experience	1
Hours		1
<b>Sixth Term</b>		
MIME 2000	Measurements Laboratory	2
MIME 2300	Engineering Dynamics	3
MIME 3300	Design And Analysis Of Mechanical Systems	3
MIME 3310	Mechanical Design I	3
MIME 3330	Mechanics Laboratory	1
MIME 3400	Thermodynamics I	3
Hours		15
<b>Seventh Term</b>		
MIME 3940	Co-Op Experience	1
Hours		1
<b>Eighth Term</b>		
MIME 3320	Mechanical Design II	3
MIME 3360	Vibration Laboratory	1
MIME 3370	Mechanical Vibration	3
MIME 3410	Thermodynamics II	3
MIME 3420	Fluids Laboratory	1
MIME 3430	Fluid Mechanics	3
Diversity of US		3
Hours		17
<b>Ninth Term</b>		
MIME 3940	Co-Op Experience	1
Hours		1
<b>Tenth Term</b>		
MIME 3200	Introduction to Project Engineering	3
MIME 3380	Modeling and Control of Engineering Systems	3
MIME 3440	Heat Transfer	3
MIME 3450	Energy Laboratory	1
MIME 4460	MATLAB for Engineers	3
Technical Elective		3
Hours		16
<b>Eleventh Term</b>		
MIME 4200	Senior Design Projects	3
MIME 4430	Automotive Control Systems	3
or MIME 4450	or Automation Design	
MIME 4440	Mechatronics	3
Arts/Humanities Core/Non-US Diversity		3
Social Sciences Core		3
Hours		15
Total Hours		131

## Mechatronics Minor

Code	Title	Hours
MIME 3300	Design And Analysis Of Mechanical Systems	3
MIME 3380	Modeling and Control of Engineering Systems	3
MIME 4460	MATLAB for Engineers	3
MIME 4430	Automotive Control Systems	3
MIME 4440	Mechatronics	3
Total Hours		15

## Special Programs for Undergraduates

We offer an number of special programs to allow our students to extend their education beyond their Bachelor of Science in Engineering or Bachelor of Science in Engineering Technology degree programs:

- Early Admission to Master of Science in Engineering (p. 282)
- Joint B.S. in Engineering or Engineering Technology/M.B.A. Program (p. 282)
- Minor in Business Administration (p. 283)
- Presumptive Admission Program to the University of Toledo College of Law (p. 283)

## Early Admission to Master of Science in Engineering

The College of Engineering offers students currently enrolled in a Bachelor of Science in Engineering degree program at The University of Toledo an opportunity to begin work toward a Master of Science in Engineering degree. This option offers talented students who intend to continue their education beyond the B.S. a unique opportunity to begin their graduate research activities at an earlier stage in their career and proceed into the graduate programs in a timely manner.

Up to nine semester credit hours of graduate-level technical elective or required courses may be applied toward the B.S. degree in lieu of selected undergraduate elective courses, subject to specific departmental restrictions. Only 5000-level or higher engineering courses taken at The University of Toledo may be applied toward this option. In addition, an approved M.S. plan of study must be filed indicating those courses that will be accepted in lieu of specific B.S. course requirements. Application and admission requirements are described in the graduate section of the catalog.

Normally, the Bachelor of Science in Engineering degree programs (with co-op) require five years and the Master of Science in Engineering degree programs require an additional two years. It is anticipated that by participating in this option, a total of six years will be required for the completion of both degrees.

## Joint B.S. in Engineering or Engineering Technology/M.B.A. Program

The College of Business and Innovation, in conjunction with the College of Engineering, offers a program whereby a student may earn a Bachelor of Science in Engineering or Engineering Technology and a Master of Business Administration (M.B.A.). This program provides a unique opportunity to combine business and engineering skills to prepare graduates for global competitiveness and supports the mission to prepare corporate leaders for the future. The program should be particularly attractive to students who want to start their own company or who simply want to develop an appreciation for how engineering and business complement each other.

This program will allow engineering students in their final two semesters of study to begin taking M.B.A. courses while completing their B.S. degree program. Students with senior standing may be formally admitted into the M.B.A. program and can complete the M.B.A. at the end of six years of study. The business undergraduate prerequisites can be satisfied as part of the undergraduate curriculum.

To be admitted to the program, students must have senior standing, score a minimum of 450 on the Graduate Management Admissions Test (GMAT) and have at least a 3.0 cumulative GPA. Students also must have completed the requirements for the business minor. The business minor courses should be chosen carefully however, as not all business minor courses can be used towards the M.B.A. The six business courses listed in the business minor section plus MIME 2600 or ECON 1150 and ECON 1200 satisfy the basic core prerequisite requirement for the M.B.A. program for engineering students.

Students who wish to pursue the program should inform the associate dean of undergraduate studies in the College of Engineering during their junior year and complete the GMAT by the end of their junior year. Students should submit completed application materials to the Graduate School for admission to the M.B.A. program before the fall semester of their senior year.

Upon admission to the program by the Graduate School and the College of Business and Innovation, students will be classified as special provisional graduate students so that they may take graduate courses while completing the Bachelor of Science degree requirements. Students' special status must be tracked by the M.B.A. office to assure AACSB compliance. Also, the Bachelor of Science in Engineering or Engineering Technology must be granted in a semester prior to graduating with the M.B.A.

To satisfy the requirements for the M.B.A., students must complete all of the core and elective required courses in the M.B.A. program. By choosing the correct courses, this may be accomplished with six undergraduate and eleven graduate-level business courses.

Normally, the Bachelor of Science in Engineering degree programs (with co-op) require five years, and the M.B.A. would require an additional two years. It is anticipated that by enrolling in the two programs simultaneously, a total of six years will be required for completion of both degrees. Similarly, for Engineering Technology students, the degree

program normally requires four years, and the M.B.A. program would require an additional two years. It is anticipated that by enrolling in the two programs simultaneously, a total of five and one half years will be required for completion of both degrees.

## Minor in Business Administration

Engineering students may earn a General Minor in Business for Non-Business Students. This link provides additional information:

GENERAL MINOR FOR NON-BUSINESS STUDENTS (p. 237)

Students interested in a business minor should consult advisors in the College of Business and Innovation and the College of Engineering.

## Presumptive Admission Program to the University of Toledo College of Law

Through the UT Advantage program, students who graduate with a Bachelor of Science degree from the College of Engineering, have a minimum GPA of 3.4, have an LSAT score at or above the 50th percentile for the previous year's entering class at Toledo Law, and have not committed an act or acts reflecting unsatisfactory character and fitness (e.g., a felony, an academic suspension) will be presumptively admitted to The University of Toledo College of Law upon submission of a completed application.

## Faculty

### DEPARTMENT OF BIOENGINEERING

**Halim Ayan**, 2012, Associate Professor, B.S., Ege University; Ph.D., Drexel University

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**Aisling Coughlan**, 2016, Assistant Professor, B.S., M.S., Ph.D., University of Limerick

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**Sridhar Viamajala**, 2009, Professor, B.Tech.Ch.E., Indian Institute of Technology - Kharagpur; Ph.D., Washington State University

## Department of Civil Engineering and Environmental Engineering

**Defne Apul**, 2004, Professor, B.S., Ch.E., Bogazici University; M.S. Env.E., Michigan Technological University; Ph.D., University of New Hampshire; P.E. (Ohio)

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**Ashok Kumar**, 1980, Professor and Chair, B.S.E., Aligarh University; M.S., University of Ottawa; Ph.D., University of Waterloo; PE (Alberta)

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#### Department of Electrical Engineering and Computer Science

**Mansoor Alam**, 1989, Professor and Chair, B.S.E.E., Aligarh Muslim University; M.S., Ph.D., Indian Institute of Science

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**Weng Kang**, 2000, Associate Professor, M.S., Physics, Ohio University; M.S., Ph.D., Electrical Engineering, University of Tennessee

**Devinder Kaur**, 1989, Professor, M.S. (Physics), Panjab University; M.S. (Medical Physics), University of Aberdeen; M.S., Ph.D., Wayne State University

**Raghav Khanna**, 2015, Assistant Professor, B.S., M.S., Ph.D. (Electrical Engineering), University of Pittsburgh

**Junghwan Kim**, 1988, Professor, B.S., Seoul National University; M.S., Ph.D., Virginia Polytechnic Institute & State University; PE (Ohio)

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**Ezzatollah Salari**, 1985, Professor, B.S.E.E., Iran College of Science & Technology; M.S., Ph.D., Wayne State University

**Gursel Serpen**, 1993, Professor and Interim Chair, B.S.E.E., Air Force Academy - Turkey; M.S.E.E., Air Force Institute of Technology; Ph.D., Old Dominion University

**Lawrence Thomas**, 2010, Assistant Professor, B.A., Computer Science, University of Tennessee; M.S., Ph.D., Computer Science, Vanderbilt University

**Kevin Xu**, 2015, Assistant Professor, BASc., (EE), University of Waterloo; M.S.E (EE) and Ph.D. (EE: Systems), University of Michigan

## Department of Engineering Technology

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**Nicoleta Ene**, 2016, Assistant Lecturer, B.S., M.S., Ph.D., Polytechnic University of Bucharest, Ph.D., The University of Toledo

**Matthew Franchetti**, 2008, Professor and Associate Dean for Undergraduate Studies, B.S., M.S., Ph.D., Industrial Engineering, The University of Toledo; M.B.A., The University of Toledo, PE (Ohio)

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**Hossein Sojoudi**, 2016, Assistant Professor, B.S.M.E. and M.S.M.E., Sharif University of Technology; Ph.D., Georgia Institute of Technology

**Brian Trease**, 2015, Assistant Professor, B.S., University of Toledo, M.S., Ph.D., University of Michigan

**Hongyan Zhang**, 2000, Professor, B.S., Jilin University; M.S., Institute of Metal Research, Chinese Academy of Sciences; Ph.D., The Ohio State University



# COLLEGE OF HEALTH AND HUMAN SERVICES

## Undergraduate Catalog

Health and Human Services Building Room 3302  
419.530.5453  
CHHSDean@utoledo.edu

### Mission:

The University of Toledo's College of Health and Human Services, an innovative college housed within a national public research university, prepares engaged professionals who improve the human condition in the region and the world.

### Vision:

The College of Health and Human Services will deliver nationally recognized academic programs committed to discovery, teaching, professional practice and service that directly improve human lives.

## College Statement of Diversity and Inclusion:

In concert with the University of Toledo's values and expectations, the faculty and staff within the College of Health and Human Services uphold the tenets pledged by the University to respect and value personal uniqueness and differences. Specifically, we will actively participate in the initiatives of the University to attract and retain diverse students, faculty, and staff; to challenge stereotypes; and to promote sensitivity toward diversity and foster an environment of inclusion in all curricular and extra-curricular activities.

## Contacts

### Administration

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## Academic Departments

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### School of Intervention & Wellness

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### School of Population Health

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### School of Social Justice

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## Student Services

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## Degrees/Programs Offered

### School of Exercise & Rehabilitation Sciences (p. 289)

- BS in Exercise Science (p. 299)
- BS in Recreation Therapy (p. 303)
- BS in Registered Respiratory Therapy (p. 305) (RRT to BSRT)
- BS in Respiratory Care (p. 306)
- Minor in Exercise Science (p. 307)

### School of Intervention & Wellness

- BS in Speech Language Pathology (p. 311)
- Certificate in Chemical Dependency Counseling (p. 313)
- Minor in Counseling (p. 313)

### School of Population Health (p. 313)

- BS in Health Care Administration (p. 318)
- BS in Health Care Administration Completion (p. 319)
- BS in Health Information Administration (p. 319)
- BS in Public Health (p. 320)
- Minor in Public Health (p. 322)

### School of Social Justice

- Associate of Applied Science in Paralegal Studies (p. 329)
- BS in Criminal Justice (p. 330)
- BS in Paralegal Studies (p. 331)
- BSW in Social Work (p. 332)
- Certificate in Nurse Paralegal (p. 333)
- Certificate in Paralegal Studies (p. 335) (post baccalaureate)
- Minor in Criminal Justice (p. 334)
- Minor in Data Science (p. 334)
- Minor in Forensic Science Investigation (p. 334)
- Minor in Legal Specialties (p. 334)

## Admission Policies

### Requirements for Direct-From-High-School Students

#### For all programs not listed below:

- 2.7 GPA or 21 ACT/990 SAT (taken prior to March 2016) or 1070 SAT (taken after March 2016)

#### Criminal Justice, Nurse Paralegal Certificate, Paralegal Studies, Social Work, and Undecided

- 2.5 GPA or 19 ACT/910 SAT (taken prior to March 2016) or 990 SAT (taken after March 2016)

Students not qualifying for admission to the College of Health and Human Services will be admitted through the Department of Exploratory Studies in University College.

## Selective/Limited Admission

The following programs require an additional application for admission to their professional programs:

- Public health
- Recreational therapy
- Respiratory care
- Social work

## Requirements for Students with an Associate's Degree

Students holding associate's degrees from accredited colleges are encouraged to enroll in the College. Students may earn a bachelor's degree upon completion of two or more additional years of full-time study; see the advisor in the major to determine a plan of study. The following regulations apply:

1. Students must complete the equivalent of the specified University core.
2. In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 to 4000 levels; of these a minimum of 32 hours must be taken at the 3000 and 4000 levels. Coursework from other institutions is accepted at the level at which the course was taught at that institution.

## Admission with Transfer Credit/Change of College

Students with satisfactory academic records wishing to transfer into the College of Health and Human Services must meet the minimum entrance requirements of The University of Toledo. After submission of official transcripts from all colleges/universities attended and acceptance by the College, transfer courses are evaluated. The evaluation process should be completed before the first term of attendance to avoid duplication of credit.

Students in good standing who wish to change from another college within The University of Toledo to the College of Health and Human Services should make an appointment with a college advisor in the Office of Student Services to discuss the transfer and have academic records reviewed. All program requirements, including University core, must be fulfilled as specified in the catalog for the year in which the student enters the College. All undergraduate hours attempted and earned at The University of Toledo, as well as the GPA, will transfer.

Health Science Majors: minimum 12 hours of earned college-level credit and 2.7 cumulative GPA to transfer

Criminal Justice, Paralegal Studies, and Social Work majors: 2.2 cumulative GPA if 12-29 hours of earned college-level credit; 2.4 cumulative GPA if 30-59 hours; and 2.5 cumulative GPA if 60+ hours

## Readmission of Former Students

Undergraduate students who discontinue course work for a period of at least one academic year (not including summer) must request readmission to the University. If students have taken any course work at another institution during the time they have been away from the

University (other than transient status), they must complete a new application in the Office of Undergraduate Admission and meet transfer admission requirements.

Students who have not taken course work for more than 12 months must comply with the college requirements at the time of readmission.

## Honors Program

The Honors Program in the College of Health and Human Services provides opportunities for challenging and individualized study for undergraduate students of unusually high ability, motivation and initiative. For admission requirements, see Admission to the Honors College in the General Section of this catalog.

## Academic Policies

Refer to The University of Toledo Policy website (<http://www.utoledo.edu/policies/>) for academic policies that apply to all students.

The College of Health and Human Services adheres to all UToledo policies and procedures. Please refer to the General Section (<http://utoledo-public.courseleaf.com/general-section>) of this catalog for academic policies governing all students enrolled at the University. In any case where University, college, departmental and/or program policies conflict, the most stringent policy applies. Students should consult with their program for a complete list of all policies and procedures specifically related to their program.

## Academic Grievance

Students have the responsibility and right to call to the attention of a professor any course grade believed to be in error. The college grievance procedure must be initiated within 60 days of the posting of the final grade. Academic grievances must follow the procedure described below:

- The student meets with the professor to attempt to resolve the problem.
- If meeting with the professor does not resolve the problem, the student must discuss the problem with the department chair of the faculty member who issued the grade. The chair attempts to resolve the problem, but may not unilaterally change the grade.
- If meeting with the chair does not resolve the issue, the student will forward the appeal to the associate dean for academic affairs of the College of Health and Human Services.
- The college's Petition for Academic Grievance should be used for this purpose. The student must state the reasons for the appeal and the desired outcome. The student must meet with the associate dean to review and discuss the problem. The associate dean will attempt to resolve the problem by meeting with the appropriate faculty member, but may not unilaterally change the grade.
- If the student wishes to continue the appeal, he/she must forward the appropriate information relative to the problem to the Student Grievance Council. Information on this process may be found in UToledo Student Handbook. Note: If the grievance occurs during the fall or summer semester, a grievance petition must be filed with the chair of the Student Grievance Council no later than the last day of classes in the next semester. If the grievance occurs during the spring semester, the grievance petition must be filed with the chair of

the Student Grievance Council no later than the last day of classes in the final summer session.

## Academic Honesty

Refer to the UToledo Policy web (<http://www.utoledo.edu/policies>) site for further information on Academic Honesty.

## Academic Probation & Suspension

Students with a cumulative GPA of less than 2.0 are automatically placed on probation until a cumulative GPA of 2.0 is achieved. While on probation, it is recommended that students not enroll for more than 15 credit hours. Students on probation must see an academic advisor.

Academic suspension means the student is prohibited from registering at UToledo for a period of at least one semester. A student is subject to academic suspension if that person falls below the minimum GPA listed in the Academic Standing policy or fails to make sufficient progress toward attainment of the degree by accumulating excess W grades. Students may remove Incompletes while under suspension. Refer to the UToledo Policy web (<http://www.utoledo.edu/policies>) site for additional information on academic suspension.

## Dismissal

Dismissed students are not eligible for readmission to the College of Health and Human Services. A student may be dismissed for:

- Failing to meet the conditions of readmission after suspension from the College of Health and Human Services.
- Demonstrating patterns of behavior that are inappropriate for students preparing for professional roles or for failing to meet the morals standard as defined by the State of Ohio.

Regulations for probation, suspension and dismissal apply to both full-time and part-time students. In all matters, the decision of the Dean is final.

## GPA Recalculation for Repeated Courses

Student who have retaken a course and earned a higher grade may petition to have the first grade excluded from grade point average. Credit will only be awarded once for repeated courses. If a grade has been deleted that grade will not be used in determining the UToledo grade point average. However, all grades, including those for repeated courses, will be included in the determination of eligibility for graduation honors, fellowships, or other distinctions awarded on the basis of GPA. No more than a total of 12 semester hours of course work will be deleted. Students who have had their GPAs recomputed under the Academic Forgiveness Policy are not eligible for grade deletions. Specific programs within the college may have more rigorous requirements for grade deletions of major or related courses.

## Student Responsibilities

Students are responsible to complete the following:

- All first-year students must see an advisor each semester; all College of Health and Human Services students are strongly encouraged to see an academic advisor at least once a year.

- Readmit students are responsible for degree requirements in effect at the time of readmission.
- Students are responsible for fulfilling all degree requirements.
- Students are encouraged to meet with their academic advisors as needed for assistance.
- Students must contact the Office of Student Services to schedule an advising appointment.

## Withdrawal Policy (W Grades)

The number of credit hours of W is limited to 22 hours for all undergraduate students in degree programs in the College of Health and Human Services. Once a student has accumulated 22 hours of W, further withdrawals will be counted as F's in computation of the student's GPA for the purposes of probation or suspension. In addition, students risk the loss of financial aid if they accumulate excessive hours of W.

## Student Services

The Office of Student Services coordinates academic advising for the College of Health and Human Services. The office's mission is to provide quality, timely and comprehensive student services that will enhance student success in achieving academic goals. Although the ultimate responsibility for making personal and educational decisions rests with the individual, every student can benefit from working with the college's advisors, who provide assistance in identifying educational options and enhancing student potential.

Students in the College of Health and Human Services are assigned academic advisors by major. Essential services provided by advisors include monitoring degree requirements, selective admissions within the college, and interpretations of college and University policies and procedures. Advisors are located within the Health and Human Services building.

For more information, please go to <http://www.utoledo.edu/hhs/student-services/>

Heather Tessler, Director of Student Services  
Health and Human Services Building Room 3100N  
Phone: 419.530.5366  
[heather.tessler@utoledo.edu](mailto:heather.tessler@utoledo.edu)  
[CHHSAadvising@utoledo.edu](mailto:CHHSAadvising@utoledo.edu)

## Degree Requirements

Students in baccalaureate programs must complete a 120-126 hours of course work and have the proper number of credit hours as outlined in their program of study. In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 level or above; of these, a minimum of 32 hours must be taken at the 3000 and 4000 levels.

## College Requirements

The College of Health and Human Services is committed to the health and well-being of our students and the public. Consequently, all College of Health and Human Services students majoring in programs that require contact with patients or clients must provide verification of appropriate immunizations and exemplify ethical practice during their academic

careers at The University of Toledo. The requirements for each major are specified under the respective programs.

## University Core Curriculum

Students earning bachelor's or associate's degrees in all University colleges and programs are required to complete the University Core Curriculum. Those courses are distributed in the areas of English composition, mathematics, humanities/fine arts, social sciences, natural sciences and multicultural studies (see the General Section (<http://utoledo-public.courseleaf.com/general-section>) of this catalog for details). Some colleges and programs require courses in these areas over and above those required to fulfill University core requirements. The student's academic department or college office should be contacted for specific details.

## Residence Requirement

Students transferring from other institutions must earn at least 32 credit hours in the College of Health and Human Services at The University of Toledo to be eligible for graduation.

Full-time students transferring into the College of Health and Human Services must complete at least the final semester and 25 percent of their program of study in residence within the college. Part-time students must complete the last 12 credit hours and 25 percent of the program of study within the college.

## School of Exercise & Rehabilitation Sciences

Ruthie Kucharewski, Chair, Recreation Therapy Program Director  
Thomas McLoughlin, Exercise Science Program Director  
Jerome Sullivan, Respiratory Care Program Director

The School of Exercise and Rehabilitation Sciences offers undergraduate degree programs in exercise science, recreation therapy, and respiratory care. A minor in exercise science is available.

## Accreditation

- The BS in Recreation Therapy degree program is accredited by Council on Accreditation of Parks, Recreation, Tourism and Related Professions (COAPRT).
- The BS in Respiratory Care degree program is accredited by the Commission on Accreditation for Respiratory Care (CoARC).

## Degrees Offered

- BS in Exercise Science (p. 299)
- BS in Recreation Therapy (p. 303)
- BS in Registered Respiratory Therapy (p. 305)
- BS in Respiratory Care (p. 306)
- Minor in Exercise Science (p. 307)

**EXSC 1060 Understanding Human Body Structure and Function**

[3 credit hours]

This introductory course in human anatomy and physiology emphasizes critical thinking, functional concepts and interactive exercises.

This course does not meet the Natural and Physical Science Core Requirements for the University.

**Term Offered:** Fall

**EXSC 1460 Fundamentals of Anatomy and Physiology Lab**

[1 credit hour]

Laboratory sessions designed to provide the fundamentals of anatomy and physiology of the cell, tissues, and major organ systems of the human body using a systemic approach. Topics include scientific method, anatomical terminology, the cell, the four tissues

**Corequisites:** EXSC 1560

**Term Offered:** Spring, Fall

Core Natural Sciences

**EXSC 1560 Fundamentals of Anatomy and Physiology**

[3 credit hours]

This course describes the fundamentals of anatomy and physiology of the cell, tissues, and major organ systems of the human body using a systemic approach. Topics include anatomical terminology, homeostasis, the cell, the four tissue types, and the eleven organ systems of the human body. Co-requisite: KINE 1460.

**Corequisites:** EXSC 1460

**Term Offered:** Spring, Fall

Core Natural Sciences

**EXSC 1700 Intro to Exercise Science**

[2 credit hours]

An introduction to the professions involving exercise science, sports science, athletic training and rehabilitation therapy. Emphasis is on basic concepts of anatomical, neurological, physiological, biomechanical and psychological function in human movement.

**Term Offered:** Spring, Fall

**EXSC 2460 Human Anatomy And Physiology I Lab**

[1 credit hour]

Laboratory exercise in anatomical terminology, cell division and transport, histology, and dissection, identification, and physiology of the skeletal system, skeletal muscle system, and nervous system; including the eye and ear. Co-requisite: KINE 2560.

**Corequisites:** EXSC 2560

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

**EXSC 2470 Human Anatomy And Physiology II Lab**

[1 credit hour]

Laboratory exercises in endocrine, cardiovascular, respiratory, digestive, lymphatic, urinary, and reproductive anatomy, histology, physiology, including computer assisted experiments.

**Corequisites:** EXSC 2570

**Term Offered:** Spring, Summer, Fall

**EXSC 2510 Human Anatomy**

[3 credit hours]

An integrated study of both regional anatomy and musculoskeletal, cardiovascular, lymphatic, respiratory, neurologic, digestive, renal, endocrine and reproductive systems. Required for students in exercise science and allied health professional programs.

**Prerequisites:** KINE 1700 with a minimum grade of C or EXSC 1700 with a minimum grade of C

**Corequisites:** EXSC 2520

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

**EXSC 2520 Human Anatomy Lab**

[1 credit hour]

Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory anatomy.

**Corequisites:** EXSC 2510

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

**EXSC 2530 Human Physiology**

[3 credit hours]

This course provides foundational information on human physiology. Emphasis is placed on cell physiology, metabolism, as well as the musculoskeletal, cardiovascular, respiratory, endocrine, and immune systems in the maintenance of normal body function.

**Prerequisites:** (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 2540 Human Physiology Lab**

[1 credit hour]

Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory physiology.

**Corequisites:** EXSC 2530

**Term Offered:** Spring, Summer, Fall

**EXSC 2560 Anatomy and Physiology I**

[3 credit hours]

Anatomy and physiology of the human body. Study of cells, tissues, special senses, and the skeletal, muscle, and nervous systems. Co-requisite: KINE 2460. Natural science core course.

**Corequisites:** EXSC 2460

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**EXSC 2570 Human Anatomy and Physiology II**

[3 credit hours]

Anatomy and physiology of human endocrine, blood, cardiovascular, lymphatic, respiratory, digestive, urinary and electrolyte, and reproductive systems. Pre-requisite: KINE 2460 and KINE 2560 or permission of instructor; Co-requisite: KINE 2470.

**Prerequisites:** (KINE 2460 with a minimum grade of C and KINE 2560 with a minimum grade of C) or (EXSC 2460 with a minimum grade of C and EXSC 2560 with a minimum grade of C)

**Corequisites:** EXSC 2470

**Term Offered:** Spring, Summer, Fall



**EXSC 2580 Human Pathophysiology For Health Care**

[3 credit hours]

Study of pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries of organ systems.

**Prerequisites:** (KINE 2460 with a minimum grade of D- and KINE 2470 with a minimum grade of D- and KINE 2560 with a minimum grade of D- and KINE 2570 with a minimum grade of D-) or (KINE 2510 with a minimum grade of D- and KINE 2520 with a minimum grade of D-) or (EXSC 2460 with a minimum grade of D- and EXSC 2470 with a minimum grade of D- and EXSC 2560 with a minimum grade of D- and EXSC 2570 with a minimum grade of D-) or (EXSC 2510 with a minimum grade of D- and EXSC 2520 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EXSC 2590 Microbiology and Infectious Diseases**

[3 credit hours]

This course describes and differentiates basic Microbiology topics as well as covering bacterial, viral, and protozoan infections within various body systems.

**Prerequisites:** BIOL 2150 with a minimum grade of C or BIOL 2170 with a minimum grade of C or EEES 2150 with a minimum grade of C or KINE 2510 with a minimum grade of C or KINE 2530 with a minimum grade of C or KINE 2560 with a minimum grade of C or EXSC 2510 with a minimum grade of C or EXSC 2530 with a minimum grade of C or EXSC 2560 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**EXSC 2610 Evaluation of Lower Extremity Injuries**

[3 credit hours]

Study of the pathology, etiology and physiology of lower extremity injuries common in athletics as well as life-threatening head and neck injuries. Signs, symptoms and specific tests will be discussed.

**Corequisites:** EXSC 2630

**Term Offered:** Fall

**EXSC 2620 Evaluation of Upper Extremity Injuries**

[3 credit hours]

Study of the pathology, etiology and physiology of Upper extremity injuries common in athletics as well as non-life-threatening head and neck injuries. Signs, symptoms and specific tests for the upper extremity and trunk will be discussed.

**Prerequisites:** KINE 2710 with a minimum grade of B- or EXSC 2710 with a minimum grade of B-

**Corequisites:** EXSC 2640

**Term Offered:** Spring

**EXSC 2630 Clinical Anatomy for Athletic Training I**

[1 credit hour]

A clinical anatomy course for athletic training majors focusing on the musculoskeletal system of the lower extremity and how it relates to injury mechanism, prevention and rehabilitation in active individuals.

**Corequisites:** EXSC 2610

**Term Offered:** Fall

**EXSC 2640 Clinical Anatomy for Athletic Training II**

[1 credit hour]

A clinical anatomy course for athletic training majors focusing on the musculoskeletal system of the upper extremity and how it relates to injury mechanism, prevention and rehabilitation in active individuals.

**Corequisites:** EXSC 2620

**Term Offered:** Spring

**EXSC 2710 Clinical Skills Development I**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the first year of the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Term Offered:** Fall

**EXSC 2720 Clinical Skills Development II**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the lower extremity evaluation course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 2710 with a minimum grade of B- or EXSC 2710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 3200 Advanced Human Anatomy**

[3 credit hours]

An elective course that applies musculoskeletal anatomy to human movement, function, injury evaluation and rehabilitation through in cadaver observation and dissection.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 3240 Concepts of Exercise Fitness and Health Strategies**

[3 credit hours]

This focus of this course is the self-exploration of the importance of regular physical activity including cardiovascular and muscular exercise on maintaining physical fitness and wellness. Min.grade of C for HPFP concentration.

**Prerequisites:** (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 3520 Applied Exercise Physiology**

[3 credit hours]

This course will provide information related to the physiological responses of the human organism to exercise and exercise training. Emphasis will also be placed on the role exercise plays in health and disease prevention.

**Prerequisites:** KINE 2530 with a minimum grade of C or KINE 2570 with a minimum grade of C or EXSC 2530 with a minimum grade of C or EXSC 2570 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**EXSC 3530 Applied Exercise Physiology Laboratory**

[1 credit hour]

This course is the laboratory component of the applied exercise physiology course. Emphasis will be placed on the concepts learned in lecture. This will occur through hands-on activities and experiments involving various forms of exercise testing and the use of standardized equipment.

**Corequisites:** EXSC 3520

**Term Offered:** Spring, Summer, Fall

**EXSC 3580 Human Pathophysiology**

[3 credit hours]

A discovery of the pathophysiology of organ systems, concentrating on metabolic, cardiovascular, respiratory, endocrine, muscle, and gastrointestinal systems with exercise as a guiding element of discussion.

**Prerequisites:** EXSC 2530 with a minimum grade of C or KINE 2530 with a minimum grade of C

**Term Offered:** Spring, Fall

**EXSC 3610 General Medical Conditions For Athletic Trainers**

[2 credit hours]

Knowledge and skills that entry-level athletic trainers must possess to recognize, treat and refer, when appropriate, the general medical conditions and disabilities of people involved in physical activity.

**Prerequisites:** (KINE 3630 with a minimum grade of D- and KINE 3710 with a minimum grade of B-) or (EXSC 3630 with a minimum grade of D- and EXSC 3710 with a minimum grade of B-)

**Term Offered:** Spring, Fall

**EXSC 3620 Professional Responsibilities in the Fitness Industry**

[3 credit hours]

This course examines the ethical, legal and professional responsibilities of working in an allied health profession as a personal trainer, fitness consultant or exercise specialist.

**Term Offered:** Fall

**EXSC 3630 Therapeutic Modalities For Athletic Trainers**

[3 credit hours]

Physiological, mechanical and bio-electrical principles and techniques of application for electrical, thermal, high frequency radiation and traction modalities used in the treatment of athletic injuries.

**Prerequisites:** (KINE 2620 with a minimum grade of D- and KINE 2720 with a minimum grade of B-) or (EXSC 2620 with a minimum grade of D- and EXSC 2720 with a minimum grade of B-)

**Term Offered:** Fall

**EXSC 3650 Foundations of Sports Medicine**

[3 credit hours]

A review of the foundation aspects of sports medicine, including but not limited to: prevention and wellness, emergency care, clinical examination and diagnosis, therapeutic interventions and aspects of professional practice. Specifically relates to the fields of athletic training, sports medicine, musculoskeletal rehabilitation and orthopedic medicine.

Course will also include observation of sports medicine professionals in a clinical setting.

**EXSC 3660 Rehabilitation Of Athletic Injuries**

[3 credit hours]

A systematic approach to exercise program development, techniques, indications and contraindications of exercise, and exercise progression as related to athletic injuries, prevention, reconditioning and return to play guidelines.

**Prerequisites:** KINE 3710 with a minimum grade of B- or EXSC 3710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 3680 Sport and Exercise Pharmacology**

[3 credit hours]

Provide the basics of pharmacology related to sport and exercise including: pharmacokinetics, indications and contradictions of various drugs and legal concerns related to using therapeutic and non-therapeutic drugs. Min.grade of C for HPFP concentration.

**Prerequisites:** (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

**Term Offered:** Spring

**EXSC 3710 Clinical Skills Development III**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the upper extremity evaluation course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 2720 with a minimum grade of B- or EXSC 2720 with a minimum grade of B-

**Term Offered:** Fall

**EXSC 3720 Clinical Skills Development IV**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the therapeutic modalities course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 3710 with a minimum grade of B- or EXSC 3710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 3830 Principles of Strength Conditioning**

[3 credit hours]

This course provides students with a fundamental understanding of muscular strength conditioning principles and the application of these principles to exercise programming relevant to physical activity and athletic performance. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C) or (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Term Offered:** Fall**EXSC 3850 Cardiac Dysrhythmia Interpretation**

[3 credit hours]

This course examines cardiac anatomy, electrophysiology and basic cardiac rhythms with an emphasis on the recognition and interpretation of cardiac dysrhythmias. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Term Offered:** Fall**EXSC 3860 Cardiac Dysrhythmia Lab**

[1 credit hour]

This course is the practical application of the techniques required to administer a 12 lead EKG at rest and during exercise. Students will record multiple EKG's and interpret the rhythm. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Corequisites:** EXSC 3850**Term Offered:** Fall**EXSC 3920 Cardiopulmonary Pathophysiology**

[3 credit hours]

**EXSC 3950 Research Design in Exercise Science**

[3 credit hours]

This course emphasizes the design, analysis and interpretation of qualitative and quantitative research methods in the areas of athletic training, exercise science and other health-related fields. Min. grade of C or better for HPFP concentration.

**Prerequisites:** MATH 2600 with a minimum grade of D- or RESM 4100 with a minimum grade of D-

**Term Offered:** Spring**EXSC 4140 Fitness Internship I**

[4 credit hours]

Students will actively engage and participate in the day-to-day functions including operational, managerial and client assessments in a health, wellness or fitness facility (16 hours/week). Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 3850 with a minimum grade of C and KINE 3860 with a minimum grade of C and KINE 4850 with a minimum grade of C and KINE 4860 with a minimum grade of C) or (EXSC 3850 with a minimum grade of C and EXSC 3860 with a minimum grade of C and EXSC 4850 with a minimum grade of C and EXSC 4860 with a minimum grade of C)

**Term Offered:** Fall**EXSC 4210 Exercise Facility Management**

[3 credit hours]

Students will develop an understanding of the skills necessary for marketing, promoting and managing various fitness, wellness and rehabilitation facilities. Min. grade of C for HPFP concentration.

**Term Offered:** Spring**EXSC 4250 Readings in Exercise Biology**

[3 credit hours]

Faculty and student directed readings of original research in Exercise Biology, along with laboratory demonstrations. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

**Term Offered:** Spring, Fall**EXSC 4540 Applied Biomechanics**

[3 credit hours]

This course focuses on the application of biomechanics concepts to the acquisition and refinement of fundamental movement patterns, basic functional skills and sport activities. Such topics as locomotion, balance and the biomechanical basis of injury are examined.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2530 with a minimum grade of C)

**Term Offered:** Spring, Fall**EXSC 4550 Applied Biomechanics Lab**

[1 credit hour]

This course is the laboratory component of the applied biomechanics course. Emphasis will be placed on the application of the concepts learned in lecture to rehabilitation, sports injury, exercise, and sport situations. This will occur through hands-on activities and experiments involving contemporary forms of biomechanical instrumentation.

**Corequisites:** EXSC 4540**Term Offered:** Spring, Fall

**EXSC 4640 Neurological And Pathological Foundations Of Rehabilitation**  
[3 credit hours]

Study of neurological control of normal movement and the implications of various medical pathologies for rehabilitation. Emphasis on inflammatory processes, metabolic and vascular disturbances, traumatic injuries, nutritional deficiencies, neoplasms, degenerative conditions and congenital disorders.

**Prerequisites:** (KINE 2510 with a minimum grade of C or KINE 2560 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C or EXSC 2560 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 4650 Organization And Administration Of Athletic Training Programs**  
[3 credit hours]

Administration of athletic training programs including athletic training room management, budgeting, staffing, insurance, medical records, emergency care planning, preparticipation physical examinations, athletic training room design, legal issues and public relations.

**Prerequisites:** KINE 3720 with a minimum grade of B- or EXSC 3720 with a minimum grade of B-

**Term Offered:** Fall

**EXSC 4710 Clinical Skills Development V**  
[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the rehabilitation of sports injuries course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 3720 with a minimum grade of B- or EXSC 3720 with a minimum grade of B-

**Term Offered:** Fall

**EXSC 4720 Clinical Skills Development Vi**  
[2 credit hours]

Emphasis on clinical experience in athletic training off-campus. Also includes a laboratory experience to review clinical skills.

**Prerequisites:** KINE 4710 with a minimum grade of B- or EXSC 4710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 4830 Principles of Endurance Conditioning**  
[3 credit hours]

This course is intended to prepare students with a fundamental understanding of endurance conditioning principles and the application of these principles to exercise programming relevant to physical activity and athletic performance.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C) or (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Term Offered:** Fall

**EXSC 4840 Fitness Internship II**  
[4 credit hours]

Students will actively engage and participate in the day-to-day functions including operational, managerial and client assessments in a health, wellness or fitness facility (16 hours/week). Min. grade of C for HPFP concentration.

**Prerequisites:** KINE 4140 with a minimum grade of D- or EXSC 4140 with a minimum grade of D-

**Term Offered:** Spring

**EXSC 4850 Clinical Exercise Testing**  
[3 credit hours]

The purpose of this course is to provide students with an understanding of the relationship between exercise and chronic disease, an understanding of the mechanisms and adaptations by which exercise influences the disease process, and an understanding of the role and importance of exercise testing and training in the prevention, evaluation and treatment of these chronic diseases. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 3850 with a minimum grade of C and KINE 3860 with a minimum grade of C) or (EXSC 3850 with a minimum grade of C and EXSC 3860 with a minimum grade of C)

**Term Offered:** Spring

**EXSC 4860 Clinical Exercise Testing Lab**  
[1 credit hour]

The purpose of this course is to provide students with the skills needed to perform a 12 lead electrocardiogram stress test on their own. Min. grade of C for HPFP concentration.

**Prerequisites:** KINE 4850 with a minimum grade of D- or EXSC 4850 with a minimum grade of D-

**Term Offered:** Spring

**EXSC 4900 Human Performance Seminar**  
[1-3 credit hours]

Classroom and laboratory analysis of current research in varied topic areas.

**Term Offered:** Spring, Fall



**EXSC 4940 Internship-Practicum**

[2-15 credit hours]

Clinical experience in locations both inside and outside the university setting. Placement depends on area of study.

**Term Offered:** Summer

**EXSC 4990 Independent Study In Exercise Science/Physical Education**

[1-3 credit hours]

Directed individual study. Specialty title, seminar sheet and permission of instructor required.

**Term Offered:** Spring, Summer, Fall

**OCCT 2550 PURPOSEFUL LIVING ROLE OF OCCUPATIONAL THERAPY**

[3 credit hours]

Introduces the occupational therapy profession and occupational therapy's role in maintaining functional daily living. Explore your daily occupations through self-reflection and develop strategies for personal growth.

**Term Offered:** Spring, Fall

**RCBS 3010 Respiratory Care Fundamentals**

[4 credit hours]

A study of the anatomy and physiology of the respiratory and cardiovascular systems, including the physics of gas exchange, ventilation, and blood flow.

**Corequisites:** RCBS 3020

**Term Offered:** Summer

**RCBS 3020 Respiratory Care Practice I**

[4 credit hours]

An introductory experience in the basic assessment and care of the patient with cardiopulmonary disease. Ethical issues, interpersonal communication, and infection control in the healthcare setting will also be covered.

**Corequisites:** RCBS 3010

**Term Offered:** Summer

**RCBS 3110 Respiratory Care Therapeutics I**

[4 credit hours]

Etiology, pathophysiology, clinical manifestations, and treatment of selected diseases of pulmonary and cardiovascular systems with emphasis on pharmacologic principles and agents used in the treatment of those diseases.

**Prerequisites:** (RCBS 3010 with a minimum grade of D- and RCBS 3020 with a minimum grade of D-)

**Term Offered:** Fall

**RCBS 3120 Respiratory Care Practice II**

[7 credit hours]

Didactic, laboratory, and introductory clinical experiences with a variety of equipment and procedures that are used to establish and maintain a patent airway, and to monitor and treat patients with cardiopulmonary diseases.

**Prerequisites:** (RCBS 3010 with a minimum grade of D- and RCBS 3020 with a minimum grade of D-)

**Term Offered:** Fall

**RCBS 3130 Cardiopulmonary Diagnostics I**

[4 credit hours]

Discussion of the theory and selected techniques used in cardiopulmonary diagnostics, including analysis of blood gases, cardiac rhythms, hemodynamic monitoring values, spirometry results, and chest x-rays.

**Prerequisites:** (RCBS 3010 with a minimum grade of D- and RCBS 3020 with a minimum grade of D-)

**Term Offered:** Fall

**RCBS 3210 Respiratory Care Therapeutics II**

[4 credit hours]

Continuation of RCBS 3110 with consideration of disease states of the pulmonary and cardiovascular systems not previously considered. Emphasis on analysis of assessment, diagnosis and treatment of individual patients by students.

**Prerequisites:** (RCBS 3110 with a minimum grade of D- and RCBS 3120 with a minimum grade of D- and RCBS 3130 with a minimum grade of D-)

**Term Offered:** Spring

**RCBS 3220 Respiratory Care Practice III**

[7 credit hours]

Theoretical principles involved in the initiation, maintenance, and discontinuance of mechanical ventilation. Laboratory experiences with a variety of adult mechanical ventilators. Clinical experiences providing respiratory care for patients requiring mechanical ventilation.

**Prerequisites:** (RCBS 3110 with a minimum grade of D- and RCBS 3120 with a minimum grade of D- and RCBS 3130 with a minimum grade of D-)

**Term Offered:** Spring

**RCBS 3230 Cardiopulmonary Diagnostics II**

[3 credit hours]

Classroom and laboratory experiences in the theory and practice of selected cardiopulmonary diagnostic procedures including measures of pulmonary volumes, flows, gas distribution, and gas diffusion. Capnography, exercise testing, and specialized test regimens will also be covered.

**Prerequisites:** (RCBS 3110 with a minimum grade of D- and RCBS 3120 with a minimum grade of D- and RCBS 3130 with a minimum grade of D-)

**Term Offered:** Spring

**RCBS 3300 Advanced Cardiac Life Support**

[1 credit hour]

American Heart Association Advanced Cardiac Life Support course designed to aid in the management of cardiopulmonary emergencies. Students must have previous knowledge of cardiac pharmacology and rhythms, and current CPR certification.

**Term Offered:** Spring, Fall

**RCBS 4140 Integrated Clinical Practice I**

[4 credit hours]

Clinical experiences in the acute care setting that requires the application of theory related to the diagnosis, treatment and management of adult, neonatal and pediatric patients with cardiopulmonary disease.

**Prerequisites:** (RCBS 3210 with a minimum grade of D- and RCBS 3220 with a minimum grade of D- and RCBS 3230 with a minimum grade of D-)

**Term Offered:** Fall



**RCBS 4150 Neonatal/Pediatric Respiratory Care**

[4 credit hours]

A discussion of the etiology, pathophysiology and treatment of neonatal and pediatric disorders. Laboratory exercises designed to familiarize student with neonatal and pediatric resuscitation and ventilation.

**Prerequisites:** (RCBS 3210 with a minimum grade of D- and RCBS 3220 with a minimum grade of D- and RCBS 3230 with a minimum grade of D-)

**Term Offered:** Fall

**RCBS 4160 Clinical Assessment**

[3 credit hours]

This course will provide the students with knowledge and enhance their critical thinking skills related to patient assessment and the development and modification of patient respiratory care plans.

**Prerequisites:** (RCBS 3210 with a minimum grade of D- and RCBS 3220 with a minimum grade of D- and RCBS 3230 with a minimum grade of D-)

**Term Offered:** Fall

**RCBS 4240 Integrated Clinical Practice II**

[3 credit hours]

Clinical experiences with a primary focus on advanced skills used in the management of cardiopulmonary patients of all ages in the acute and subacute care settings.

**Prerequisites:** (RCBS 4150 with a minimum grade of D- and RCBS 4140 with a minimum grade of D-)

**Term Offered:** Spring

**RCBS 4510 Respiratory Care in Alternate Sites**

[3 credit hours]

The delivery of care to cardiopulmonary patients outside of the acute care facility will be discussed. Standards of care in addition to the funding of this care will be investigated. Special procedures in respiratory care will be presented.

**Term Offered:** Spring

**RCBS 4700 Research Analysis In Respiratory Care**

[3 credit hours]

Review of appropriate statistical knowledge required to analyze applied/clinical and basic published research. Includes a review of the elements of basic research design, reliability and validity, and critical review of cardiopulmonary research literature.

**Term Offered:** Fall

**RCBS 4800 Issues In Professional Practice**

[3 credit hours]

A capstone course designed to prepare the senior student for professional practice. Decision-making skills in complex clinical situations are developed through the use of clinical simulations and student case presentations.

**Prerequisites:** (RCBS 4140 with a minimum grade of D- and RCBS 4150 with a minimum grade of D- and RCBS 4160 with a minimum grade of D- and RCBS 4700 with a minimum grade of D-)

**Term Offered:** Spring

**RCBS 4810 Preparation For Professional Practice**

[1 credit hour]

This laboratory course is designed to complement the corequisite RCBS 4800 lecture course. Emphasis on enhancing the students' ability to integrate complex cognitive and psychomotor skills in preparation for professional practice.

**Term Offered:** Spring

**RCBS 4990 Independent Study**

[1-4 credit hours]

Independent study of specific topics and issues under the supervision of a faculty member of the department of health promotion and human performance. The student will participate in independent reading, clinical/laboratory research, field experience and other similar activities. Independent study course must have a specialty; seminar sheet required.

**Term Offered:** Spring

**RCRT 1300 Introduction To Recreation And Leisure Studies**

[3 credit hours]

An introductory course which gives an overview of recreation and leisure in educational, governmental, institutional and professional settings.

Explores historical, social and economic implications from personal and professional perspectives. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 1310 Recreation Programming**

[3 credit hours]

An introductory course that presents theories and principles of programming, program planning, practical experiences in implementation, and facilitation of recreational programs. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 2200 Principles of Travel, Tourism and Event Planning**

[3 credit hours]

Travel and tourism is one of the largest industries in the world today. Students will be introduced to the principles of tourism, industry history, types and functions of tourism sectors, the tourism distribution system, the role of stakeholders in the creation and delivery of tourism, and motivations for travel as a means of understanding tourism demand.

**RCRT 3310 Inclusive Recreation**

[3 credit hours]

An introductory course which defines the principals of inclusion and major legislation that impacts the provision and delivery of recreational services for individuals with disabilities. Thirty hour volunteer component required. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 3710 Leadership and Administration In Outdoor Pursuits**

[3 credit hours]

An introduction to theory and techniques of adventure programming as a treatment protocol and/or leisure education tool. Students learn and apply the components of risk management through the development of a risk management plan and practical implication exercises. Outdoor trips required. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 1310 with a minimum grade of D-

**Term Offered:** Spring, Fall

**RCRT 4000 Community Event Planning**

[3 credit hours]

This course introduces the principles, strategies, and risk management concerns for planning a variety of events to achieve treatment outcomes and community/social integration. Students gain experience planning accessible events for a variety of group sizes and diverse populations.

Event critiques required. Minimum "C" required for RCRT majors.

**Term Offered:** Summer, Fall

**RCRT 4010 Planning & Promotion of Sport**

[3 credit hours]

This course focuses on the basic principles of marketing and delivery of services associated with intercollegiate athletics, professional, and multi-sport club operations, facilities and management of resources. This course also examines motivation and behavior of sports tourists.

**Term Offered:** Fall**RCRT 4330 Administration In Recreation And Recreational Therapy**

[3 credit hours]

This course focuses on the administrative functions of delivering therapeutic recreation services. Students will gain an understanding of the aspects of management principles including ethics, legislation, technology, quality management, risk management, financial and human resources, marketing, and accrediting agencies. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4340 Leisure Recreation And Aging**

[3 credit hours]

This course provides a study of the impacts of aging on leisure and recreation activities during middle and later adulthood by investigating the aging process, leisure across the lifespan, and the impact of leisure and recreation on quality of life and wellness. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4440 Park And Recreation Planning**

[3 credit hours]

An integration of landscape architecture, facility design and location, as well as the functional aesthetic considerations of park and recreational facility planning. Emphasis will be on plan-formulation procedures.

**Term Offered:** Spring**RCRT 4450 Research Applications In Recreation And Recreational Therapy**

[3 credit hours]

This course introduces research applications utilized by Recreation Therapy practitioners. Students will learn about evidence based practice, development and implementation of survey research, and the use of experimental designs. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4600 Therapeutic Arts**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using arts and crafts modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4610 Rt Intervention: Horticulture Therapy**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using horticulture modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4620 Animal Assisted Therapy**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using a variety of animal-assisted modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4630 Therapeutic Activities**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using a variety of games, humor and play modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4640 Rt Intervention: Therapeutic Groups**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using therapeutic group techniques and processes as a modality. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4660 Relaxation And Stress Management**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using relaxation and stress management techniques as a modality. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4670 Rt Intervention: Leisure Education**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using leisure education activities, including: social skills, values clarification, leisure awareness, resources and knowledge. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4680 Rt Intervention: Assistive Technology And Techniques**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes utilizing assistive technology, techniques, and resources in therapeutic settings. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4690 Rt Intervention: Aquatic Therapy**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes utilizing swimming, evidence-based aquatic programming methods, and resources. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Summer, Fall**RCRT 4720 Introduction To Therapeutic Recreation**

[3 credit hours]

This course is designed to introduce the student to theories, models, principles, and history of therapeutic recreation service. Through lectures, discussions and self-directed learning activities, the student will examine the structure and function of therapeutic recreation processes in a variety of treatment settings. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4730 Medical And Clinical Aspects Of Therapeutic Recreation**

[3 credit hours]

This course is designed to provide the student with in-depth knowledge of health-related conditions or disabilities related to physical, neurological, sensory and metabolic impairments across the lifespan. Uses of pharmacological interventions, family involvement, programming, and other implications impacting Therapeutic Recreation practice will be examined. Minimum "C" required for RCRT majors.

**Term Offered:** Fall**RCRT 4740 Assessment And Documentation In Therapeutic Recreation**

[3 credit hours]

This course introduces the student to the APIE(D) process, reviews assessment tools (standardized and self-designed) used in practice, common documentation methods and skills needed for therapeutic recreation practice including: initial assessment, treatment planning, documentation, and discharge planning. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4750 Group Dynamics In Recreational Therapy**

[3 credit hours]

This course introduces students to the concepts and theories of the therapeutic group process as it applies to professional practice. Students will be introduced to and practice: facilitation skills, behavior modification techniques, and effective communication and leadership skills. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4760 Research Administrative Programming In Therapeutic Recreation**

[3 credit hours]

Course will focus on current issues and techniques relating to comprehensive research program design, implementation and evaluation relating to the practice of therapeutic recreation.

**Prerequisites:** (RCRT 4720 with a minimum grade of D- and RCRT 4730 with a minimum grade of D- and RCRT 4740 with a minimum grade of D-)

**RCRT 4770 Project Design**

[2 credit hours]

In support of the recreation therapy internship the student will design a capstone project that links practical experience with formal academic preparation.

**Corequisites:** RCRT 4940**Term Offered:** Spring, Summer, Fall**RCRT 4780 Project Evaluation**

[2 credit hours]

In support of RCRT 4770, this course requires the student to implement, evaluate, and prepare a professional presentation of the recreation therapy internship capstone project.

**Term Offered:** Spring, Summer, Fall**RCRT 4790 Medical & Clinical Aspects In Therapeutic Recreation II**

[3 credit hours]

This course is designed to provide the student with in-depth knowledge of health-related conditions or disabilities related to intellectual and developmental disabilities and psychological impairments across the lifespan. Uses of pharmacological interventions, family involvement, programming, and other implications impacting Therapeutic Recreation practice will be examined. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-**Term Offered:** Spring**RCRT 4800 Clinical: Physical Rehabilitation**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a physical rehabilitation population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**RCRT 4810 Clinical: Psychiatric Rehabilitation**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a psychiatric rehabilitation population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**RCRT 4820 Clinical: Intellectual Deficit/Developmental Disability**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with an ID/DD rehabilitation population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**RCRT 4830 Clinical: Geriatric**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a geriatric population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**RCRT 4840 Clinical: Pediatric**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a pediatric population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-**Term Offered:** Summer, Fall

**RCRT 4850 Internship Preparation**

[1 credit hour]

This course is designed to prepare the student for the internship process and professional employment in recreation therapy. Students will learn and practice professional skills; such as, resume writing, interviewing techniques, and professionalism. Student internship expectations and professional certifications and licensure are also addressed. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4860 Therapeutic Fitness**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using therapeutic fitness modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4870 Program Planning In Recreational Therapy**

[3 credit hours]

This course requires the student to apply cumulative knowledge of the APIE(D) process through designing evidence-based: treatment programs, program evaluations, protocols and treatment plans in recreation therapy practice. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4900 Seminar In Recreation And Leisure**

[1-3 credit hours]

This course provides faculty the opportunity to develop additional curriculum in recreation therapy related academic areas not offered as part of the current curriculum. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall**RCRT 4930 Senior Internship**

[4 credit hours]

An opportunity for the student to become totally involved as an intern in functionally related tasks which will help prepare for an appropriate role as a professional in the field. Not available for therapeutic recreation students. This course may be taken twice in the same semester.

**Term Offered:** Spring, Summer, Fall**RCRT 4940 Internship In Recreational Therapy**

[5 credit hours]

In accordance with the University of Toledo and NCTRC certification requirements, this course requires 560 hours of internship experience over a minimum of 14 consecutive weeks supervised by a CTRS. The internship experience is only offered in the summer and requires faculty approval. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4950 with a minimum grade of D-**Term Offered:** Summer**RCRT 4950 Recreation Therapy Internship I**

[5 credit hours]

In accordance with the University of Toledo and NCTRC certification requirements, this course requires 280 hours of internship experience over a minimum of 7 consecutive weeks supervised by a CTRS. The internship experience is only offered in the summer and requires faculty approval. Minimum "C" required for RCRT majors.

**RCRT 4960 Recreation Therapy Internship II**

[5 credit hours]

In accordance with the University of Toledo and NCTRC certification requirements, this course requires 280 hours of internship experience over a minimum of 7 consecutive weeks supervised by a CTRS. The internship experience is only offered in the summer and requires faculty approval. Minimum "C" required for RCRT majors.

**RCRT 4990 Independent Study In Recreation And Leisure Studies**

[1-3 credit hours]

This course provides students the opportunity to develop an independent learning experience in support of academic and/or professional interests. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Summer, Fall

## BS in Exercise Science

The University of Toledo offers a bachelor of science degree in exercise science. This degree requires 120 credit hours for graduation. The degree is for students who want to study the anatomical, physiological, biomechanical and psychological bases of human physical performance. The curriculum has a strong foundation in the natural sciences. Students have the opportunity to concentrate in one of the following areas:

- Human Performance and Fitness Promotion
- Pre-Medical Professions
- Pre-Rehabilitation Sciences

Many students use the degree as a preparation for graduate education in exercise science, medicine and other allied health fields such as physical therapy and occupational therapy.

Additional information about the degree can be found at the department's web site at <http://www.utoledo.edu/hhs/exercise-science/undergradprograms.html>

## Human Performance and Fitness Promotion

Many exercise science students are interested in applying their interest and expertise in human physical performance to the prevention and treatment of disease and disability, to the enhancement of health and fitness, and to the facilitation of sport performance through training and conditioning. The concentration in human performance and fitness promotion is for these students. Beyond the required exercise science courses, these students take additional course work that focuses on the use of exercise and exercise testing in the diagnosis and treatment of cardiovascular and metabolic diseases, reduced muscle strength and endurance tolerance. Students in this concentration will focus on the development of exercise programs designed to enhance health, general fitness and exercise performance.

In addition to two internships, many students complete one or more of the certification programs offered by organizations such as the American College of Sports Medicine and the National Strength and Conditioning Association. These certifications, in combination with the student's academic training, provide excellent credentials for employment in fitness/wellness programs or cardiovascular rehabilitation as well as many commercial fitness facilities.

## Pre-Medical Professions

The Pre-Medical Professions concentration provides students with the opportunity to complete the exercise science degree and prepare for admission into medical school or physician assistant graduate programs. Students will identify and research the specific admission requirements for those programs to which they intend to apply. If the requirements are not in the degree program, they should be included among the supporting electives in consultation with the program advisor. It is the student's responsibility to make sure all prerequisites for intended programs are completed. All medical and physician assistant programs involve a competitive admission process. Thus, completion of the Pre-Medical Professions option at UToledo does not guarantee acceptance to any graduate program.

## Pre-Rehabilitation Sciences

The Pre-Rehabilitation Sciences concentration provides students with the opportunity to complete the exercise science degree and prepare for admission into a graduate entry-level program for athletic training, occupational therapy, or physical therapy. Students will identify and research the specific admission requirements for those programs to which they intend to apply. If the requirements are not in the degree program, they should be included among the supporting electives in consultation with the program advisor. It is the student's responsibility to make sure all prerequisites for intended programs are completed. All athletic training, occupational therapy, and physical therapy programs involve a competitive admission process. Thus, completion of the Pre-Rehabilitation Sciences option at UToledo does not guarantee acceptance to any graduate program.

## Human Performance and Fitness Promotion Internship Requirements

- Immunizations: Hepatitis B, Rubella, Rubeola, Varicella (Chickenpox), Mumps, Tetanus/Diphtheria or Tetanus, Diphtheria and Acellular Pertussis, Tuberculosis, Flu Vaccination within past 12 months.
- Certification in CPR.
- Criminal background check required.
- Physical requirements: must be able to move, lift or carry equipment weighing up to 50 lbs., push equipment up to 600 lbs., and lift/assist clients up to 300 lbs. with assistance. Must have full range of body motion and eye/hand coordination. Required to have corrected vision and hearing to normal range.
- Transportation: Students must provide own transportation to sites up to 100 mile radius.
- Speech, Vision and Hearing Demands: Be able to interact and communicate effectively.
- Physical Demands: Performance of appropriate exercise recommendations involves standing, walking, and moving of heavy exercise equipment.
- Mental Demands: Must possess the emotional health required for full utilization of intellectual abilities (appropriate medical judgment).
- BS in Exercise Science, Human Performance and Fitness Promotion (p. 300)
- BS in Exercise Science, Pre-Medical Professions

- Pre-Medicine (p. 301)
- Pre-Physician Assistant (p. )
- BS in Exercise Science, Pre-Rehabilitation Sciences (p. 303)  
(include pre-athletic training, pre-occupational therapy, pre-physical therapy)

## BS in Exercise Science, Human Performance and Fitness Promotion

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
ENGL 1110	College Composition I	3
EXSC 1700	Intro to Exercise Science <sup>1</sup>	2
HHS 1000	Health And Human Services/College Orientation	1
MATH 1340	College Algebra And Trigonometry	5
Hours		16
<b>Second Term</b>		
ENGL 2950	Science And Technical Report Writing	3
EXSC 2510	Human Anatomy <sup>1</sup>	3
EXSC 2520	Human Anatomy Lab <sup>1</sup>	1
HEAL 1800	Medical Terminology	3
PSY 1010	Principles Of Psychology	3
Arts/Humanities Core (Diversity of US)		3
Hours		16
<b>Third Term</b>		
COMM 2840	Interpersonal Communication	3
EXSC 2530	Human Physiology <sup>1</sup>	3
EXSC 2540	Human Physiology Lab <sup>1</sup>	1
PHYS 2070	General Physics I (FL)	5
Non-US Diversity		3
Hours		15
<b>Fourth Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
EXSC 3240	Concepts of Exercise Fitness and Health Strategies <sup>1</sup>	3
EXSC 3520	Applied Exercise Physiology <sup>1</sup>	3
EXSC 3530	Applied Exercise Physiology Laboratory <sup>1</sup>	1
EXSC 3580	Human Pathophysiology <sup>1</sup>	3
Hours		15
<b>Fifth Term</b>		
EXSC 3620	Professional Responsibilities in the Fitness Industry (FL) <sup>1</sup>	3
EXSC 3830	Principles of Strength Conditioning (FL) <sup>1</sup>	3



EXSC 3850	Cardiac Dysrhythmia Interpretation (FL) <sup>1</sup>	3
EXSC 3860	Cardiac Dysrhythmia Lab (FL) <sup>1</sup>	1
EXSC 4830	Principles of Endurance Conditioning (FL) <sup>1</sup>	3
HEAL 4700	Nutritional Science	3
Hours		16

**Sixth Term**

EXSC 3680	Sport and Exercise Pharmacology (SP) <sup>1</sup>	3
EXSC 4540	Applied Biomechanics <sup>1</sup>	3
EXSC 4550	Applied Biomechanics Lab <sup>1</sup>	1
EXSC 4850	Clinical Exercise Testing (SP) <sup>1</sup>	3
EXSC 4860	Clinical Exercise Testing Lab (SP) <sup>1</sup>	1
HPFP Elective		3
Hours		14

**Seventh Term**

EXSC 4140	Fitness Internship I (FL) <sup>1</sup>	4
RESM 4100	Educational Statistics	3
HPFP Elective		3
Social Sciences Core		3
Elective		2
Hours		15

**Eighth Term**

EXSC 3950	Research Design in Exercise Science (SP) <sup>1</sup>	3
EXSC 4210	Exercise Facility Management (SP) <sup>1</sup>	3
EXSC 4640	Neurological And Pathological Foundations Of Rehabilitation <sup>1</sup>	3
EXSC 4840	Fitness Internship II (SP) <sup>1</sup>	4
Hours		13
Total Hours		120

<sup>1</sup> A "C" or better is required in this course.

Courses noted with FL or SP are only offered in those semesters. Biology, Chemistry, and Math placement can alter this sequence.

## BS in Exercise Science, Pre-Medical Professions (Pre-Medicine)

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
HHS 1000	Health And Human Services/College Orientation	1
MATH 1340	College Algebra And Trigonometry	5
Hours		16

**Second Term**

BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
EXSC 1700	Intro to Exercise Science <sup>1</sup>	2
Hours		15

**Third Term**

CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
ENGL 2950	Science And Technical Report Writing	3
EXSC 2510	Human Anatomy <sup>1</sup>	3
EXSC 2520	Human Anatomy Lab <sup>1</sup>	1
HEAL 1800	Medical Terminology	3
PSY 1010	Principles Of Psychology	3
Hours		17

**Fourth Term**

CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
PSY 2510	Lifespan Developmental Psychology	3
EXSC 2530	Human Physiology <sup>1</sup>	3
EXSC 2540	Human Physiology Lab <sup>1</sup>	1
EXSC 2590	Microbiology and Infectious Diseases	3
Hours		14

**Fifth Term**

CHEM 3510	Biochemistry I (FL)	3
EXSC 3580	Human Pathophysiology	3
PHYS 2070	General Physics I (FL)	5
RESM 4100	Educational Statistics	3
Hours		14

**Sixth Term**

COMM 2840	Interpersonal Communication	3
EXSC 3520	Applied Exercise Physiology <sup>1</sup>	3
EXSC 3530	Applied Exercise Physiology Laboratory <sup>1</sup>	1
EXSC 3950	Research Design in Exercise Science (SP)	3
PHYS 2080	General Physics II (SP)	5
Hours		15

**Seventh Term**

EXSC 3850	Cardiac Dysrhythmia Interpretation (FL) <sup>1</sup>	3
EXSC 3860	Cardiac Dysrhythmia Lab (FL) <sup>1</sup>	1
EXSC 4540	Applied Biomechanics	3
EXSC 4550	Applied Biomechanics Lab	1
Arts/Humanities Core		3
Diversity of US		3
Hours		14

**Eighth Term**

HEAL 4700	Nutritional Science	3
EXSC 4850	Clinical Exercise Testing (SP)	3
EXSC 4860	Clinical Exercise Testing Lab (SP)	1
PHIL 3370	Medical Ethics	3
Social Sciences Core (Non-US Diversity)		3
Elective		2
Hours		15
Total Hours		120

<sup>1</sup> A "C" or better is required in this course.

Courses noted with FL or SP are only offered in those semesters. Please be aware that requirements for medical school may vary. It is your responsibility to make sure that you have completed all prerequisites for the programs in which you intend to apply. Biology, Chemistry, and Math placement can alter this sequence.

## BS in Exercise Science, Pre-Medical Professions (Pre-Physician Assistant)

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
HHS 1000	Health And Human Services/College Orientation	1
MATH 1340	College Algebra And Trigonometry	5
Hours		16
<b>Second Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
EXSC 1700	Intro to Exercise Science <sup>1</sup>	2
Hours		15
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
ENGL 2950	Science And Technical Report Writing	3
EXSC 2510	Human Anatomy <sup>1</sup>	3
EXSC 2520	Human Anatomy Lab <sup>1</sup>	1

HEAL 1800	Medical Terminology	3
PSY 1010	Principles Of Psychology	3
Hours		17

**Fourth Term**

EXSC 2530	Human Physiology <sup>1</sup>	3
EXSC 2540	Human Physiology Lab <sup>1</sup>	1
PSY 2510	Lifespan Developmental Psychology	3
Pre-Med Professions Elective		3
Pre-Med Professions Elective		3
Pre-Med Professions Elective		3
Hours		16

**Fifth Term**

BIOL 3030	Cell Biology	3
PHIL 3370	Medical Ethics	3
PHYS 2070	General Physics I (FL)	5
Pre-Med Professions Elective		3
Hours		14

**Sixth Term**

BIOL 4030	Microbiology (SP)	3
BIOL 4040	Microbiology Laboratory (SP)	1
COMM 2840	Interpersonal Communication	3
EXSC 3520	Applied Exercise Physiology <sup>1</sup>	3
EXSC 3530	Applied Exercise Physiology Laboratory <sup>1</sup>	1
RESM 4100	Educational Statistics	3
Hours		14

**Seventh Term**

EXSC 4540	Applied Biomechanics	3
EXSC 4550	Applied Biomechanics Lab	1
Arts/Humanities Core (Diversity of US)		3
Pre-Med Professions Elective		3
Pre-Med Professions Elective		3
Hours		13

**Eighth Term**

HEAL 4700	Nutritional Science	3
Non-US Diversity		3
Social Sciences Core		3
Pre-Med Professions Elective		3
Pre-Med Professions Elective		3
Hours		15
Total Hours		120

<sup>1</sup> A "C" or better is required in this course.

Courses noted with FL or SP are only offered in those semesters. Please be aware that requirements for graduate school for Physician Assistant may vary. It is your responsibility to make sure that you have completed all prerequisites for the programs in which you intend to apply. Biology, Chemistry, and Math placement can alter this sequence.

## BS in Exercise Science, Pre-Rehabilitation Sciences

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
EXSC 1700	Intro to Exercise Science <sup>1</sup>	2
HHS 1000	Health And Human Services/College Orientation	1
MATH 1340	College Algebra And Trigonometry	5
Arts/Humanities Core		3
Hours		16
<b>Second Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
ENGL 1110	College Composition I	3
PSY 1010	Principles Of Psychology	3
Pre-Rehab Sci Elective		3
Hours		14
<b>Third Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
ENGL 2950	Science And Technical Report Writing	3
EXSC 2510	Human Anatomy <sup>1</sup>	3
EXSC 2520	Human Anatomy Lab <sup>1</sup>	1
Social Sciences Core		3
Hours		15
<b>Fourth Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
EXSC 2530	Human Physiology <sup>1</sup>	3
EXSC 2540	Human Physiology Lab <sup>1</sup>	1
HEAL 1800	Medical Terminology	3
Diversity of US		3
Hours		15
<b>Fifth Term</b>		
EXSC 3520	Applied Exercise Physiology <sup>1</sup>	3
EXSC 3530	Applied Exercise Physiology Laboratory <sup>1</sup>	1
PHYS 2070	General Physics I (FL)	5
RCRT 4900	Seminar In Recreation And Leisure	3
Select one of the following		3
PSY 2510	Lifespan Developmental Psychology	
PSY 2700	Social Psychology	

PSY 2200	Abnormal Psychology	
Hours		15
<b>Sixth Term</b>		
COMM 2840	Interpersonal Communication	3
or COMM 1010 or Comm Principles And Practices		
EXSC 3580	Human Pathophysiology	3
PHYS 2080	General Physics II (SP)	5
Pre-Rehab Sci Elective		3
Hours		14
<b>Seventh Term</b>		
EXSC 4540	Applied Biomechanics	3
EXSC 4550	Applied Biomechanics Lab	1
RESM 4100	Educational Statistics	3
Pre-Rehab Sci Elective		3
Pre-Rehab Sci Elective		3
Pre-Rehab Sci Elective		3
Hours		16
<b>Eighth Term</b>		
EXSC 4640	Neurological And Pathological Foundations Of Rehabilitation	3
HEAL 4700	Nutritional Science	3
Pre-Rehab Sci Elective		3
Pre-Rehab Sci Elective		3
Non-US Diversity		3
Hours		15
Total Hours		120

<sup>1</sup> A grade of "C" or better is required in this course.

Courses noted with FL or SP are only offered in those semesters. Biology, Chemistry, and Math placement can alter this sequence. Please be aware that requirements for graduate school for Physical Therapy, Athletic Training, and Occupational Therapy may vary. It is your responsibility to make sure that you have completed all prerequisites for the programs in which you intend to apply.

## BS in Recreation Therapy

The University of Toledo offers a bachelor of science degree in recreation therapy (RECT). This degree requires 125 credit hours for graduation. The baccalaureate RECT program is the only undergraduate recreation therapy program in the State of Ohio and is accredited by the Council on Accreditation of Parks, Recreation, Tourism and Related Professions (COAPRT). This program meets professional standards set by the National Council for Therapeutic Recreation Certification (NCTRC) and the American Therapeutic Recreation Association (ATRA).

Students enrolling in the recreation therapy program receive an education designed to prepare them for employment in the areas of physical rehabilitation, psychiatric rehabilitation, geriatric services, pediatric services, camps for individuals with disabilities, community recreation for individuals with disabilities, and centers for intellectual deficits/developmental disabilities. Specialized tracks are available in psychology,

pediatric, geriatric, communication, therapeutic arts and pre-occupational therapy.

The pre-occupational therapy track can provide the student with the background needed for application to graduate degree programs in occupational therapy. Requirements for occupational therapy graduate programs vary. It is the student's responsibility to complete all prerequisites for the graduate programs to which he or she plans to apply.

Students graduating from the RECT program will have met the educational and clinical eligibility requirements to sit for the Certified Therapeutic Recreation Specialist (CTRS) examination as administered by the National Council for Therapeutic Recreation Certification.

Students wishing to major in the recreation therapy program complete a pre-professional course sequence their freshman and sophomore years consisting of undergraduate core curriculum courses, pre-recreation therapy curriculum courses and recreation therapy support courses. Upon acceptance into the professional sequence entering their junior year, students complete 46 credit hours of recreation therapy-specific coursework followed by a 15-credit hour, 560-clock hour internship the summer of their senior year.

## Requirements

- Current certification in CPR.
- Immunizations: Mantoux, Rubella Titer/ Roseolla (MMR), Hepatitis B required. Additional immunizations may be required by internship agency.
- Background checks: May be required by internship agency.
- Physical requirements: "Fit for Duty" test may be required internship agency.
- Transportation: Students must provide their own transportation to internship site.
- Summer classes are required after the junior and senior years. Students graduate in August.

## Bachelor of Science in Recreation Therapy

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
HHS 1000	Health And Human Services/College Orientation	1
MATH 1180	Reasoning With Mathematics	3
PSY 1010	Principles Of Psychology <sup>1</sup>	3
RCRT 1300	Introduction To Recreation And Leisure Studies <sup>1</sup>	3
SOC 1010	Introduction To Sociology	3
Hours		16
<b>Second Term</b>		
ENGL 2960	Professional and Business Writing	3
PSY 2510	Lifespan Developmental Psychology <sup>1</sup>	3
RCRT 1310	Recreation Programming <sup>1</sup>	3

Natural Sciences Core		3
Hours		12
<b>Third Term</b>		
EXSC 1560	Fundamentals of Anatomy and Physiology <sup>1</sup>	3
EXSC 1460	Fundamentals of Anatomy and Physiology Lab <sup>1</sup>	1
PSY 2200	Abnormal Psychology <sup>1</sup>	3
Arts/Humanities Core (Non-US Diversity)		3
Core Elective		3
Hours		13
<b>Fourth Term</b>		
HEAL 1800	Medical Terminology <sup>1</sup>	3
HEAL 2500	Personal Health <sup>1</sup>	3
RCRT 3310	Inclusive Recreation <sup>1</sup>	3
RCRT 4720	Introduction To Therapeutic Recreation <sup>1</sup>	3
Arts/Humanities Core		3
Hours		15
<b>Fifth Term</b>		
RCRT 4000	Community Event Planning <sup>1</sup>	3
RCRT 4730	Medical And Clinical Aspects Of Therapeutic Recreation <sup>1</sup>	3
RCRT 4740	Assessment And Documentation In Therapeutic Recreation <sup>1</sup>	3
Diversity of US		3
Select 3 of the following: <sup>1</sup>		3
RCRT 4600	Therapeutic Arts	
RCRT 4610	Rt Intervention: Horticulture Therapy	
RCRT 4620	Animal Assisted Therapy	
RCRT 4630	Therapeutic Activities	
RCRT 4640	Rt Intervention: Therapeutic Groups	
RCRT 4660	Relaxation And Stress Management	
RCRT 4670	Rt Intervention: Leisure Education	
RCRT 4680	Rt Intervention: Assistive Technology And Techniques	
RCRT 4690	Rt Intervention: Aquatic Therapy	
RCRT 4860	Therapeutic Fitness	
Hours		15
<b>Sixth Term</b>		
RCRT 4340	Leisure Recreation And Aging <sup>1</sup>	3
RCRT 4750	Group Dynamics In Recreational Therapy <sup>1</sup>	3
RCRT 4790	Medical & Clinical Aspects In Therapeutic Recreation II <sup>1</sup>	3
Select 3 of the following: <sup>1</sup>		3
RCRT 4600	Therapeutic Arts	
RCRT 4610	Rt Intervention: Horticulture Therapy	
RCRT 4620	Animal Assisted Therapy	
RCRT 4630	Therapeutic Activities	
RCRT 4640	Rt Intervention: Therapeutic Groups	
RCRT 4660	Relaxation And Stress Management	

RCRT 4670	Rt Intervention: Leisure Education	
RCRT 4680	Rt Intervention: Assistive Technology And Techniques	
RCRT 4690	Rt Intervention: Aquatic Therapy	
RCRT 4860	Therapeutic Fitness	
Hours		12

**Seventh Term****Summer**

RCRT 4840	Clinical: Pediatric <sup>1</sup>	1
RCRT 4800	Clinical: Physical Rehabilitation <sup>1</sup>	1
Hours		2

**Eighth Term**

RCRT 3710	Leadership and Administration In Outdoor Pursuits <sup>1</sup>	3
RCRT 4450	Research Applications In Recreation And Recreational Therapy <sup>1</sup>	3

Track Elective		3
Select 1 or 2 of the following: <sup>1</sup>		2

RCRT 4810	Clinical: Psychiatric Rehabilitation	
RCRT 4820	Clinical: Intellectual Deficit/Developmental Disability	

RCRT 4830	Clinical: Geriatric	
Select 2 of the following: <sup>1</sup>		2

RCRT 4600	Therapeutic Arts	
RCRT 4610	Rt Intervention: Horticulture Therapy	
RCRT 4620	Animal Assisted Therapy	
RCRT 4630	Therapeutic Activities	
RCRT 4640	Rt Intervention: Therapeutic Groups	
RCRT 4660	Relaxation And Stress Management	
RCRT 4670	Rt Intervention: Leisure Education	
RCRT 4680	Rt Intervention: Assistive Technology And Techniques	
RCRT 4690	Rt Intervention: Aquatic Therapy	
RCRT 4860	Therapeutic Fitness	

Hours		13
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**Ninth Term**

RCRT 4330	Administration In Recreation And Recreational Therapy <sup>1</sup>	3
RCRT 4850	Internship Preparation <sup>1</sup>	1
RCRT 4870	Program Planning In Recreational Therapy <sup>1</sup>	3

Track Elective		3
Select 1 or 2 of the following: <sup>1</sup>		1

RCRT 4810	Clinical: Psychiatric Rehabilitation	
RCRT 4820	Clinical: Intellectual Deficit/Developmental Disability	

RCRT 4830	Clinical: Geriatric	
Select 2 of the following: <sup>1</sup>		2

RCRT 4600	Therapeutic Arts	
RCRT 4610	Rt Intervention: Horticulture Therapy	

RCRT 4620	Animal Assisted Therapy	
RCRT 4630	Therapeutic Activities	
RCRT 4640	Rt Intervention: Therapeutic Groups	
RCRT 4660	Relaxation And Stress Management	
RCRT 4670	Rt Intervention: Leisure Education	
RCRT 4680	Rt Intervention: Assistive Technology And Techniques	
RCRT 4690	Rt Intervention: Aquatic Therapy	
RCRT 4860	Therapeutic Fitness	
Hours		13

**Tenth Term****Summer**

RCRT 4770	Project Design <sup>1</sup>	2
RCRT 4780	Project Evaluation <sup>1</sup>	2
RCRT 4950	Recreation Therapy Internship I <sup>1</sup>	5
RCRT 4960	Recreation Therapy Internship II <sup>1</sup>	5
Hours		14
Total Hours		125

<sup>1</sup> A "C" or better is required in this course.

## BS in Registered Respiratory Therapy

The University of Toledo offers a bachelor of science in respiratory care degree (RRT to BSRT). This degree requires 124 credit hours for graduation. The RRT to BSRT degree completion program is designed for individuals who have completed an associate's degree in respiratory care and have earned the Registered Respiratory Therapist (RRT) credential granted by the National Board for Respiratory Care. The program includes upper division respiratory care courses and allows for student selection of an area of specialization to enhance professional growth. In addition, professional support courses encompass many issues in health care and health education that are relevant to the practicing professional.

It is suggested that individuals interested in pursuing this option meet with the Program Director and an academic advisor in the Office of Student Services prior to applying to have coursework evaluated for transfer credit to the university.

To complete the RRT to BSRT degree, a student must take 124 semester hours and maintain a minimum GPA of 2.0 at the University of Toledo. A minimum of 64 hours must be taken at the 2000 to 4000 levels, with a minimum of 32 hours at the 3000 and 4000 levels.

Code	Title	Hours
<b>Core Curriculum Courses</b>		
Select 42 hours of University Core Curriculum courses		42
<b>Lower Division Professional Courses</b>		
Select 30-35 hours of Lower Division Professional courses		30-35
<b>Upper Division Professional Courses</b>		
<i>Required Professional Courses</i>		
RCBS 4160	Clinical Assessment	3
RCBS 3300	Advanced Cardiac Life Support	1
RCBS 4700	Research Analysis In Respiratory Care	3



**Area of Specialization**

Select a minimum of 6 hours of the following: 6

RCBS 4150	Neonatal/Pediatric Respiratory Care
RCBS 3230	Cardiopulmonary Diagnostics II
RCBS 4510	Respiratory Care in Alternate Sites
RCBS 4800	Issues In Professional Practice

**Professional Support Courses**

HCAR 4360	Quality Improvement In Health Care	3
HCAR 4530	Problem Solving In Health Care Environment	4
HCAR 4510	Medical And Legal Aspects Of Health Care	3
HCAR 4550	Health Care Finance	3
PHIL 3370	Medical Ethics	3

**Professional Support Electives**

Select 6 hours of the following: 6

HEAL 3500	Environmental Health
HEAL 3800	Death And Dying
HEAL 4560	Health Problems Of Aging
HEAL 4700	Nutritional Science
HEAL 4800	Public Health Research And Statistics

**General Electives**

Select 17 hours of General Electives 17

Total Hours 124-129

## BS in Respiratory Care

The University of Toledo offers a bachelor of science degree in respiratory care. This degree requires 120 credit hours for graduation. Respiratory care is an allied health specialty. Respiratory care practitioners work with physicians in the treatment, management, control, diagnostic evaluation and care of patients with diseases and abnormalities associated with the cardiopulmonary system.

Respiratory therapists treat a diverse group of patients ranging from newborn and pediatric patients to adults and the elderly. Disease states or conditions often requiring care include asthma, emphysema, chronic obstructive pulmonary disease (COPD), pneumonia, cystic fibrosis, acute and infantile respiratory distress syndrome as well as conditions brought on by shock, trauma or post-operative surgical complications. Respiratory therapists function in many specialty areas in the hospital, such as newborn labor and delivery, neonatal and pediatric intensive care units, pulmonary function laboratory, sleep laboratory and adult intensive care units. The baccalaureate degree prepares respiratory therapists to deliver respiratory care in the hospital, home and alternative care sites.

The student completing the Bachelor of Science in respiratory care degree program will be an advanced-level practitioner eligible to sit for the national board examination to become a Registered Respiratory Therapist (RRT) as well as take specialty examinations in the areas of Perinatal/Pediatrics, Adult Critical Care, Sleep Disorders and Pulmonary Function Technology.

For additional information please visit the Respiratory Care Website at <http://www.utoledo.edu/hhs/respiratorycare/>

## Selective Admissions Requirements

Admission into the Professional Division of the Respiratory Care Program is selective, competitive and limited due to the number of students who can be accommodated by the faculty and clinical facilities. Once accepted to the University, students must file a separate application for the respiratory care program with the program selective admissions committee through the Office of Student Services. This occurs during the second semester of the sophomore year. Students admitted to the Professional Division are required to take summer courses to start the program.

To be eligible for admission to the Professional Division of the Respiratory Care Program the criteria listed below must be met.

- Complete the following courses (or their equivalent or higher) with a grade of C or better:

Code	Title	Hours
ENGL 1110	College Composition I	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1320	College Algebra	3
CHEM 1120	Chemistry For Health Sciences	4
EXSC 2560	Anatomy and Physiology I	3
EXSC 2460	Human Anatomy And Physiology I Lab	1
EXSC 2570	Human Anatomy and Physiol II	3
EXSC 2470	Human Anatomy And Physiology II Lab	1
EXSC 2590	Microbiology and Infectious Diseases	3
HEAL 1800	Medical Terminology	3
Total Hours		27

- Minimum cumulative GPA of 2.5
- In addition to cumulative GPA, the student's GPA in the following courses fulfilling the math and science prerequisite course requirements will be evaluated separately from overall GPA:

Code	Title	Hours
MATH 1320	College Algebra	3
CHEM 1120	Chemistry For Health Sciences	4
EXSC 2560	Anatomy and Physiology I	3
EXSC 2460	Human Anatomy And Physiology I Lab	1
EXSC 2570	Human Anatomy and Physiol II	3
EXSC 2470	Human Anatomy And Physiology II Lab	1
EXSC 2590	Microbiology and Infectious Diseases	3

- Admission to the Professional Division is based primarily upon the overall GPA and the GPA in math and science prerequisite classes.

The Respiratory Care Program complies with the American with Disabilities Act (ADA). If a student is unable to meet the required "Functional Abilities/Core Performance Standards," the student may consult with program faculty and with an Accessibility Specialist from The University of Toledo Student Disability Services to determine, on a case by case basis, if reasonable accommodations can be made that would permit the student to meet these "Functional Abilities/Core Performance Standards" and thus enter into the program. For a list of "Functional Abilities/Core Performance Standards" please refer to the

following website: <http://www.utoledo.edu/hhs/respiratorycare/pdfs/Functional%20Abilities%202019.pdf>

Other requirements for entry in the Professional Division Program include completion of the following:

- Physical exam form and Fit for Duty Form
- Positive Hepatitis B antibody titer or evidence of completion of 3-shot Hepatitis B vaccination series
- Positive antibody titers for Rubella, Rubeola, Mumps, and Varicella. If titers are not positive, vaccination must be completed
- Tuberculosis 2-step skin test (yearly). If positive, must have negative chest x-ray
- Evidence of tetanus and diphtheria vaccination within last 10 years
- Annual multivalent flu vaccination

Below is a sample program of study. Consult your degree audit for your program requirements.

## Bachelor of Science in Respiratory Care

Course	Title	Hours
<b>First Term</b>		
CHEM 1120	Chemistry For Health Sciences <sup>1</sup>	4
ENGL 1110	College Composition I <sup>1</sup>	3
HEAL 1800	Medical Terminology <sup>1</sup>	3
HHS 1000	Health And Human Services/College Orientation	1
MATH 1320	College Algebra <sup>1</sup>	3
Hours		14
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse <sup>1</sup>	3
EXSC 2560	Anatomy and Physiology I <sup>1</sup>	3
EXSC 2460	Human Anatomy And Physiology I Lab <sup>1</sup>	1
PHIL 1020	Critical Thinking	3
PSY 1010	Principles Of Psychology	3
Arts/Humanities Core		3
Hours		16
<b>Third Term</b>		
EXSC 2570	Human Anatomy and Physiol II <sup>1</sup>	3
EXSC 2470	Human Anatomy And Physiology II Lab <sup>1</sup>	1
HEAL 3800	Death And Dying	3
MATH 2600	Introduction To Statistics	3
Diversity of US		3
Hours		13
<b>Fourth Term</b>		
EXSC 2590	Microbiology and Infectious Diseases <sup>1</sup>	3
HEAL 4700	Nutritional Science	3
PHIL 3370	Medical Ethics	3
Social Sciences Core		3
Non-US Diversity		3
Hours		15

### Fifth Term

<b>Summer</b>		
RCBS 3010	Respiratory Care Fundamentals <sup>1</sup>	4
RCBS 3020	Respiratory Care Practice I <sup>1</sup>	4
Hours		8

### Sixth Term

RCBS 3110	Respiratory Care Therapeutics I <sup>1</sup>	4
RCBS 3120	Respiratory Care Practice II <sup>1</sup>	7
RCBS 3130	Cardiopulmonary Diagnostics I <sup>1</sup>	4
Hours		15

### Seventh Term

RCBS 3210	Respiratory Care Therapeutics II <sup>1</sup>	4
RCBS 3220	Respiratory Care Practice III <sup>1</sup>	7
RCBS 3230	Cardiopulmonary Diagnostics II <sup>1</sup>	3
Hours		14

### Eighth Term

RCBS 4140	Integrated Clinical Practice I <sup>1</sup>	4
RCBS 4150	Neonatal/Pediatric Respiratory Care <sup>1</sup>	4
RCBS 4160	Clinical Assessment <sup>1</sup>	3
RCBS 4700	Research Analysis In Respiratory Care <sup>1</sup>	3
Hours		14

### Ninth Term

RCBS 3300	Advanced Cardiac Life Support <sup>1</sup>	1
RCBS 4240	Integrated Clinical Practice II <sup>1</sup>	3
RCBS 4510	Respiratory Care in Alternate Sites <sup>1</sup>	3
RCBS 4800	Issues In Professional Practice <sup>1</sup>	3
RCBS 4810	Preparation For Professional Practice <sup>1</sup>	1
Hours		11
Total Hours		120

<sup>1</sup> A "C" or better is required in this course.

## Minor in Exercise Science

A minor in exercise science provides students from other departments across the University with the opportunity to gain experience in this area. The minor requires 24 credits of course work, including required lecture and lab courses in human anatomy, physiology, exercise physiology, and biomechanics as well as elective courses taken from a variety of areas within exercise science. Students interested in completing the minor in exercise science should contact the program academic advisor for additional information.

Code	Title	Hours
<b>Required Course</b>		
EXSC 1700	Intro to Exercise Science <sup>1</sup>	2
EXSC 2510	Human Anatomy <sup>12</sup>	3
EXSC 2520	Human Anatomy Lab <sup>12</sup>	1
EXSC 2530	Human Physiology <sup>12</sup>	3
EXSC 2540	Human Physiology Lab <sup>12</sup>	1
EXSC 3520	Applied Exercise Physiology <sup>1</sup>	3
EXSC 3530	Applied Exercise Physiology Laboratory <sup>1</sup>	1

EXSC 4540	Applied Biomechanics	3
EXSC 4550	Applied Biomechanics Lab	1
<b>Electives</b>		
Select 6 hours of the following:		6
EXSC 2580	Human Pathophysiology For Health Care	3
EXSC 2590	Microbiology and Infectious Diseases	3
EXSC 3240	Concepts of Exercise Fitness and Health Strategies	3
EXSC 3680	Sport and Exercise Pharmacology	3
EXSC 3850	Cardiac Dysrhythmia Interpretation (FL) <sup>1</sup>	3
EXSC 3860	Cardiac Dysrhythmia Lab (FL) <sup>1</sup>	1
EXSC 4850	Clinical Exercise Testing (SP)	3
EXSC 4860	Clinical Exercise Testing Lab (SP)	1
EXSC 4900	Human Performance Seminar	1-3

<sup>1</sup> A "C" or better required in this course.

<sup>2</sup> Courses may be substituted if the student has successfully completed comparable anatomy and physiology course work in another department within or outside The University of Toledo.

Courses noted with FL or SP are only offered in those semesters. Students will be required to meet all of the prerequisites and co-requisites for the elective courses in the minor.

## School of Intervention & Wellness

Christopher Roseman, Chair

Caroline Menezes, Speech-Language Pathology Program Director

### Mission

The mission of the School of Intervention and Wellness is to foster excellence in the next generation of helping professionals, at all entries of practice, through collaborative, innovative, and experiential learning, research, and service activities. This is accomplished by engaging the community through deliberate intervention and advocacy to advance the quality of life for the individuals we serve.

The School of Intervention and Wellness offers an undergraduate degree program in speech-language pathology, a minor in counseling, and an undergraduate certificate in chemical dependency counseling.

### Degrees Offered

- BS in Speech Language Pathology (p. 311)
- Certificate in Chemical Dependency Counseling (p. 313)
- Minor in Counseling (p. 313)

#### COUN 1110 Fundamentals Of Human Mental Health

[4 credit hours]

An introduction to the field of human services, especially mental health, history and current trends in treatment and prevention of disease and the basic skills common to the field. Students will learn skills at the demonstrable level as they will later be used in the field.

**Term Offered:** Spring, Fall

#### COUN 1210 Mental Health Skills

[4 credit hours]

This course is designed to enable students to master the therapeutic interpersonal skills required of mental health professionals. Successful completion of this course is a requirement for continuation into advanced courses.

**Prerequisites:** (COUN 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-) or (CMHS 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-)

#### COUN 1220 Theories In Mental Health

[3 credit hours]

An overview of current approaches of psychological theory. This course includes an examination of the basic issues in mental health, including ethical issues and personal implications for the mental health professional.

**Prerequisites:** (COUN 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-) or (CMHS 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-)

#### COUN 1230 Pathology In Mental Health

[3 credit hours]

This course deals with an introduction to the concepts of abnormal psychology with emphasis on understanding the cultural and historical bases for defining abnormality as well as modern classification systems, the biological model, treatment modalities and theoretical perspectives.

**Prerequisites:** PSY 1010 with a minimum grade of D-

#### COUN 1240 Substance Abuse Issues In Mental Health

[3 credit hours]

An overview and survey of addictive disorders, use and abuse, and the personal and cultural effects of chemical dependency.

**Term Offered:** Spring, Fall

#### COUN 2060 Career Exploration

[3 credit hours]

Designed for the university student undecided about a career. The student is assisted in self-assessment, exploration of occupations and in career decision-making skills.

#### COUN 2120 Group And Therapeutic Approaches

[4 credit hours]

A study of various types of groups and activity skills used in mental health environments both inpatient and community based. Focus on design, principles, procedures and applications of various techniques.

**Term Offered:** Fall

#### COUN 2130 Assessment And Intervention In Mental Health

[4 credit hours]

The various techniques and requirements of assessment and interventions used in the most important mental health environments will be explored and practiced. Special emphasis is placed on interview assessment and crisis intervention; implications for record keeping in the variety of settings are also examined.

**Prerequisites:** PSY 1010 with a minimum grade of D-

#### COUN 2220 Family Theories And Cultural Influences In Mental Health

[3 credit hours]

Study of basic family systems and structures and the influences of cultural patterns as they interact and impact the mental health and therapeutic needs of individual family members.

**Term Offered:** Spring

**COUN 2940 Mental Health Internship**

[4 credit hours]

Students are placed in community agencies relevant to mental health and work in a role related to the function of a mental health technician under the guidance of a supervisor.

**Prerequisites:** COUN 1210 with a minimum grade of B or CMHS 1210 with a minimum grade of B

**COUN 2980 Special Topics In Counselor Education**

[1-3 credit hours]

This course is open to an undergraduate student pursuing a degree program and may be a requirement of that program.

**COUN 2990 Independent Study**

[1-3 credit hours]

A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

**COUN 3070 Family Counseling**

[3 credit hours]

Overview of aspects of counseling with families. Major focus is on family as a system and a variety of interventions. Ethnic, gender and socioeconomic considerations of family systems will be stressed.

**COUN 3110 Case Management In Mental Health**

[3 credit hours]

The study of and practice of using case management models and skills with clients within the mental health environment. Models appropriate for different agency types will be explored and the various modalities available will be introduced.

**Term Offered:** Spring

**COUN 3120 Mental Retardation And Mental Health**

[3 credit hours]

The relationship between retardation and mental health with emphasis on the characteristics making this a population of special concern within the treatment protocols of the mental health profession.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 3130 Advanced Interventions: Crisis And Employee Assistance Programs**

[3 credit hours]

Advanced intervention issues including crisis management, disaster survival, rescue and emergency personnel debriefing and Employee Assistance Programs.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 3140 Substance Abuse Prevention And Community Programming**

[3 credit hours]

An evaluation of prevention programs and community resources available in the prevention and treatment of substance abuse.

**Term Offered:** Fall

**COUN 3150 Models Of Treatment For Substance Abuse**

[3 credit hours]

A review of the various components of substance abuse and philosophies of treatment. Theories of etiology and maintenance are also addressed.

**Term Offered:** Spring

**COUN 3160 Charting And Reporting In The Mental Health Professions**

[3 credit hours]

The importance of coding, charting and record keeping in various fields of mental health professions is examined. Various types of report writing formats and requirements will be learned.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 3220 Theories in Mental Health**

[3 credit hours]

Overview of current approaches of psychological theory. This course includes an examination of the basic issues in mental health, including ethical issues and personal implications for the mental health professional.

**Term Offered:** Fall

**COUN 3230 Pathology in Mental Health**

[3 credit hours]

Introduction to the concepts of psychopathology with emphasis on understanding the cultural and historical bases for defining abnormality, modern classification systems, the biological model, treatment modalities and theoretical perspectives.

**COUN 3380 College Student Leadership Development I**

[1-3 credit hours]

First semester in development of skills for student leaders through didactic experience, simulation exercises and practicum experiences. Especially designed for student government leaders and peer counselor/advisers.

**Term Offered:** Fall

**COUN 3390 College Student Leadership Development II**

[1-3 credit hours]

Second semester in student leadership training. The development of skills for student leaders through didactic experience, simulation exercises and practicum experiences. Especially designed for student government leaders and peer counselor/advisers.

**Prerequisites:** COUN 3380 with a minimum grade of D- or CMHS 3380 with a minimum grade of D-

**Term Offered:** Spring

**COUN 3940 Substance Abuse Internship**

[4 credit hours]

Students are placed in community agencies working in the area of substance abuse under the guidance of a supervisor.

**Prerequisites:** (COUN 2940 with a minimum grade of B and COUN 4240 with a minimum grade of B and COUN 4940 with a minimum grade of B ) or (CMHS 2940 with a minimum grade of B and CMHS 4240 with a minimum grade of B and CMHS 4940 with a minimum grade of B )

**COUN 4080 Essentials Of Helping Relationships**

[3 credit hours]

Emphasis upon skills, concepts and practices in the helping professions. Multicultural and ethical issues along with dealing with crisis situations will be covered.

**COUN 4090 Therapeutic Environments For The Aged**

[3 credit hours]

This course focuses on therapeutic care giving for the aged in institutional settings, addressing techniques for developing activities and responding to sensory changes and social needs of individuals.

**COUN 4110 Consultation And Supervision In Mental Health Services**

[3 credit hours]

Explores the roles and techniques of consultation and supervision within the mental health professions, including individual and group skills, models, strategies and legal and ethical issues.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 4120 Dual Diagnosis: Substance Abuse And Mental Illness**

[3 credit hours]

Issues involving clients with a dual diagnosis are explored. Specific treatment strategies for clients dually-diagnosed with substance abuse and mental illness will be learned.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 4240 Substance Abuse Treatment Techniques**

[3 credit hours]

An examination of ethical and legal issues in substance abuse, as well as examination of the specific skills needed by workers in substance abuse programs.

**Term Offered:** Spring

**COUN 4580 Teacher As Advisor**

[3 credit hours]

Introduction to group process, interpersonal and communication skills for teachers in the middle school. Introduction to consultation and collaboration skills for working with counselors, teachers, parents and other resource personnel.

**Prerequisites:** Upper Division with a score of 1

**COUN 4940 Advanced Internship**

[4 credit hours]

Students are placed in community agencies relevant to mental health and work in a role related to the function of an advanced level mental health technician under the guidance of a supervisor.

**Prerequisites:** (COUN 2940 with a minimum grade of B and COUN 3110 with a minimum grade of B ) or (CMHS 2940 with a minimum grade of B and CMHS 3110 with a minimum grade of B )

**COUN 4980 Special Topics In Counselor Education**

[1-3 credit hours]

This course is open to an undergraduate student pursuing a degree program and may be a requirement of that program.

**COUN 4990 Independent Study**

[1-3 credit hours]

Individual study is designed to provide the student to work independently on professional problems under the direction of a faculty member in the department of counseling and mental health services.

**SLP 2400 Communication Disorders**

[3 credit hours]

A study of causative factors and characteristics of communicative disorders in comparison to normal speech/language/hearing processes.

**Term Offered:** Spring, Fall

**SLP 3010 Clinical Phonetics**

[0-4 credit hours]

Understanding of articulatory and acoustic phonetics with emphasis on the development of transcription skills using the International Phonetic Alphabet in recording normal and disordered speech production. Laboratory required for transcription skill development.

**Term Offered:** Spring, Fall

**SLP 3020 Anatomy And Physiology Of Communication Mechanisms**

[0-4 credit hours]

The study of the anatomy and physiology of the mechanisms used for communication including oral-pharyngeal-esophageal, respiratory, and neurological systems.

**Term Offered:** Spring, Fall

**SLP 3030 Normal Language Acquisition**

[0-4 credit hours]

Presents basic theories of language acquisition and procedures to describe the developmental sequence of childhood language. Procedures and techniques for analyzing childhood language are introduced and practiced in laboratory experiences.

**Term Offered:** Spring, Fall

**SLP 3150 Speech and Hearing Science**

[0-4 credit hours]

A detailed exploration of the speech and language production system, as well as the hearing mechanism with relation to the auditory environment. Information on aerodynamic and acoustic parameters of speech, the anatomy and physiology of the speech and hearing mechanisms, the neural basis of speech/language/hearing, and the speech perception system is provided during this course. The course is designed with lab experiences so students can get hands-on practice.

**Term Offered:** Spring, Fall

**SLP 3200 Articulation/Phonological Disorders**

[0-4 credit hours]

Assessment techniques and intervention strategies for persons with disorders of the sound system of the language. Theories of phonological acquisition and etiological factors will be discussed during this course. Laboratory experience required.

**Prerequisites:** SLP 3010 with a minimum grade of D- and SLP 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

**SLP 3300 Language Disorders**

[0-4 credit hours]

Course includes the identification of etiologic bases and characteristics of language disorders. Assessment strategies leading to choice of intervention techniques will be discussed. Laboratory experience required.

**Prerequisites:** SLP 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**SLP 3400 Clinical Audiology**

[3 credit hours]

The student learns to administer and interpret the comprehensive auditory battery consisting of pure-tone air conduction and bone conduction thresholds, speech reception thresholds, speech discrimination tests and acoustic emittance test battery.

**Term Offered:** Spring, Fall



**SLP 3800 Methods For Clinical Intervention**

[3 credit hours]

Teaches methods of intervention of speech, language and hearing services in various settings. Emphasis on developing skills in observation, report writing, and structuring intervention services and their implementation. Requires 25 hours of observation. Mandatory clinic meeting, and one hour lab duty. Laboratory experience required.

**Prerequisites:** (SLP 3200 with a minimum grade of B- and SLP 3300 with a minimum grade of B-)

**Term Offered:** Spring, Fall

**SLP 4000 Beginning Clinical Practicum**

[2 credit hours]

Supervised participation in structured individual or group intervention leading to the accumulation of 25 clinical hours of practicum.

**Prerequisites:** SLP 3800 with a minimum grade of B-

**Term Offered:** Spring, Summer, Fall

**SLP 4350 Concomitant Disorders**

[3 credit hours]

This capstone course explores literature in advanced speech and language disorders as well as intervention communication disorders.

**Term Offered:** Spring

**SLP 4440 Augmentative Communication Systems**

[3 credit hours]

Technological systems available for persons with the absence of functional speech will be described. Etiological factors, assessment and intervention procedures and hands-on experience with devices will be provided.

**Term Offered:** Spring, Fall

**SLP 4910 Directed Research In Speech-Language Pathology**

[1-5 credit hours]

Directed research provides students the opportunity to explore specific topics and develop individual research with a faculty member. Current questions in the area of speech-language pathology will be the focus.

**Term Offered:** Spring, Fall

**SLP 4920 Readings In Speech-Language Pathology**

[1-5 credit hours]

Individual Readings is designed to provide students with opportunities to examine literature related to specific issues. The student works under the direction of faculty in the speech-language pathology program.

**SLP 4980 Special Topics In Speech-Language Pathology**

[1-5 credit hours]

An advanced course for undergraduate majors in speech-language pathology or majors in related fields covering an important area of communication disorders. Student may repeat this course under different section numbers.

**Term Offered:** Spring, Fall

**SLP 4990 Independent Study Speech-Language Pathology**

[1-5 credit hours]

Independent study provides students with opportunities to work individually on issues under the direction of the speech-language pathology program faculty. The student meets with instructor without formal classes.

**Term Offered:** Spring, Summer, Fall

**SPSY 3100 Psychological Testing and Assessment**

[3 credit hours]

This course provides an overview of the major topics in the field of psychological testing, such as norms, statistics, reliability, validity, test development, defining and measuring intelligence, educational assessment, personality assessment, and clinical assessment. The main objective of this course is to develop the student's knowledge about the variables, objectives, and effects of psychological testing.

After completing this course students will, understand terminology and concepts; list criteria for test selection; describe standardized tests and measurement techniques; discuss issues involved in testing.

**Prerequisites:** PSY 2100 with a minimum grade of D- or MATH 2600 with a minimum grade of D- or RESM 4100 with a minimum grade of D-

**Term Offered:** Spring, Fall

## BS in Speech Language Pathology

The University of Toledo offers a bachelor of science degree in speech-language pathology. The degree requires 120 credit hours for graduation. The program provides course work in communication disorders, which prepares the student for graduate work in speech-language pathology. The strengths of the program include supervised clinical experiences on the undergraduate level, undergraduate foundations in normal speech processes and language development and introductory courses in communication disorders. A master's degree is one of the requirements for licensure and certification as a speech-language pathologist.

The University of Toledo admits and matriculates qualified speech-language pathology students in accordance with the UToledo Policy of Nondiscrimination on the Basis of a Disability, The Americans with Disabilities Act, Section 504 of the Rehabilitation Act of 1973, The State of Ohio Revised Code, and other applicable statutes and regulations relating to equality of opportunity.

The Essential Functions provide information to allow a candidate to make an informed decision for application and are a guide to accommodation of students with disabilities. Academic adjustments can be made for disabilities in some instances, but a student must be able to perform the essential functions of a speech-language pathologist independently either with or without reasonable accommodation.

Many physical, behavioral and social, and cognitive and intellectual abilities are necessary for satisfactory mastery of the academic and clinical curriculum and professional responsibilities in the field of speech-language pathology.

- Essential physical abilities include, but are not limited to, the ability to visually monitor patient responses and materials and to make judgments about speech and acoustic signals.
- Examples of behavioral and social attributes include maintaining emotional and mental health necessary to use one's intellectual abilities, to promptly complete responsibilities, and to develop appropriate relationships with faculty, supervisors, staff, peers, clients, parents or caregivers, and other professionals.
- Essential cognitive and intellectual abilities include, among others, demonstrating the mental capacity to learn and assimilate professional information, including the ability to comprehend oral and written professional literature and reports; ability to write discipline-specific papers and clinical reports in Standard American

English; ability to speak Standard American English intelligibly and to discriminate correct production of and model Standard American English phonemes, vocabulary, grammatical forms, and prosodic patterns.

We urge applicants to ask questions about the program's technical standards for clarification and to determine whether they can meet the requirements with or without reasonable accommodations. Such questions may be directed to the Program Director or the Student Disability Center on campus.

Each student, while enrolled in the didactic and clinical portions of the speech-language pathology curriculum, is required to complete various immunizations:

- Positive MMR titers
- Positive Varicella titer
- Positive Hep B titer
- Hep B Vaccination Series
- Current Tdap
- 2-step Initial TB test
- and 1-step Annual TB test.

**Students are prohibited to engage in laboratory activities or to attend clinical facilities if this information is not on file for the current year.** It should also be noted that some clinical education sites have **additional health requirements** (flu shots, drug screens, etc.). All expenses incurred in obtaining a physical, necessary laboratory tests, immunizations and additional health requirements are the responsibility of the student.

All speech-language pathology students are required to complete both an Ohio BCI background check and an FBI criminal background check prior to participating in any clinical experiences.

Sample curriculum is subject to change. Please consult the department for up-to-date information. All course prerequisites must be met. Other than EXSC 2560 and EXSC 2460, non-SLP courses may be taken in a different order than shown.

NOTE: Students must earn a "C" or higher grade in all major courses as well as those courses that meet ASHA and Ohio Department of Education requirements. See program check sheet provided by the advisor for additional information. Graduate program requirements may be higher.

## BS in Speech-Language Pathology

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
HHS 1000	Health And Human Services/College Orientation	1
PSY 1010	Principles Of Psychology	3
SLP 2400	Communication Disorders	3
SOC 1010	Introduction To Sociology	3

Natural Sciences Core (Chemistry or Physics)	3
Hours	16

### Second Term

ENGL 2960	Professional and Business Writing	3
EXSC 2560	Anatomy and Physiology I	3
EXSC 2460	Human Anatomy And Physiology I Lab	1
Arts/Humanities Core		3
Elective		6
Hours		16

### Third Term

SLP 3020	Anatomy And Physiology Of Communication Mechanisms	4
SLP 3030	Normal Language Acquisition	4
Diversity of US		3
Core Elective		3
Elective		2
Hours		16

### Fourth Term

SLP 3010	Clinical Phonetics	4
SLP 3150	Speech and Hearing Science	4
SLP 3300	Language Disorders	4
Arts/Humanities Core		3
Hours		15

### Fifth Term

SPED 2040	Perspectives In The Field Of Exceptionalities	3
SLP 3200	Articulation/Phonological Disorders	4
Elective		4
Select one of the following:		3
HEAL 1800	Medical Terminology	
HEAL 2500	Personal Health	
HEAL 4560	Health Problems Of Aging	
COUN 2220	Family Theories And Cultural Influences In Mental Health	
COUN 4080	Essentials Of Helping Relationships	
Hours		14

### Sixth Term

MATH 2600	Introduction To Statistics	3
SLP 3800	Methods For Clinical Intervention	3
SPED 4110	Curriculum And Methodology For Students With Moderate Educational Needs	3
Non-US Diversity		3
Select one of the following:		3
HEAL 1800	Medical Terminology	
HEAL 2500	Personal Health	
HEAL 4560	Health Problems Of Aging	
COUN 2220	Family Theories And Cultural Influences In Mental Health	
COUN 4080	Essentials Of Helping Relationships	
Hours		15

**Seventh Term**

SLP 3400	Clinical Audiology	3
Core Elective		3
Elective (2000-level or higher)		9
Hours		15

**Eighth Term**

SLP 4000	Beginning Clinical Practicum	2
Core Elective		3
Elective		8
Hours		13
Total Hours		120

## Certificate in Chemical Dependency Counseling

The University of Toledo offers a certificate in chemical dependency counseling. This undergraduate certificate program will help students meet the academic requirements for licensure as a Licensed Chemical Dependency Counselor II or Licensed Chemical Dependency Counselor III in the State of Ohio. For current state requirements, please visit the State of Ohio Chemical Dependency Professionals Board at <https://ocdp.ohio.gov/>.

The undergraduate certificate in chemical dependency counseling requires a minimum of 22 credit hours as follows:

Code	Title	Hours
COUN 1240	Substance Abuse Issues In Mental Health	3
COUN 2120	Group And Therapeutic Approaches	4
COUN 2220	Family Theories And Cultural Influences In Mental Health	3
COUN 3140	Substance Abuse Prevention And Community Programming	3
COUN 3150	Models Of Treatment For Substance Abuse	3
COUN 4240	Substance Abuse Treatment Techniques	3
HEAL 3300	Drug Awareness	3
Total Hours		22

## Minor in Counseling

The counseling minor allows undergraduates to learn basic concepts and skills used in the counseling profession including counseling theories and skills, substance abuse treatment and prevention, and case management. The minor will not lead to licensure or certification but is a sound foundation for students wishing to pursue a master's degree in counseling or other helping professions.

The counseling minor requires a minimum of 19 credit hours as follows:

Code	Title	Hours
<b>Required Course</b>		
COUN 1110	Fundamentals Of Human Mental Health	4
<b>Electives</b>		

Select 15 hours of the following (At least 8 hours must be at 3000 or 4000 level):

COUN 1240	Substance Abuse Issues In Mental Health
COUN 2120	Group And Therapeutic Approaches
COUN 2220	Family Theories And Cultural Influences In Mental Health
COUN 3110	Case Management In Mental Health
COUN 3140	Substance Abuse Prevention And Community Programming
COUN 3150	Models Of Treatment For Substance Abuse
COUN 3220	Theories in Mental Health
COUN 4080	Essentials Of Helping Relationships
COUN 4240	Substance Abuse Treatment Techniques

Total Hours 19

## School of Population Health

Joseph Dake, Chair, Public Health Program Director  
Henry Marshall, Health Care Administration Program Director  
Nilgun Sezginis, Health Information Administration Program Director

The School of Population Health offers undergraduate degree programs in health care administration, health information administration, and public health. A minor in public health is available.

## Accreditation

- The BS in Health Information Administration degree program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

### Degrees Offered

- BS in Health Care Administration (p. 318)
- BS in Health Care Administration 2 + 2 (p. 319)
- BS in Health Information Administration (p. 319)
- BS in Public Health (p. 320)
- Minor in Public Health (p. 322)

### HCAR 3000 Introduction to Health Care Administration

[3 credit hours]

Studies the structure of the U.S. health care delivery system, provider organizations, and the health care professionals who staff these organizations. Opportunities and challenges of health care administration are discussed.

**Term Offered:** Spring, Summer, Fall

### HCAR 4360 Quality Improvement In Health Care

[3 credit hours]

Purpose and philosophy of quality assessment and system design. Selection/application of tools for data collection, analysis and problem resolution. Incorporates requirements of Joint Commission on the Accreditation of Healthcare Organizations.

**Term Offered:** Spring, Summer, Fall

**HCAR 4510 Medical And Legal Aspects Of Health Care**

[3 credit hours]

Coverage of historical development of legal controls in health care facilities, contemporary legal medical analysis and strategy. Also involves major factors influencing education in the allied health professions.

**Term Offered:** Spring, Summer, Fall

**HCAR 4530 Problem Solving In Health Care Environment**

[4 credit hours]

The theory, practice, and management of healthcare administration in effective decision making within the dynamics of current health care organizations.

**Prerequisites:** HCAR 3000 with a minimum grade of D- and HCAR 4360 with a minimum grade of D- and HCAR 4550 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**HCAR 4540 Internship In Health Management**

[3 credit hours]

Internship in institutional health care focusing on mid-management.

**Term Offered:** Spring, Summer, Fall

**HCAR 4545 Project Management in Healthcare**

[3 credit hours]

This course provides an applied approach to creating an Electronic Medical Record system project implementation plan utilizing several approaches to achieve this goal.

**Prerequisites:** HCAR 4530 with a minimum grade of D- and HCAR 4570 with a minimum grade of D- and HCAR 4580 with a minimum grade of D-

**HCAR 4550 Health Care Finance**

[3 credit hours]

Study of financial problems and current sources of reimbursement to health care organizations. Emphasis on departmental financial management as integrated with financial management of organizations.

**Prerequisites:** BUAD 2050 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**HCAR 4560 Services in Healthcare**

[3 credit hours]

This class will describe the services provided by hospitals, the healthcare provider teams and how departments are organized in the provision of care. This course will have specific concentration on hospital services, structure and operations.

**HCAR 4570 Resources in Healthcare**

[4 credit hours]

This four (4) hour hybrid course focuses on the study of resources in healthcare and how these resources impact the daily operations in a health care environment.

**Prerequisites:** HCAR 3000 with a minimum grade of D- and HCAR 4560 with a minimum grade of D-

**HCAR 4580 Leadership and Management in Healthcare**

[3 credit hours]

This three (3) hour class will focus on learning strategies and tools for leading and managing the unique challenges of healthcare organizations.

The course will investigate the foundations of leadership, core competencies of health care leadership and techniques to hardwired goals and strategies in leadership and development of a strong organizational culture.

**Prerequisites:** HCAR 3000 with a minimum grade of D- and HCAR 4550 with a minimum grade of D- and HCAR 4560 with a minimum grade of D-

**HEAL 1310 Nutrition for Fitness & Health**

[1 credit hour]

The student will learn basic nutrition as it applies physical fitness and overall health. Students will learn principles of planning a healthful diet that meets fitness goals.

**Term Offered:** Spring, Fall

**HEAL 1320 Nutrition for Weight Management**

[1 credit hour]

The student will learn principles of weight management, nutrition as it applies to healthy weight control, and overall health and will learn to plan individual approach to healthy diet.

**Term Offered:** Spring, Fall

**HEAL 1360 Alcohol and Contemporary Issues in College Life**

[1 credit hour]

This course provides students with an overview of the health, legal, and academic risks associated with excessive alcohol consumption among college students. Various prevention and treatment issues will be examined.

**Term Offered:** Spring, Fall

**HEAL 1500 First Aid**

[2 credit hours]

Provides the knowledge, skills, and confidence necessary to provide care for victims of sudden illness and injury. CPR, AED, and First Aid certification upon successful completion of the course.

**Term Offered:** Spring, Fall

**HEAL 1700 Introduction to Health Careers**

[3 credit hours]

An introduction to health and human service careers through an examination of the health care system, health career educational requirements, job outlook, and professional settings in which they operate.

**Term Offered:** Spring, Fall

**HEAL 1800 Medical Terminology**

[3 credit hours]

Study of the origin and structure of medical words, their prefixes, suffixes, special endings and singular to plural forms. Medical terms relating to the body and to clinical procedures will be explored.

**Term Offered:** Spring, Summer, Fall

**HEAL 2000 Foundations Of Health Education**

[3 credit hours]

Designed to introduce students to the field of health education by acquainting them with basic information, history, philosophy and competencies unique to health educators.

**Term Offered:** Fall

**HEAL 2400 General Safety**

[3 credit hours]

An analysis of accident causation and disasters occurring in the home, workplace and community, and the presentation of a framework for developing accident counter-measures.

**Term Offered:** Spring

**HEAL 2500 Personal Health**

[3 credit hours]

Information is presented on the prevention and control of health problems including heart disease, cancer, infectious diseases, mental health, nutrition, human sexuality and other pertinent personal health issues.

**Term Offered:** Spring, Summer, Fall

**HEAL 2600 Mental Health**

[3 credit hours]

An examination of the principles of mental health, mental illnesses, mental health professionals and mental health facilities.

**Term Offered:** Spring, Summer, Fall

**HEAL 2700 Introduction to Public Health**

[3 credit hours]

Introduces students to the structure, organization and methods of public health including an emphasis on protecting and improving the health of populations via research, needs assessment, program planning, program implementation, and program evaluation.

**Term Offered:** Spring, Fall

**HEAL 2750 Introduction to Epidemiology**

[3 credit hours]

This course provides students with a basic understanding of epidemiologic methods and study design and of the place of epidemiology in preventive and clinical medicine, disease investigation, program evaluation and public policy.

**Term Offered:** Fall

**HEAL 2800 Principles Of Nutrition**

[3 credit hours]

Students learn basic nutrition concepts. Personal nutritional practices are analyzed and evaluated to plan improvements. Encourages making informed decisions about nutrition by critically analyzing nutrition information which abounds in popular media.

**Term Offered:** Spring, Summer, Fall

**HEAL 2940 Practicum In Community Health**

[1 credit hour]

Supervised field experience with community health agency. Students work under direct supervision of the agency's staff and a University supervisor.

**Term Offered:** Spring, Summer, Fall

**HEAL 3000 Global Health**

[3 credit hours]

This is an introductory course focused on applying public health principles in developing as well as developed countries designed to fulfill a global studies distribution requirement.

**Term Offered:** Fall

**HEAL 3100 Health Education For Early Childhood Educators**

[2 credit hours]

Provides future early childhood educators with the knowledge and skills necessary to teach and support healthy behaviors among the early childhood population through the establishment of a positive learning environment and the creation and delivery of developmentally appropriate hands-on health education lessons.

**Prerequisites:** EDU 1700 with a minimum grade of D-

**Term Offered:** Spring, Fall

**HEAL 3200 Consumer Health**

[3 credit hours]

An examination of responsible and fraudulent practices in the health field. Evaluation of selected health services, products, fads and types of quackery.

**HEAL 3300 Drug Awareness**

[3 credit hours]

Focuses on the impact of drug abuse and misuse on the individual and society. Explores physiological, psychological and rehabilitative aspects of drug misuse and abuse. Prevention strategies are discussed.

**Term Offered:** Spring, Summer, Fall

**HEAL 3500 Environmental Health**

[3 credit hours]

An overview of the environmental effects of factors such as population growth, pollution, energy use, agriculture practices and waste disposal on the environment. Consideration will be given to solutions.

**Term Offered:** Spring, Summer

**HEAL 3600 Prevention And Control Of Disease**

[3 credit hours]

An examination of the etiology, pathogenesis, prevention and control of acute and chronic diseases. Current techniques of prevention, control and detection are examined.

**Term Offered:** Spring, Summer, Fall

**HEAL 3700 Foundations Of Human Sexuality**

[3 credit hours]

The course is designed to provide an introduction to the scientific study of human sexuality. The topic is approached from a variety of perspectives, including the historical, psychological, sociological, biological, ethical and legal.

**Term Offered:** Spring, Summer, Fall

**HEAL 3800 Death And Dying**

[3 credit hours]

The course is designed to analyze the relationship between death and health with emphasis upon the biological, psychological, bioethical and legal aspects of death in contemporary society.

**Term Offered:** Spring, Summer, Fall

**HEAL 4100 Health Behavior**

[3 credit hours]

Examines the major theories and models of health behavior and explores how those theories/models can be used to promote health and wellness in individuals, groups and populations.

**Prerequisites:** (HEAL 2000 with a minimum grade of B- and HEAL 2700 with a minimum grade of B-)

**Term Offered:** Fall

**HEAL 4200 Methods And Materials In Community Health**

[3 credit hours]

Designed for senior-level students to advance their knowledge and skills in needs assessment, program design, program implementation, program management, and program evaluation.

**Prerequisites:** HEAL 2000 with a minimum grade of D- and HEAL 2700 with a minimum grade of D- and HEAL 2750 with a minimum grade of D-

**Term Offered:** Fall



**HEAL 4400 Health Problems Of Youth**

[3 credit hours]

Provides education majors the knowledge and skills necessary to help identify, understand, and prevent preadolescent and adolescent health problems and risky health behaviors which directly impact school and future success.

**Term Offered:** Spring, Fall**HEAL 4500 Women's Health Care**

[3 credit hours]

The course is designed to consider personal health topics of special interest and applicability to women. The focus is upon the role of self-understanding and self-help in promotion of health and well-being.

**Term Offered:** Spring, Summer, Fall**HEAL 4560 Health Problems Of Aging**

[3 credit hours]

Acquaints students with physical changes and socio-psychological problems that occur with aging. Focus is on personal adjustment important in maintaining health throughout the aging process.

**Term Offered:** Spring, Summer, Fall**HEAL 4700 Nutritional Science**

[3 credit hours]

Introduces basic human nutritional needs. Examines the role of diet and health and disease throughout the lifestyle, including weight control and fitness issues. Personal nutritional practices are analyzed and evaluated.

**Prerequisites:** KINE 2530 with a minimum grade of D- or KINE 2560 with a minimum grade of D- or KINE 2570 with a minimum grade of D- or HHS 2570 with a minimum grade of D- or EXSC 2530 with a minimum grade of D- or EXSC 2560 with a minimum grade of D- or EXSC 2570 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall**HEAL 4750 Obesity And Eating Disorders**

[3 credit hours]

Examines the issues of obesity and eating disorders. Consideration of effects on the individual as well as the public health implications. Explores causes, health and emotional impact, and treatment approaches.

**Prerequisites:** HEAL 2800 with a minimum grade of D-**Term Offered:** Summer, Fall**HEAL 4800 Public Health Research And Statistics**

[3 credit hours]

An examination of research and statistical techniques commonly employed in the health field. Topics will include research design, ethics of research, hypothesis testing and critiques of published research in health journals.

**Prerequisites:** HEAL 2750 (may be taken concurrently) with a minimum grade of B- and HEAL 3600 with a minimum grade of B-

**Term Offered:** Spring**HEAL 4900 Health Education Seminar**

[1-3 credit hours]

Seminars are developed around selected topics of interest and allow in-depth consideration of the subject. They provide the student with advanced study in the area.

**Term Offered:** Spring, Summer, Fall**HEAL 4940 Senior Field Experience**

[1-9 credit hours]

Provides students the opportunity to develop the competencies necessary to assume responsibilities as an entry-level public health specialist through on-site work experiences in a public health agency, organization, or industry. Students will work under direct supervision of the agency's staff and a University supervisor.

**Prerequisites:** HEAL 2940 with a minimum grade of D- and HEAL 4100 with a minimum grade of D- and HEAL 4800 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall**HEAL 4990 Independent Study In Health Education**

[1-3 credit hours]

Directed individual study. Specialty title, seminar sheet and permission of instructor are required.

**Term Offered:** Spring, Summer, Fall**HIM 2210 Medical Linguistics In Ancillary Services**

[3 credit hours]

Expanded medical linguistics utilized in coding, classification systems and ancillary services, especially surgery, medical imaging, anesthesiology, medical tests and laboratory procedures. Linguistics of pharmacology, pathophysiology and infectious/parasitic diseases are analyzed.

**Term Offered:** Spring, Summer**HIM 2230 Healthcare Document Requirement**

[3 credit hours]

Inpatient and ambulatory health care data requirements will be identified and analyzed, including collection, analysis, and implementation.

This course also includes aspects related to medical staff, personnel requirements, licensing, certifying, and accrediting agencies.

**Term Offered:** Spring, Fall**HIM 2260 Legal Issues in HIM**

[2 credit hours]

This course covers overview of the US legal system, identification of laws and regulations applicable to healthcare topics and related the health information management. Hardcopy and electronic health record legal issues examined in detail.

**Term Offered:** Spring, Fall**HIM 2300 Healthcare Resources, Payers**

[3 credit hours]

Introduction to roles of professionals in meeting standards of regulatory agencies and voluntary organizations in healthcare delivery systems.

Data collection, quality, access, retention, technology and impact on healthcare financing.

**Term Offered:** Spring, Summer, Fall

**HIM 2310 Acute Care Clinical Classification Systems And Services**

[4 credit hours]

Principles of coding disease conditions and procedures using the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) and 10th Revision Procedure Classification System (ICD-10-PCS) are covered. Manual and computerized methods will be utilized to assign codes following Official Coding Guidelines required for reporting data.

**Prerequisites:** (KINE 1460 with a minimum grade of C or EXSC 1460 with a minimum grade of C and KINE 1560 with a minimum grade of C or EXSC 1560 with a minimum grade of C and KINE 2580 with a minimum grade of C or EXSC 2580 (may be taken concurrently) with a minimum grade of C) and (HIM 2210 with a minimum grade of C and HIM 2230 with a minimum grade of C)

**Term Offered:** Fall

**HIM 2320 Ambulatory Clinical Classifications Systems And Services**

[4 credit hours]

Principles of coding with the Healthcare Common Procedure Coding System (HCPCS) are discussed, and the assignments of codes using both manual and computerized methods are practiced.

**Prerequisites:** HIM 2210 with a minimum grade of C and (KINE 1460 with a minimum grade of C or EXSC 1460 with a minimum grade of C and KINE 1560 with a minimum grade of C or EXSC 1560 with a minimum grade of C)

**Term Offered:** Spring

**HIM 2350 Reimbursement Methodologies**

[2 credit hours]

MS-DRGs, APCs, RBRVS, and other reimbursement methods used by federal, state, and private insurance carriers are identified and reviewed. Compliance issues, including coding, billing, and chargemaster accuracy are identified and reviewed. Case mix and its implications for providing and improving healthcare quality also discussed.

**Prerequisites:** HIM 2310 with a minimum grade of C and HIM 2320 with a minimum grade of C

**HIM 3240 Health Information Administration Practices**

[4 credit hours]

Management theory and principles related to health information management in the acute and non-acute care environments are examined. Business techniques beneficial to health information administrators are identified and analyzed. Management theory and principles related to administration of healthcare service organizations are examined. Focus on strategic planning, accreditation/licensure, marketing, and institutional issues.

**Prerequisites:** BUAD 1020 with a minimum grade of D- and HIM 2300 with a minimum grade of C

**Term Offered:** Spring, Fall

**HIM 3940 Healthcare Content and Record Management**

[4 credit hours]

Generalized health information administrative duties in regards to staffing, managing, record release, storage and retrieval, coding, abstracting, utilization management, quality improvement, computer applications in health information practice.

**Prerequisites:** HIM 3240 with a minimum grade of C

**Term Offered:** Spring, Fall

**HIM 4210 Healthcare Statistics, Registries, Research**

[4 credit hours]

Theory of healthcare statistics will be reviewed and students will apply practical application of statistical methods used in healthcare to produce reports. Surveillance mechanisms, including database management used in registries to track various disease processes or injuries will be investigated and researched.

**Prerequisites:** MATH 2600 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**HIM 4230 Compliance and Ethical Issues**

[3 credit hours]

This course presents an overview of the compliance and ethical issues facing the health care industry. The importance of corporate compliance programs and standards, policies, and procedures healthcare organizations should have in place to assure compliance with government funded programs will be the focus of the course. Senior standing status required.

**Term Offered:** Spring, Fall

**HIM 4300 Performance Improvement and Quality Outcomes in Healthcare**

[3 credit hours]

This course encompasses the philosophy and purposes of quality improvement methods in health care organizations through application of tools for data collection, data analysis, and problem resolution. Continuous monitoring and performance improvement (PI) methods are investigated and applied to the management and evaluation of PI programs, the review of PI outcomes and implementation of action plans.

**Prerequisites:** INFS 3250 with a minimum grade of D- and CMPT 2460 with a minimum grade of D- and CMPT 1420 with a minimum grade of D-

**Term Offered:** Fall

**HIM 4500 Health Informatics & Information Management**

[4 credit hours]

This course introduces students to informatics as it applies to healthcare. Healthcare information systems are identified and the importance of the technology and its effect on healthcare delivery, communication, confidentiality, financing, and education are examined. An introduction to key medical areas in which computers are used will be discussed.

**HIM 4910 Integrative Capstone Experience**

[4 credit hours]

The course consists of a demonstration of proficiencies and competencies in Health Information Administration (HIA) core courses and an extensive examination of the cognitive levels required to pass the national Registered Health Information Administration (RHIA) exam and to become an effective healthcare information supervisor. Senior standing and instructor permission required.

**Term Offered:** Spring, Fall

**HIM 4940 Professional Practice Experience**

[4 credit hours]

Specialized administrative assignment within health information management in a facility, agency or organization. Students submit a major project for the site and members of the related HIM community of practice. Senior standing and instructor permission required.

**Prerequisites:** HIM 3240 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**PUBH 4110 Intro Spanish for Healthcare**

[1-3 credit hours]

This course introduces the Spanish language in a medical context. Through development of oral and aural skills, enables more effective communication with Spanish speaking patients.

**PUBH 4120 Adv Med Spanish Hlth Care Pro**

[3 credit hours]

Prerequisites: Previous experience in Spanish language and/or completion of PUBH411 Builds upon previous Spanish in a medical context and development of oral and aural skills for more effective communication, improving interaction with Spanish speaking patients.

## BS in Health Care Administration

The University of Toledo offers a bachelor of science degree in health care administration. This degree requires 120 credit hours for graduation. The health care administration program provides students with knowledge and skills to act as health care administrators in a variety of settings, such as hospitals, long term care and outpatient facilities, physician offices, and public health agencies. This interdisciplinary program introduces students to managerial concepts and related skills. The health care core courses enhance students' knowledge in a variety of related subjects, including current health issues, legislation affecting health care, and management theories and decision making, all of which are important in health care administration. The degree program includes a minor in business.

## Health Care Administration Internship

The health care administration internship is designed to provide students with an opportunity to apply educational achievements in a health care setting. Students will be exposed to health care administration operations through project-based work. Project opportunities will vary and reflect both the participant's learning goals and the needs of the health care organization.

To be considered for the internship, students need to:

- Declare health care administration as their major at least one semester before beginning the internship.
- Complete at least 12 credit hours in health care administration required courses with a minimum grade of "C" in each course.
- Have a current minimum 2.5 overall grade point average.
- Apply to the health care administration internship prior to their last semester before graduating.
- Complete the health care administration internship application three months prior to the internship semester.
- Provide resume to health care administration faculty.
- Interview with health care administration faculty and health care organization.
- Be able to provide their own transportation to the health care organization.
- Attend the health care organization's orientation.
- Complete required immunizations from the health care organization.
- Obtain security badge from the health care organization.

- Have approval from health care administration faculty to complete internship.

Below is a sample plan of study. Consult your degree audit for your program requirements. Grades of "C" or better are required in all HCAR courses.

## BS in Health Care Administration with Business Minor

Course	Title	Hours
<b>First Term</b>		
BUAD 1020 or CMPT 1100	Micro-Computer Applications In Business or Microsoft Office Applications	3
ENGL 1110	College Composition I	3
HHS 1000	Health And Human Services/College Orientation	1
MATH 1730	Calculus with Applications to Business and Finance	5
Arts/Humanities Core		3
Hours		15
<b>Second Term</b>		
ECON 1200	Principles Of Microeconomics	3
ENGL 2960	Professional and Business Writing	3
HEAL 1800	Medical Terminology	3
SOC 1010	Introduction To Sociology	3
Diversity of US		3
Hours		15
<b>Third Term</b>		
BUAD 2040 or ACTG 1040	Financial Accounting Information or Principles Of Financial Accounting	3
ECON 1150	Principles Of Macroeconomics	3
HEAL 2700	Introduction to Public Health	3
Non-US Diversity		3
Program Elective		3
Hours		15
<b>Fourth Term</b>		
BUAD 2050 or ACTG 1050	Accounting For Business Decision-Making or Principles Of Management Accounting	3
EXSC 1560	Fundamentals of Anatomy and Physiology	3
EXSC 1460	Fundamentals of Anatomy and Physiology Lab	1
HCAR 3000	Introduction to Health Care Administration	3
Core Elective		3
Program Elective		3
Hours		16
<b>Fifth Term</b>		
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
HCAR 4560	Services in Healthcare	3
MATH 2600	Introduction To Statistics	3

Natural Sciences Elective	3
Arts/Humanities Core	3
Hours	15
<b>Sixth Term</b>	
BUAD 3010 Principles Of Marketing	3
HCAR 4360 Quality Improvement In Health Care	3
HCAR 4570 Resources in Healthcare	4
HEAL 3800 Death And Dying	3
PHIL 3370 Medical Ethics	3
Hours	16
<b>Seventh Term</b>	
HCAR 4530 Problem Solving In Health Care Environment	4
HCAR 4550 Health Care Finance	3
HEAL 4560 Health Problems Of Aging	3
MGMT 3630 Conflict Management: Mediation & Negotiations	3
Hours	13
<b>Eighth Term</b>	
HCAR 4540 Internship In Health Management	3
HCAR 4580 Leadership and Management in Healthcare	3
HURM 3220 Human Resource Management	3
Program Elective	3
Elective	3
Hours	15
Total Hours	120

## BS in Health Care Administration 2+2

The University of Toledo offers a bachelor of science degree completion program in health care administration. This degree requires 120 credit hours for graduation. The health care administration degree completion program provides students with knowledge and skills to act as health care administrators in a variety of settings, such as hospitals, long term care and outpatient facilities, physician offices, and public health agencies. This interdisciplinary program introduces students to managerial concepts and related skills. The health care core courses enhance students' knowledge in a variety of related subjects, including current health issues, legislation affecting health care, and management theories and decision making, all of which are important in health care administration.

**Students who enroll in the degree completion program must have an earned associate's degree in a health-related field.** Students who select this program are often already gainfully employed in the health care field (nurses, respiratory therapists, etc.). They wish to further their education to better prepare themselves for administrative positions.

To complete the 2+2 degree, a student must take a minimum of 120 credit hours and maintain a minimum GPA of 2.0 at the University of Toledo. A minimum of 64 hours must be taken at the 2000 to 4000 levels, with a minimum of 32 hours at the 3000 and 4000 levels. University core curriculum requirements must be met. See your advisor for details.

Below is a sample program of study. Consult your degree audit for your program requirements. Grades of "C" or better are required in all HCAR courses.

Course	Title	Hours
<b>First Term</b>		
CMPT 1100 or BUAD 1020	Microsoft Office Applications or Micro-Computer Applications In Business	3
ECON 1200	Principles Of Microeconomics	3
HCAR 3000	Introduction to Health Care Administration	3
HCAR 4360	Quality Improvement In Health Care	3
HCAR 4560	Services in Healthcare	3
Hours		15
<b>Second Term</b>		
BUAD 2040	Financial Accounting Information	3
ECON 1150	Principles Of Macroeconomics	3
HCAR 4570	Resources in Healthcare	4
PHIL 3370	Medical Ethics	3
Diversity of US		3
Hours		16
<b>Third Term</b>		
BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
HCAR 4550	Health Care Finance	3
MATH 2600	Introduction To Statistics	3
Arts/Humanities Core		3
Hours		15
<b>Fourth Term</b>		
HCAR 4530	Problem Solving In Health Care Environment	4
HCAR 4540	Internship In Health Management	3
HCAR 4580	Leadership and Management in Healthcare	3
HURM 3220	Human Resource Management	3
Non-US Diversity		3
Hours		16
Total Hours		62

## BS in Health Information Administration

The University of Toledo offers a bachelor of science degree in health information administration. This degree requires 120 credit hours for graduation and can be completed online. It encompasses a broad range of disciplines including medicine, health, business, informatics and information management. Graduates serve in a variety of health care managerial and administrative roles, including planning, organizing, controlling and evaluating health information systems; applying legal principles, policies, regulations and standards and analyzing their impact on risk management; and supervising personnel in various health care settings. Health information managers are responsible for health records

and must assure adequate documentation for accurate classifying and indexing of diagnoses, treatments and procedures for the purpose of planning and reimbursement. Health information administrators are responsible for planning, engineering, workflow applications, research, reporting and policy administration.

The Health Information Administration program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). Graduates of the HIA program at The University of Toledo are eligible to sit for the certification examination. The American Health Information Management Association (AHIMA) grants successful examination candidates recognition as Registered Health Information Administrators (RHIA).

Professional practice experience (PPE) is an integral part of the health information administration curriculum. The PPE is project oriented with students acting as project managers, creating a proposal letter and project forms, deliverable(s), presentation, survey and follow up analysis. Sites and projects vary by location. Students are required to meet all site requirements including immunizations and background checks. Students must provide their own transportation to the site.

## BS in Health Information Administration

Below is a sample plan of study. Consult your degree audit for your program requirements. Grades of "C" or better required in all EXSC and HIM courses.

Course	Title	Hours
<b>First Term</b>		
BUAD 1020	Micro-Computer Applications In Business	3
ENGL 1110	College Composition I	3
EXSC 1560	Fundamentals of Anatomy and Physiology	3
EXSC 1460	Fundamentals of Anatomy and Physiology Lab	1
HHS 1000	Health And Human Services/College Orientation	1
Arts/Humanities Core		3
Hours		14
<b>Second Term</b>		
BMGT 1540 or BUAD 2030	Organizational Behavior or Executive Communication Essentials	3
BMGT 2020	Human Resource Development	3
BUAD 2020	Information Technology Management	3
CMPT 1420	Microsoft Access Database Applications	2
MATH 2600	Introduction To Statistics	3
Hours		14
<b>Third Term</b>		
EXSC 2580	Human Pathophysiology For Health Care	3
ENGL 2950 or ENGL 2960	Science And Technical Report Writing or Professional and Business Writing	3
HIM 2230	Healthcare Document Requirement (FL)	3
HIM 2260	Legal Issues in HIM (FL)	2
HIM 2300	Healthcare Resources, Payers (FL)	3
Hours		14

### Fourth Term

ACTG 2310	Financial Management for Health Care	3
HIM 2210	Medical Linguistics In Ancillary Services (SP)	3
HIM 3240	Health Information Administration Practices (SP)	4
INFS 3250	Business Data Analysis & Reporting	3
Social Sciences Core (Diversity of US)		3
Hours		16

### Fifth Term

HIM 2310	Acute Care Clinical Classification Systems And Services (FL)	4
HIM 2350	Reimbursement Methodologies (FL)	2
HIM 3940	Healthcare Content and Record Management (FL)	4
Core Elective (Non-US Diversity)		3
Natural Sciences Core		3
Hours		16

### Sixth Term

COMM 2840	Interpersonal Communication	3
HIM 2320	Ambulatory Clinical Classifications Systems And Services (SP)	4
Upper Division Supporting Elective		3
Social Sciences Core		3
Core Elective		3
Hours		16

### Seventh Term

HIM 4210	Healthcare Statistics, Registries, Research (FL)	4
HIM 4230	Compliance and Ethical Issues (FL)	3
HIM 4300	Performance Improvement and Quality Outcomes in Healthcare (FL)	3
Upper Division Supporting Elective		3
Core Elective		3
Hours		16

### Eighth Term

HIM 4500	Health Informatics & Information Management	4
HIM 4910	Integrative Capstone Experience (SP)	4
HIM 4940	Professional Practice Experience	4
Elective: Foreign Language Recommended		2
Hours		14
Total Hours		120

Courses noted with FL or SP are only offered in those semesters. All HIM courses are offered online only.

## BS in Public Health

The University of Toledo offers a bachelor of science degree in public health. This degree requires 124 credit hours for graduation. The public health program is designed to prepare students to work in non-profit



health organizations, in local, state and national government health agencies, or in worksite wellness. The mission of the undergraduate public health program is to prepare students to use theory-driven approaches to promote health and prevent disease within specific populations.

Public health majors help people improve their quality of life. Studying public health teaches students how to design, implement, and evaluate programs to promote health and prevent disease. The program explores critical health issues such as nutrition, substance abuse, human sexuality, health behaviors, environmental health, and disease prevention. Students learn through hands-on practice by shadowing health professionals in their first year. In their second year, students earn credit through a "mini-internship" with a community agency or organization. Finally, fourth year students gain real-world experience through a 400-hour internship with the agency or organization of their choice.

## Public Health Pre-Medical track

The public health pre-medical track is a 124 credit hour option within the existing bachelor of science in public health degree program. The pre-medical track is targeted toward those students who are interested in impacting the health and well-being of communities and want to build upon that with a medical degree following completion of the bachelor's degree. This track provides several options upon completion of the degree:

- meet requirements for admission into most medical schools and also have additional coursework that will provide a strong foundation for a physician;
- obtain a career in the field of public health education which the Bureau of Labor Statistics predicts to have a 21% growth by 2022; or
- seek graduate education in a public health field.

The public health field is growing increasingly competitive. To enroll in the core requirement courses, including the sophomore level practicum and 400-hour senior internship, at least a 2.7 GPA is required. Because of the strong engagement with the community, students are held to a high level of professionalism. Students are expected to:

- perform with excellence in the classroom;
- act with a high level of professionalism in all areas;
- join and actively participate in Eta Sigma Gamma, our student organization;
- attend local, state, and/or regional professional conferences;
- get involved in research with faculty members; and
- participate in community service.

- Bachelor of Science in Public Health
- Bachelor of Science in Public Health: Pre-Medical track

## BS in Public Health

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
HEAL 2000	Foundations Of Health Education (FL)	3
HHS 1000	Health And Human Services/College Orientation	1
MATH 1180	Reasoning With Mathematics	3
Arts/Humanities Core		3
Diversity of US		3
Hours		16
<b>Second Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
ENGL 2950	Science And Technical Report Writing	3
HEAL 2700	Introduction to Public Health	3
SOC 1020	Social Problems	3
Arts/Humanities Core		3
Hours		17
<b>Third Term</b>		
EXSC 2510	Human Anatomy <sup>1</sup>	3
EXSC 2520	Human Anatomy Lab <sup>1</sup>	1
HEAL 2750	Introduction to Epidemiology (FL)	3
Skills for Comm Health Elective		3
Health Elective		3
Elective		3
Hours		16
<b>Fourth Term</b>		
EXSC 2530	Human Physiology <sup>1</sup>	3
EXSC 2540	Human Physiology Lab <sup>1</sup>	1
HEAL 2400	General Safety (SP)	3
HEAL 2940	Practicum In Community Health	1
Non-US Diversity		3
Skills for Comm Health Elective		3
Hours		14
<b>Fifth Term</b>		
HEAL 3000	Global Health (FL)	3
HEAL 3600	Prevention And Control Of Disease	3
HEAL 4700	Nutritional Science	3
Social Sciences Core		3
Elective		4
Hours		16
<b>Sixth Term</b>		
EXSC 3240	Concepts of Exercise Fitness and Health Strategies	3
HEAL 3500	Environmental Health (SP)	3
HEAL 4800	Public Health Research And Statistics (SP)	3
Skills for Comm Health Elective		3

Elective		3
Hours		15
<b>Seventh Term</b>		
EXSC 3520	Applied Exercise Physiology	3
HEAL 4100	Health Behavior (FL)	3
HEAL 4200	Methods And Materials In Community Health (FL)	3
Social Sci Support Elective		3
Health Elective		3
Hours		15
<b>Eighth Term</b>		
EXSC 2590	Microbiology and Infectious Diseases	3
HEAL 4940	Senior Field Experience	9
Social Sci Support Elective		3
Hours		15
Total Hours		124

<sup>1</sup> A "C" or better is required in this course.

Courses noted with FL or SP are only offered in those semesters.

## BS in Public Health – Pre-Medical track

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I <sup>1</sup>	4
CHEM 1280	General Chemistry Lab I <sup>1</sup>	1
ENGL 1110	College Composition I	3
HHS 1000	Health And Human Services/College Orientation	1
Hours		14
<b>Second Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 1240	General Chemistry II <sup>1</sup>	4
CHEM 1290	General Chemistry Lab II <sup>1</sup>	1
ENGL 2950	Science And Technical Report Writing	3
PSY 1010	Principles Of Psychology	3
Hours		16
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I <sup>1</sup>	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors <sup>1</sup>	1
EXSC 2510	Human Anatomy <sup>1</sup>	3

EXSC 2520	Human Anatomy Lab <sup>1</sup>	1
HEAL 2700	Introduction to Public Health	3
MATH 1340	College Algebra And Trigonometry <sup>1</sup>	5
Hours		16

<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II <sup>1</sup>	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors <sup>1</sup>	1
EXSC 2530	Human Physiology <sup>1</sup>	3
EXSC 2540	Human Physiology Lab <sup>1</sup>	1
MATH 2600	Introduction To Statistics	3
Diversity of US		3
Hours		14

<b>Fifth Term</b>		
CHEM 3510	Biochemistry I (FL)	3
HEAL 2750	Introduction to Epidemiology (FL)	3
HEAL 3000	Global Health (FL)	3
PHYS 2070	General Physics I (FL) <sup>1</sup>	5
PSY 2510	Lifespan Developmental Psychology	3
Hours		17

<b>Sixth Term</b>		
HEAL 3500	Environmental Health (SP)	3
HEAL 3600	Prevention And Control Of Disease	3
HEAL 4800	Public Health Research And Statistics (SP)	3
PHYS 2080	General Physics II (SP)	5
Support Elective		3
Hours		17

<b>Seventh Term</b>		
HEAL 4100	Health Behavior (FL)	3
HEAL 4200	Methods And Materials In Community Health (FL)	3
HEAL 4700	Nutritional Science	3
Arts/Humanities Core (Non-US Diversity)		3
Support Elective		3
Hours		15

<b>Eighth Term</b>		
HEAL 3800	Death And Dying	3
HEAL 4940	Senior Field Experience	6
Arts/Humanities Core		3
Social Sciences Core		3
Hours		15
Total Hours		124

<sup>1</sup> A "C" or better is required in this course.

Courses noted with FL or SP are only offered in those semesters.

## Minor in Public Health

Public health is a diverse and dynamic field. Public health professionals come from varying educational backgrounds and can specialize in

an array of fields. A host of specialists, including teachers, medical professionals, journalists, researchers, administrators, social workers, environmentalists, laboratory sciences, demographers, and attorneys work to protect the health of the public.

The Institute of Medicine (IOM) determined that keeping the public healthy required a well educated public health workforce and educated citizens. The IOM recommends that all undergraduates have access to education in public health. Furthermore, the changing health care system in America will undoubtedly place more emphasis on primary prevention in the future. As specialists in prevention, students with a public health background will be well suited to meet these societal demands. Additionally, students with this minor will be better prepared should they desire graduate education in the field of public health.

A minimum of 21 credit hours is required to complete the minor. The internship includes 150 hours of field experience.

Code	Title	Hours
HEAL 2700	Introduction to Public Health	3
HEAL 2750	Introduction to Epidemiology (FL)	3
HEAL 3000	Global Health (FL)	3
HEAL 3600	Prevention And Control Of Disease	3
HEAL 4100	Health Behavior (FL)	3
HEAL 4940	Senior Field Experience	3
Elective Course (select one)		3
ECON 4750	Health Economics	
HEAL 3500	Environmental Health (SP)	
HEAL 4800	Public Health Research And Statistics (SP)	
SOC 4180	Medical Sociology	

Courses noted with FL or SP are only offered in those semesters. Students will be required to meet all of the prerequisites and co-requisites for the courses in the minor.

## School of Social Justice

John Laux, Interim Chair  
Wendi Goodlin-Fahncke, Criminal Justice Program Director  
John Schlageter, Paralegal Studies Program Director  
Heather Sloane, Social Work Program Director

The School of Social Justice offers undergraduate degree programs in criminal justice, paralegal studies, and social work. Minors are available in criminal justice, data science, forensic science investigation, and legal specialties. Undergraduate certificates are offered in nurse paralegal as well as post-baccalaureate paralegal studies.

## Accreditation

- The BS in Paralegal Studies degree program maintains approval from the American Bar Association (ABA).
- The BSW in Social Work degree program is accredited by the Council on Social Work Education (CSWE).

## Degrees Offered

- Associate of Applied Science in Paralegal Studies (p. 329)
- BS in Criminal Justice (p. 330)
- BS in Paralegal Studies (p. 331)
- BSW in Social Work (p. 332)
- Certificate in Nurse Paralegal (p. 333)
- Minor in Data Science (p. 334)
- Minor in Criminal Justice (p. 334)
- Minor in Forensic Science Investigation (p. 334)
- Minor in Legal Specialties (p. 334)
- Post Baccalaureate Certificate in Paralegal Studies (p. 335)

### CRIM 1010 Criminal Justice

[3 credit hours]

The overall history, philosophy and functioning of the criminal justice system in the U.S. The integrated roles of law enforcement, the courts and corrections will be analyzed and discussed.

**Term Offered:** Spring, Fall

### CRIM 1040 HUMAN RELATIONS AND DIVERSITY IN CRIMINAL JUSTICE

[3 credit hours]

This class will focus on human relations and cultural diversity faced by the criminal justice system, including the police, courts, corrections, and community organizations, and the course will explore general principles in effective human relations, the importance of diversity, and their application in the field of criminal justice.

**Term Offered:** Spring, Fall

### CRIM 1110 Penology

[3 credit hours]

The study of jails, prisons and other types of specialized correctional institutions. The philosophy of incarceration along with the administration, staffing and operations of these facilities will be reviewed.

**Term Offered:** Spring, Fall

### CRIM 1240 Policing

[3 credit hours]

Introduction to law enforcement practices and agencies in the United States, including the history, philosophy and operation of federal, state and local enforcement agencies.

**Term Offered:** Spring, Fall

### CRIM 2050 Applied Criminology

[3 credit hours]

This course examines the theoretical causes of crime in relation to the duties and responsibilities of police and corrections personnel, and the development of criminal justice policies.

**Term Offered:** Spring, Summer, Fall

### CRIM 2200 Criminal Law

[3 credit hours]

The statutes of Ohio relating to crime and the elements necessary for establishing and providing proof of crimes are studied.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CRIM 2210 Criminal Investigation I**

[3 credit hours]

Introduction to the processes, theories and principles of criminal investigation. Methods of gathering information, report writing, interview/interrogation strategies, surveillance, search warrant information, affidavit preparation and execution are studied.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Fall

**CRIM 2220 Laws Of Evidence**

[3 credit hours]

A thorough study of the evidence rules with specific emphasis on the application of these rules in preparing and presenting evidence.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CRIM 2230 Criminal Procedure**

[3 credit hours]

An examination of the Bill of Rights of the U.S. Constitution as it appears to arrest, search, seizure, detention, interviews, and interrogations.

**Term Offered:** Spring, Summer, Fall

**CRIM 2250 Juvenile Justice**

[3 credit hours]

To analyze the causes of juvenile delinquency and the extent of the problem in the U.S. Also, to discuss the inter-workings of the juvenile justice system in response to the delinquency problem, in conjunction with delinquency prevention programs.

**Term Offered:** Spring, Summer, Fall

**CRIM 2990 Independent Study**

[1-6 credit hours]

Supervised independent study.

**Term Offered:** Spring, Fall

**CRIM 3000 Police Academy**

[1-15 credit hours]

This course provides students with an experiential learning opportunity in the field of policing.

**CRIM 3110 Hate Crimes**

[3 credit hours]

The course examines the genesis, development, theory and practice of hate crimes and how society has and can respond to hate crimes.

**Term Offered:** Summer, Fall

**CRIM 3210 Applied Psychology for Criminal Justice Personnel**

[3 credit hours]

This course overviews mental disorders and substance abuse problems common to persons entering the criminal justice system. Related social policies and criminal justice practices are critically examined.

**Term Offered:** Spring, Summer, Fall

**CRIM 3220 Crime Mapping And Criminal Profiling**

[3 credit hours]

The course content develops an understanding of the uses of information technologies and psychological profiling in defining criminal behavior as well as the geographic consideration.

**CRIM 3230 White Collar Crime**

[3 credit hours]

A historical overview of the evolution of white-collar crime in American Society as well as an understanding of the nature, causes and consequences of different forms of white-collar crime.

**CRIM 3240 Victimology**

[3 credit hours]

This course examines the history of victimology and includes topics such as the characteristics of crime victims and specific types of victimization such as hate crimes and sexual assault.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Summer, Fall

**CRIM 3250 Women and Crime**

[3 credit hours]

This course will explore the causes and social consequences of crimes by and against women. The course will expose students to feminist theory and examine the interlocking effects of gender, race and class.

**Term Offered:** Fall

**CRIM 3290 Criminal Investigation II**

[3 credit hours]

An introduction to the crime scene, including methods of searching, photography, sketching and gathering of physical evidence. Fingerprint analysis. Methods utilized in drug investigations and development of information sources are studied.

**Prerequisites:** CRIM 2210 with a minimum grade of D-

**Term Offered:** Spring

**CRIM 3300 Sex Crimes**

[3 credit hours]

Overview of a variety of sex crimes, characteristics of sexual predators, theories to explain sex crimes, and current legislation and treatment efforts utilized today to combat sex crimes.

**CRIM 4000 Narcotics Policy and Enforcement**

[3 credit hours]

This course will explore the "War on Drugs" from a historical, pharmacological, economic, political, and practical perspective.

**Term Offered:** Spring

**CRIM 4010 Probation and Parole**

[3 credit hours]

An introduction to the history and dynamics of probation and parole, how they interact within the criminal justice system, and the effective treatment of offender clients.

**Term Offered:** Spring

**CRIM 4100 Criminal Justice Research Methods**

[3 credit hours]

This course provides students with an understanding of criminal justice research, the concepts and logic of research designs and widely used statistical procedures.

**Term Offered:** Spring, Summer, Fall

**CRIM 4200 Ethics In Criminal Justice**

[3 credit hours]

This course is designed to provide students with an opportunity to integrate ethics in their understanding of criminal justice.

**Term Offered:** Spring, Summer, Fall

**CRIM 4300 Theories Of Criminal Justice**

[3 credit hours]

A critical study and appreciation of the theories of criminal justice, including micro and macro theories.

**Term Offered:** Spring, Summer

**CRIM 4410 Criminal Forensic and Trial Practice**

[3 credit hours]

This cross-listed capstone course will allow students to step out of the traditional classroom setting and participate in an applied skills course that will benefit them in the real world of Criminal Justice. Students will be presented with a case and will be responsible for the various stages of the investigative process as well as the trial process.

**Prerequisites:** CRIM 2210 with a minimum grade of D- and CRIM 3290 with a minimum grade of D-

**CRIM 4450 Administration Of Police Services**

[3 credit hours]

The application of management principles to municipal police departments, emphasizing the resources, constraints and strategies of police managers.

**Term Offered:** Spring, Summer, Fall

**CRIM 4490 Current Topics-Crim**

[3 credit hours]

This cross-listed capstone course will allow students to step out of the traditional classroom setting and participate in an applied skills course that will benefit them in the real world of Criminal Justice. Students will be presented with a case and will be responsible for the various stages of the investigative process as well as the trial process.

**Term Offered:** Spring, Summer, Fall

**CRIM 4520 Police And Society**

[3 credit hours]

An examination of the role of the police in contemporary America, emphasizing the ambivalence of the self-image of the police and the social and political forces that compete to redefine police function.

**Term Offered:** Summer, Fall

**CRIM 4590 Administration Of Criminal Justice**

[3 credit hours]

General systems approach to criminal justice from an organizational and legal perspective with emphasis on the interaction of the major components-police, prosecutors, courts and corrections.

**Term Offered:** Spring, Fall

**CRIM 4940 Criminal Justice Internships**

[3-12 credit hours]

Field placement experience within a criminal justice agency to enhance the student's practical knowledge of the field in conjunction with career planning opportunities.

**Term Offered:** Spring, Summer, Fall

**CRIM 4990 Independent Study In Criminal Justice**

[1-3 credit hours]

Individual course of study in a selected topic pertaining to Criminal Justice chosen by the student, with the consent of the instructor.

**Term Offered:** Spring, Summer, Fall

**LGL 1010 Introduction To Law**

[3 credit hours]

The course is designed to improve oral and written communication skills through the study of contracts, real property, torts and criminal law. The course includes the structure and operation of the state and federal court systems, as well as the status and uses of paralegals.

**Term Offered:** Spring, Fall

**LGL 1150 Tort Law**

[3 credit hours]

This course covers the traditional areas of tort law, including negligence, trespass, mental distress and conversion as well as the defenses to these claims. The course is taught through the case study method.

**Term Offered:** Spring

**LGL 1160 Legal Research, Writing And Case Analysis**

[3 credit hours]

Designed to provide the student with an understanding of the function of the law library and to develop research techniques and legal analysis and writing skills through use of traditional law library materials and computerized legal research techniques such as Lexis and Anderson CD-ROM Law on Disk.

**Prerequisites:** LGL 1010 with a minimum grade of D-

**Term Offered:** Spring

**LGL 1720 Law Practice Management**

[3 credit hours]

This course exposes students to various management structures within and the administration of the law office and other legal environments. Critical thinking will be applied to management theories and applications.

**Term Offered:** Fall

**LGL 2020 Civil Procedure**

[3 credit hours]

An in-depth study of the Rules of Civil Procedure, including application of rules of fact patterns. Students will draft litigation documents including complaint, answer and discovery pleadings.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1150 with a minimum grade of D-)

**Term Offered:** Fall

**LGL 2110 Estate & Probate Administration**

[3 credit hours]

Study of the common forms of wills and trusts and a survey of the fundamental principles of law applicable to each; study of the organization and jurisdiction of the probate court, analysis of the administration of estates in probate court and a review of estate and inheritance taxes.

**Term Offered:** Spring

**LGL 2120 Real Estate Transactions**

[3 credit hours]

The law of real property and common types of real estate transactions and conveyances, such as deeds, land installment contracts, sales contracts and leases, with emphasis on researching, drafting and recording of documents related thereto.

**Term Offered:** Fall

**LGL 2130 Family Law**

[3 credit hours]

Study of the law and practice of divorce, dissolution and all matters relating to the termination of a marriage. Students will be trained to conduct client interviews, draft pleadings and associated court forms, and calculate support under state-mandated guidelines.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Fall



**LGL 2210 Practices And Procedures In Administrative Law**

[3 credit hours]

This course takes a look at the substantive and procedural aspects of various administrative law agencies with emphasis on providing skills to practice in administrative law.

**Term Offered:** Spring**LGL 2700 Advocacy: Mock Trial**

[3 credit hours]

An in-depth survey of the trial process which exposes students to each step of a trial in a hands-on fashion. The course will be taught utilizing traditional lecture, reading and actual mock trial experience.

**Term Offered:** Fall**LGL 2940 Legal Assisting Internship**

[3 credit hours]

Field experience in law offices. Students will be placed in various legal assisting positions by the program director. Students will meet for job-related seminar once a week and will work at their assigned law office for 180 hours during the semester.

**Term Offered:** Spring, Summer, Fall**LGL 2990 Independent Study**

[1-3 credit hours]

This course is used for faculty-assisted independent study in the area of legal assisting.

**LGL 3010 Law Of Business Associations**

[3 credit hours]

Study of business entities: sole proprietorships, partnerships and corporations. Critical analysis of business entities, de factor and de jure entities. Students will complete articles of incorporation, bylaws and minute books.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1720 with a minimum grade of D-)

**Term Offered:** Spring**LGL 3030 Advanced Legal Research & Writing**

[3 credit hours]

Focus on advanced legal writing. Students will be challenged to master computer assisted legal research methods.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Fall**LGL 3050 Bankruptcy Practices & Consumer Applications**

[3 credit hours]

An analysis of consumer laws including landlord-tenant relationships, consumer sales practices, uniform commercial code transactions, credit card law, garnishment, fair debt collection practices act and the United States Bankruptcy Code.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Fall**LGL 3110 Personal Law**

[3 credit hours]

Through critical reasoning/collaborative learning, students will examine personal law issues and legal rights/responsibilities, enabling them to formulate analytical models readily transferable to legal issues in their present and future lives.

**Term Offered:** Summer**LGL 3120 Personal Law II**

[3 credit hours]

An analysis of current legal decisions on topics such as same sex marriage, home forced entry and theology studies subsidies through analogizing/distinguishing related fact patterns and criticizing judicial exposition/logic.

**Prerequisites:** LGL 3110 with a minimum grade of D-

**LGL 3330 Litigation**

[3 credit hours]

Focus on evidence and investigation, applying critical thinking skills to actual litigation cases. Analysis of court pleadings for appropriateness and alternative mechanisms. Study of post trial and appellate matters.

**Prerequisites:** (LGL 1150 with a minimum grade of D- and LGL 2020 with a minimum grade of D-)

**Term Offered:** Spring**LGL 3350 Alternative Dispute Resolution**

[3 credit hours]

Students will overview conflict theory, resolution and its history. Students will focus on skills necessary for alternative dispute resolution: negotiation, mediation, arbitration, summary jury trial and mini trial.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1150 with a minimum grade of D- and LGL 2020 with a minimum grade of D-)

**Term Offered:** Fall**LGL 4030 Contract Law**

[3 credit hours]

Focus on the laws concerning creation and termination of contracts. Students will analyze contractual terms including reliance, capacity, unconscionability, conditions, assignments, third-party beneficiaries and the effect of changed circumstances.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall**LGL 4130 Clinic Experience**

[3 credit hours]

Students will work in a clinical environment, such as: Court Appointed Special Advocates, the UT Center for Mediation and Legal Rights, the Toledo Bar Association's Pro Se Family Law Program.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Spring**LGL 4230 Health Care And The Law**

[3 credit hours]

An analysis of health care laws and legal issues, including treatment relationships, medical malpractice, the right to die, reproductive rights, bioethics, health care financing, public health, delivery systems and regulations.

**Term Offered:** Spring, Summer, Fall**LGL 4330 Mediation: Topics And Techniques**

[3 credit hours]

This service learning course teaches the facilitative approach to mediating disputes. Students break down disputed issues, role play, and observe actual mediations for the peaceful and cooperative resolution of disputes.

**Term Offered:** Spring

**LGL 4940 Advanced Paralegal Internship**

[3 credit hours]

Field experience for seniors, placement within their specialty. Students meet for 1 hour seminar and work at assigned law office for 12 hours per week.

**Term Offered:** Spring, Summer, Fall

**LGL 4990 Criminal Forensics and Trial Practice**

[3 credit hours]

This course allows students to step out of the traditional classroom setting and practice hands-on skills. Students will be assigned as crime scene investigators, paralegals and attorneys and will be responsible for investigating a homicide, indicting a suspect and conducting a trial. Part I of the class involves investigative techniques for the homicide investigative process. Part II of the class exposes students to each step of the trial in a hands-on fashion.

**Prerequisites:** LGL 2700 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**SOCW 1030 Introduction To Social Welfare**

[3 credit hours]

Introduction to the social welfare institution, its history, relation to social values, social welfare laws and programs, and the systems characteristic of service delivery. C or better required for majors.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity

**SOCW 2010 Survey Of The Social Work Profession**

[4 credit hours]

This course provides an opportunity for the student to explore the dynamics of the social work profession. The student will examine various components of social work, including an overview of strengths perspective, systems theory, ethics, client populations served, roles of social workers who serve these populations, and APA style of professional writing. The course also includes sixty hours of supervised field experience and directed classroom discussion connecting field experience to social work practice.

**Prerequisites:** SOCW 1030 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**SOCW 2210 Field Experience And Lab I**

[3 credit hours]

Supervised field experience. Ninety hours evenly distributed with weekly directed classroom discussion of reflecting the relationship of field experience to social work practice. This course meets the WAC requirements, and journaling and written classroom exercises will be required.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**SOCW 3020 Social Work Issues In Social & Economic Justice**

[3 credit hours]

Provides an in depth study of the concepts of social and economic justice relative to the practice of social work including power and economic distribution, oppression, discrimination and confronting injustice.

**Prerequisites:** SOCW 2210 with a minimum grade of D-

**SOCW 3030 Survey Of Social Work Assessment Tools**

[3 credit hours]

Provides an overview of various tools used by social workers in practice including use of DSM IV, individual, family, group, organization and community assessments.

**Prerequisites:** SOCW 2210 with a minimum grade of D-

**SOCW 3040 Social Work With Older Adults**

[3 credit hours]

History and development of practice with older adults. Trends in aging, services for older adults, health care, social security, retirement, elder abuse, substitute care decision, hospice, loss, death and dying.

**Prerequisites:** SOCW 2010 with a minimum grade of D-

**Term Offered:** Summer, Fall

**SOCW 3050 Crisis Intervention**

[3 credit hours]

Provides an examination of crisis intervention theories and strategies to deal with stress. Emphasis is on observing, formulating, defining and measuring the threats, tasks and opportunities associated with crisis behavior.

**Prerequisites:** SOCW 2010 with a minimum grade of D-

**SOCW 3060 Social Work Ethics**

[3 credit hours]

Examination of social work values and their professional implications. Provision of working knowledge of Social Work Code of Ethics and licensing and subsequent professional responsibilities. Integration of theoretical models with practice situations.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring, Summer

**SOCW 3070 Child Welfare I**

[3 credit hours]

Child welfare history. Knowledge, concepts and skill development concerning child maltreatment and protection, risk assessment and family-centered services.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

**SOCW 3080 Women In Poverty**

[3 credit hours]

Provides an understanding of women's poverty and its perpetuation through marriage and divorce, women's work and wages, welfare, children, child support and the economics of the unpaid women's labor.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**SOCW 3090 Social Work Perspectives On Culture And Oppression**

[3 credit hours]

Focus is on vulnerable and oppressed groups who are among social welfare consumers. Cultural characteristics and group strengths, needs, priorities and experiences within the context of social work are also explored.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring

**SOCW 3110 Social Work Practice I**

[3 credit hours]

An overview of generalist social work practice with various system sizes. Emphasizes strengths, empowerment, social and economic justice, ethical practice and examination of self in relation to professional social work. Must be admitted to the social work program.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

**SOCW 3120 Social Work Interviewing And Recording**

[4 credit hours]

Develops skills needed for the generalist social work interview and appropriate recording techniques. Integrates computer simulation, role-play and video recording for a participatory learning experience.

**Prerequisites:** SOCW 3110 with a minimum grade of C

**Term Offered:** Spring

**SOCW 3170 Child Welfare II**

[3 credit hours]

Addresses the developmental and permanence needs of children, effects of maltreatment on children, placement issues, separation, reunification and adoption. Includes child welfare services for children with developmental disabilities.

**Prerequisites:** (SOCW 3070 with a minimum grade of C and SOCW 2010 with a minimum grade of C)

**Term Offered:** Spring

**SOCW 3210 Human Behavior in the Soc Environment I**

[3 credit hours]

Theoretical social-work related approaches to understanding human behavior and related biological, psychological, social, cultural and environmental factors affecting individuals, families and groups, from infancy to adolescence, within the context of diversity.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

**SOCW 3220 Human Behavior In Social Environment II**

[3 credit hours]

Theoretical social work - related approaches to understanding human behavior and related biological, psychological, social, cultural and environmental factors affecting individual, family and group behavior, from young adulthood to old age.

**Prerequisites:** SOCW 3210 with a minimum grade of C

**Term Offered:** Spring

**SOCW 3230 Human Behavior in the Social Environment III**

[3 credit hours]

This course provides a view of behavior of larger systems including groups, organizations, and communities through a strengths perspective, focusing on social and economic justice, and the values of the social work profession.

**Prerequisites:** SOCW 3210 with a minimum grade of C

**Term Offered:** Spring, Fall

**SOCW 3300 Social Policy And Legislation**

[3 credit hours]

An examination of current social welfare issues and theories and the significance to the social, economic and political factors which influence policymaking and implementation.

**Prerequisites:** PSC 1200 with a minimum grade of C

**Term Offered:** Summer, Fall

**SOCW 3410 Social Work Research Practicum I**

[3 credit hours]

Presentation of basic methods used in social work research. Practice based methods are emphasized. Course content will focus on scientific methods of building knowledge for evidence-based social work practice.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

**SOCW 3420 Social Work Research Practicum II**

[3 credit hours]

Develop student competency in use of statistical applications in applied social work research. Entails continuation and completion of community-based research project started in Research Practicum I.

**Prerequisites:** SOCW 3410 with a minimum grade of C

**Term Offered:** Spring

**SOCW 3510 Interpersonal Practice with Lesbian, Gay, Bisexual, Transgender and Queer Individuals**

[3 credit hours]

This course will provide an introduction and overview of sexual orientation and gender identity and expand understanding of how to implement affirmative models of practice with LGBTQ individuals, families and communities. Course content will include: perspectives on gender, identity formation, impact of homophobia, biphobia, and transphobia, affirming interventions with lesbian, gay, bisexual and transgendered persons, families, youth, communities and aging; and specific challenges facing the LGBT communities such as homelessness, domestic violence, bullying, and policy.

**Prerequisites:** SOCW 1030 with a minimum grade of D- and SOCW 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**SOCW 3520 Human Animal Interaction, Health and Wellness**

[3 credit hours]

The majority of households in the United States have a companion animal. This course provides an overview of how human-animal interactions (HAI) and the human-animal bond (HAB) impact human health and well-being. Topics include: the social, physical and emotional/psychological impacts across the lifespan; therapeutic roles of animals; animal welfare and ethical considerations; and the connection between violence toward people and violence toward animals.

**Term Offered:** Spring, Summer, Fall

**SOCW 3530 Health Care Social Work Experiences with Interprofessional Teaming**

[1-3 credit hours]

Students will be introduced to the unique demands of health care social work (3 credits more content and more assignments). Students will utilize generalist skills developed in their BSW program to negotiate the interdisciplinary classroom by participating in real-world problem solving and simulations by joining students from across the University of Toledo campuses and the free clinic to learn how to be an integral part of health care with an emphasis on just service delivery.

**Term Offered:** Fall

**SOCW 4120 Social Work Practice II**

[3 credit hours]

Provides advanced theory and skill development as a generalist social worker with organizations and communities. Emphasis is on a strengths and empowerment perspective focused on social and economic justice.

**Prerequisites:** SOCW 3110 with a minimum grade of C and SOCW 3120 with a minimum grade of C

**Term Offered:** Fall

**SOCW 4130 Social Work Practice III**

[3 credit hours]

Provides advanced theory and skill development as a generalist social worker with individuals, families and groups. Emphasis is on a strengths and empowerment perspective focused on social and economic justice.

**Prerequisites:** SOCW 4120 with a minimum grade of C and SOCW 4200 with a minimum grade of C and SOCW 4220 with a minimum grade of C

**Term Offered:** Spring

**SOCW 4200 Field Laboratory II**

[1 credit hour]

Integration of field experience and proactive principles.

**Term Offered:** Fall

**SOCW 4210 Field Seminar III**

[1 credit hour]

Integration of field experience and proactive principles.

**Prerequisites:** SOCW 4120 with a minimum grade of C and SOCW 4200 with a minimum grade of C and SOCW 4220 with a minimum grade of C

**Term Offered:** Spring

**SOCW 4220 Social Work Field Experience II**

[5 credit hours]

A professional experience in generalist social work practice with an integration of classroom learning with practice in a social agency. Must be taken in successive semesters during a single academic year. Application for entry to field placement must be submitted to social work office during spring semester prior to fall placement.

**Term Offered:** Fall

**SOCW 4230 Field Experience III**

[5 credit hours]

A professional experience in generalist social work practice with an integration of classroom learning with practice in a social agency. Must be taken in successive semesters during a single academic year. Application for entry to field placement must be submitted to social work office during spring semester prior to fall placement.

**Prerequisites:** SOCW 4220 with a minimum grade of C and SOCW 4200 with a minimum grade of C and SOCW 4120 with a minimum grade of C

**Term Offered:** Spring

**SOCW 4500 Appreciating Diversity In Social Work Practice**

[3 credit hours]

This course focuses upon the cultural group strengths, needs, priorities and experiences of ethnic/racial groups in the U.S. through a social welfare perspective. Individual and institutional racism are examined.

**Prerequisites:** SOCW 2210 with a minimum grade of D-

**SOCW 4960 Honors Thesis**

[1-6 credit hours]

Senior standing and approval of the department honor adviser.

**Term Offered:** Spring, Summer, Fall

**SOCW 4980 Special Issues In Social Work**

[1-3 credit hours]

Courses on various social work specialties. May be repeated in different topics.

**Term Offered:** Spring, Summer, Fall

**SOCW 4990 Independent Study In Social Work**

[1-3 credit hours]

Designed for advanced students in social work to pursue supervised independent study in unlisted subject areas or to continue course work in greater depth. Written proposal required.

**Term Offered:** Spring, Summer, Fall

## Associate of Applied Science in Paralegal Studies

The University of Toledo offers an associate of applied science degree in paralegal studies. This degree requires 60 credit hours for graduation. A dynamic field of study, the program in paralegal studies prepares students to be an integral part of the legal team, working under the supervision and direction of attorneys. Paralegals assist attorneys by conducting interviews and investigations, researching cases, drafting legal documents, and assisting at real estate closings, depositions and trials. The associate degree program holds prestigious American Bar Association approval.

The degree program includes academic course work and practical experiences designed to develop the knowledge, critical thinking and communication skills necessary for contributing to the legal profession. All of the program faculty are licensed attorneys, judges and magistrates and are available for career advising.

Below is a sample plan of study. Consult your degree audit for your program requirements.

### AAS in Paralegal Studies

Course	Title	Hours
<b>First Term</b>		
HHS 1000	Health And Human Services/College Orientation	1
LGL 1010	Introduction To Law	3
LGL 1720	Law Practice Management	3
LGL 2120	Real Estate Transactions	3
MATH 1180 or MATH 1320	Reasoning With Mathematics or College Algebra	3
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
LGL 1150	Tort Law	3
LGL 1160	Legal Research, Writing And Case Analysis	3
LGL 2110	Estate & Probate Administration	3
Social Sciences Core		3
Hours		15

**Third Term**

BUAD 2040 or ACTG 1040	Financial Accounting Information or Principles Of Financial Accounting	3
LGL 2020	Civil Procedure	3
Law Elective (see below)		3
Arts/Humanities Core		3
Social Sciences Core		3
Hours		15

**Fourth Term**

BUAD 1020 or CMPT 1100	Micro-Computer Applications In Business or Microsoft Office Applications	3
LGL 2940	Legal Assisting Internship	3
Law Elective (see below)		3
Arts/Humanities Core		3
Elective		2
Hours		14
Total Hours		60

**Law Electives**

Code	Title	Hours
LGL 2130	Family Law	3
LGL 2210	Practices And Procedures In Administrative Law	3
LGL 2700	Advocacy: Mock Trial	3
LGL 3010	Law Of Business Associations	3
LGL 3030	Advanced Legal Research & Writing	3
LGL 3050	Bankruptcy Practices & Consumer Applications	3
LGL 3330	Litigation	3
LGL 4030	Contract Law	3
LGL 4130	Clinic Experience	3

## BS in Criminal Justice

The University of Toledo offers a bachelor of science degree in criminal justice. The degree requires 120 credit hours for graduation. The criminal justice program prepares students to enter law enforcement, corrections, probation, parole, private security, juvenile justice and related careers. In addition, the B.S. program provides preparation for students who wish to attend graduate school in criminal justice, a related field, or law school.

The undergraduate curriculum consists of a liberal arts core, criminal justice core and electives, general electives and supporting courses from related disciplines (e.g., political science, public administration, sociology, history, business and social work) to form an understanding of justice. Because good communication and computer skills are important to the criminal justice professional and to students planning to attend graduate or law school, courses in writing, speaking and computer use are part of the curriculum. The faculty is committed not only to teaching about criminal justice systems but also to challenging students to explore the concept of justice and to develop their own ethical paradigms. Accordingly, course work in ethics is required. Faculty members emphasize the development of critical thinking as well as analytical and problem-solving skills in their instruction.

The entire bachelor of science degree in criminal justice can be completed online.

Check with the criminal justice program for specific information on opportunities and qualifications to attend a police academy as a UToledo student.

Required courses. Grade of "C" or better required.

Code	Title	Hours
CRIM 1010	Criminal Justice	3
CRIM 1040	HUMAN RELATIONS AND DIVERSITY IN CRIMINAL JUSTICE	3
CRIM 1110	Penology	3
CRIM 1240	Policing	3
CRIM 2050	Applied Criminology	3
CRIM 2200	Criminal Law	3
CRIM 2230	Criminal Procedure	3
CRIM 2250	Juvenile Justice	3
CRIM 3210	Applied Psychology for Criminal Justice Personnel	3
CRIM 4100	Criminal Justice Research Methods	3
CRIM 4200	Ethics In Criminal Justice	3
CRIM 4300	Theories Of Criminal Justice	3
CRIM 4590	Administration Of Criminal Justice	3
Criminal Justice Electives (select a minimum of four)		
CRIM 2210	Criminal Investigation I	
CRIM 2220	Laws Of Evidence	
CRIM 3110	Hate Crimes	
CRIM 3220	Crime Mapping And Criminal Profiling	
CRIM 3230	White Collar Crime	
CRIM 3240	Victimology	
CRIM 3250	Women and Crime	
CRIM 3290	Criminal Investigation II	
CRIM 3300	Sex Crimes	
CRIM 4000	Narcotics Policy and Enforcement	
CRIM 4010	Probation and Parole	
CRIM 4410	Criminal Forensic and Trial Practice	
CRIM 4450	Administration Of Police Services	
CRIM 4490	Current Topics-Crim	
CRIM 4520	Police And Society	
CRIM 4940	Criminal Justice Internships	
CRIM 4990	Independent Study In Criminal Justice	

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BS in Criminal Justice

Course	Title	Hours
<b>First Term</b>		
BUAD 1020 or CMPT 1100	Micro-Computer Applications In Business or Microsoft Office Applications	3
CRIM 1010	Criminal Justice <sup>1</sup>	3



CRIM 1040	HUMAN RELATIONS AND DIVERSITY IN CRIMINAL JUSTICE <sup>1</sup>	3
HHS 1000	Health And Human Services/College Orientation	1
ENGL 1110	College Composition I	3
SOC 1010	Introduction To Sociology	3
Hours		16

**Second Term**

CRIM 1110	Penology <sup>1</sup>	3
CRIM 1240	Policing <sup>1</sup>	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics	3
Diversity of US		3
Hours		15

**Third Term**

CRIM 2200	Criminal Law <sup>1</sup>	3
CRIM 2230	Criminal Procedure <sup>1</sup>	3
Arts/Humanities Core		3
Natural Sciences Core		3
Core Elective (2000-level)		3
Hours		15

**Fourth Term**

CRIM 2050	Applied Criminology <sup>1</sup>	3
CRIM 2250	Juvenile Justice <sup>1</sup>	3
PSC 1200	American National Government	3
Natural Sciences Core		3
Natural Sciences Core Laboratory		1
Elective (2000-level)		3
Hours		16

**Fifth Term**

PSY 1010	Principles Of Psychology	3
Criminal Justice Elective <sup>1</sup>		3
Arts/Humanities Core		3
Non-US Diversity		3
Core Elective		3
Hours		15

**Sixth Term**

CRIM 3210	Applied Psychology for Criminal Justice Personnel <sup>1</sup>	3
CRIM 4100	Criminal Justice Research Methods <sup>1</sup>	3
Criminal Justice Elective <sup>1</sup>		3
Elective (Upper-level)		6
Hours		15

**Seventh Term**

CRIM 4200	Ethics In Criminal Justice <sup>1</sup>	3
CRIM 4590	Administration Of Criminal Justice <sup>1</sup>	3
Elective (Upper-level)		9
Hours		15

**Eighth Term**

Criminal Justice Elective <sup>1</sup>		3
Criminal Justice Elective <sup>1</sup>		3
Elective (2000-level)		7
Hours		13
Total Hours		120

<sup>1</sup> A "C" or better is required for this course.

## BS in Paralegal Studies

The University of Toledo offers a bachelor of science degree in paralegal studies. The degree requires 120 credit hours for graduation. A dynamic field of study, the program in paralegal studies prepares students to be an integral part of the legal team, working under the supervision and direction of attorneys. Paralegals assist attorneys by conducting interviews and investigations, researching cases, drafting legal documents, and assisting at real estate closings, depositions and trials. The baccalaureate degree program holds prestigious American Bar Association approval.

The degree program includes academic course work and practical experiences designed to develop the knowledge, critical thinking and communication skills necessary for contributing to the legal profession. All of the program faculty are licensed attorneys, judges and magistrates and are available for career advising.

**Pre-law studies**

No particular degree is required for admission to law school. Successful law students must possess good communication, logic and analytical skills, and have a fundamental understanding of the legal system. The paralegal studies program provides students with an excellent pre-law program by teaching those important skills. Graduates with a baccalaureate degree in paralegal studies who meet certain criteria will receive guaranteed admission to The University of Toledo College of Law. Contact the program office at 419.530.7746 for more information.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BS in Paralegal Studies

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
HHS 1000	Health And Human Services/College Orientation	1
LGL 1010	Introduction To Law	3
LGL 1720	Law Practice Management	3
LGL 2120	Real Estate Transactions	3
MATH 1180	Reasoning With Mathematics	3
Hours		16
<b>Second Term</b>		
BUAD 1020 or CMPT 1100	Micro-Computer Applications In Business or Microsoft Office Applications	3

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
LGL 1150	Tort Law	3
LGL 1160	Legal Research, Writing And Case Analysis	3
Social Sciences Core		3
Hours		15

**Third Term**

BUAD 2040 or ACTG 1040	Financial Accounting Information or Principles Of Financial Accounting	3
LGL 2020	Civil Procedure	3
LGL 2130	Family Law	3
LGL 2700	Advocacy: Mock Trial	3
Social Sciences Core		3
Hours		15

**Fourth Term**

LGL 2110	Estate & Probate Administration	3
LGL 2210	Practices And Procedures In Administrative Law	3
PHIL 1020	Critical Thinking	3
Arts/Humanities Core		3
Core Elective (2000-level)		3
Hours		15

**Fifth Term**

LGL 3030	Advanced Legal Research & Writing	3
LGL 3050	Bankruptcy Practices & Consumer Applications	3
Legal Specialties Option Elective <sup>1</sup>		3
Natural Sciences Core		3
Natural Sciences Core Laboratory		1
PHIL 3000/4000 Philosophy Elective		3
Hours		16

**Sixth Term**

LGL 3010	Law Of Business Associations	3
LGL 3330	Litigation	3
LGL 4130	Clinic Experience	3
Legal Specialties Option Elective <sup>1</sup>		3
Natural Sciences Core		3
Hours		15

**Seventh Term**

LGL 4030	Contract Law	3
Legal Specialties Option Elective <sup>1</sup>		3
PHIL 3000/4000 Philosophy Elective		3
Core Elective (2000-level)		3
Non-US Diversity		3
Hours		15

**Eighth Term**

LGL 4940	Advanced Paralegal Internship	3
Legal Specialties Option Elective <sup>1</sup>		3
Core Elective (2000-level)		3
Diversity of US		3

Elective (2000-level)	1
Hours	13
Total Hours	120

<sup>1</sup> At least two Legal Specialties Option Electives must be upper-level.

## BSW in Social Work

The University of Toledo offers a bachelor of social work degree. This degree requires 120 credit hours for graduation. The undergraduate social work program is fully accredited by the Council on Social Work Education. The program prepares students for entry into the beginning level of professional social work practice as generalist social workers who work in a variety of system sizes with various population groups. Graduates of the program meet the educational requirements for licensing at the Licensed Social Worker (L.S.W.) level in the State of Ohio.

### Departmental Honors in Social Work

Qualified juniors and seniors may apply to work for honors in social work.

**The following are requirements for admission to the departmental honors program in social work:**

- Minimum GPA of 3.3 in social work courses
- Minimum cumulative GPA of 3.0
- 12 hours completed work in social work, and
- Qualification as a social work major.

Upon admission to the departmental honors program in social work, the student must complete nine hours of independent work in social work. During the final semester before graduation, the student must pass a comprehensive examination or complete a research project. The honors topic and research project are to be developed in close conjunction with a faculty advisor. Students should discuss their special interests with faculty members or with an advisor who will help identify an appropriate faculty member to guide the honors work.

Students entering The University of Toledo with the intent of majoring in social work declare pre-social work as their major until they complete the requirements to apply and gain admission to the social work program.

**Prior to applying to the social work program, the student must have:**

- Completed 30 semester hours of course work;
- Minimum UT GPA of 2.25; and
- Completed SOCW 1030 and SOCW 2010 with a minimum major GPA of 2.5 and a grade no less than C in each of these social work courses.

Admission to the social work program is selective; students will not be permitted to enroll in social work courses at the 3000 level or higher unless they have been admitted to the social work program. Applications are available from the social work advisor.

Students should follow and complete the degree requirements as displayed in the social work program degree chart. Students may not take P/NC in major courses or related courses except SOCW 4220.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BSW in Social Work

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
HHS 1000	Health And Human Services/College Orientation	1
MATH 1180	Reasoning With Mathematics	3
SOC 1010	Introduction To Sociology	3
SOCW 1030	Introduction To Social Welfare <sup>1</sup>	3
Arts/Humanities Core		3
Hours		16
<b>Second Term</b>		
BIOL 1120	Survey Of Biology	3
ECON 1010	Introduction To Economic Issues	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Arts/Humanities Core		3
WGST Course		3
Hours		15
<b>Third Term</b>		
CMPT 1100	Microsoft Office Applications	3
PSC 1200	American National Government <sup>1</sup>	3
PSY 1010	Principles Of Psychology	3
SOCW 2010	Survey Of The Social Work Profession <sup>1</sup>	4
Elective		3
Hours		16
<b>Fourth Term</b>		
ANTH 2800	Cultural Anthropology	3
Natural Sciences Core		3
Natural Science Core Laboratory		1
Social Work Elective <sup>1</sup>		3
Elective		6
Hours		16
<b>Fifth Term</b>		
SOCW 3110	Social Work Practice I <sup>1</sup>	3
SOCW 3210	Human Behavior in the Soc Environment I <sup>1</sup>	3
SOCW 3300	Social Policy And Legislation <sup>1</sup>	3
SOCW 3410	Social Work Research Practicum I <sup>1</sup>	3
AFST, DST, PSY, SOC or WGST course		3
Hours		15
<b>Sixth Term</b>		
SOCW 3120	Social Work Interviewing And Recording <sup>1</sup>	4
SOCW 3220	Human Behavior In Social Environment II <sup>1</sup>	3
SOCW 3230	Human Behavior in the Social Environment III <sup>1</sup>	3
SOCW 3420	Social Work Research Practicum II <sup>1</sup>	3

SOCW 3090	Social Work Perspectives On Culture And Oppression <sup>1</sup>	3
Hours		16
<b>Seventh Term</b>		
SOCW 4120	Social Work Practice II <sup>1</sup>	3
SOCW 4200	Field Laboratory II <sup>1</sup>	1
SOCW 4220	Social Work Field Experience II <sup>1</sup>	5
Diversity of US (History)		3
Hours		12
<b>Eighth Term</b>		
SOCW 4130	Social Work Practice III <sup>1</sup>	3
SOCW 4210	Field Seminar III <sup>1</sup>	1
SOCW 4230	Field Experience III <sup>1</sup>	5
Elective		5
Hours		14
Total Hours		120

<sup>1</sup> A "C" or better is required in this course.

## Certificate in Nurse Paralegal

The University of Toledo offers a nurse paralegal certificate program. This is a 21 credit hour program for students who have at least an associate's degree in nursing, hold a current R.N. license, and have at least 2,000 hours of nursing experience.

The nurse paralegal certificate program prepares practicing nurses for careers in law where medical education and experience are needed. Examples of these areas of the law are medical malpractice, personal injury, workers compensation, wrongful death and social security. The certificate program includes academic course work and practical experiences designed to develop the knowledge, critical thinking and communication skills necessary for contributing to the legal profession.

A dynamic field of study, the program in paralegal studies prepares students to be an integral part of the legal team, working under the supervision and direction of attorneys. Paralegals assist attorneys by conducting interviews and investigations, researching cases, drafting legal documents, and assisting at real estate closings, depositions and trials. The certificate program holds prestigious American Bar Association approval. All of the program faculty are licensed attorneys, judges and magistrates and are available for career advising.

Below is a sample curriculum for the certificate program. Sample curriculum is subject to change. Please consult the department for up-to-date information.

Course	Title	Hours
<b>First Term</b>		
LGL 1010	Introduction To Law	3
LGL 1720	Law Practice Management	3
LGL 2020	Civil Procedure	3
Hours		9
<b>Second Term</b>		
LGL 1150	Tort Law	3

LGL 1160	Legal Research, Writing And Case Analysis	3
LGL 2210	Practices And Procedures In Administrative Law	3
Hours		9
<b>Third Term</b>		
LGL 2940	Legal Assisting Internship	3
Hours		3
Total Hours		21

## Minor in Data Science

The minor in data science is designed to teach functional data science skills that supplement virtually any major. Through “hands on” exercises, students will learn to write computer code, design multi-source data files, and analyze, visualize, and report data findings using popular software such as SAS (or R), Python, SQL, Excel and Tableau. In the customized capstone course, each student will analyze data that are relevant to a subject of interest, such as social science, health science, business, or engineering.

The minor requires 22 credit hours. All courses listed below are required.

Code	Title	Hours
CSET 1100	Introduction to Computer Science and Engineering 0-4 Technology	0-4
CSET 3300	Database-Driven Web Sites	4
HHS 2500	Data Science I	3
HHS 4500	Data Science II	3
HIM 2260	Legal Issues in HIM	2
MATH 3610	Statistical Methods I	3
MATH 3620	Statistical Methods II	3
Total Hours		18-22

## Minor in Criminal Justice

The minor in criminal justice gives the student an overview of the criminal justice discipline. It includes an introductory course and a foundation course in each of the four areas recommended by the Academy of Criminal Justice Sciences (i.e., penology, policing, constitutional law and juvenile justice). The remaining six hours give the student freedom to explore areas of interest in criminal justice. The minor requires 21 credit hours for completion.

Code	Title	Hours
<b>Required</b>		
CRIM 1010	Criminal Justice	3
CRIM 1110	Penology	3
CRIM 1240	Policing	3
CRIM 2230	Criminal Procedure	3
CRIM 2250	Juvenile Justice	3
Select 6 hours of CRIM Electives at the 3000/4000 level		
CRIM 3110	Hate Crimes	3
CRIM 3220	Crime Mapping And Criminal Profiling	3
CRIM 3230	White Collar Crime	3

CRIM 3240	Victimology	3
CRIM 3250	Women and Crime	3
CRIM 3290	Criminal Investigation II	3
CRIM 3300	Sex Crimes	3
CRIM 4000	Narcotics Policy and Enforcement	3
CRIM 4010	Probation and Parole	3
CRIM 4410	Criminal Forensic and Trial Practice	3
CRIM 4450	Administration Of Police Services	3
CRIM 4490	Current Topics-Crim	3
CRIM 4520	Police And Society	3
CRIM 4940	Criminal Justice Internships	3-12
CRIM 4990	Independent Study In Criminal Justice	1-3

## Minor in Forensic Science Investigation

The minor in forensic science investigation provides an overview of the importance of forensic science evidence in the criminal justice system. Students learn about:

- the rules and procedures of evidence pertaining to admissibility of scientific and physical material;
- the basic methods of collection, preservation and analysis of evidence; and
- the methods of presentation of evidence in court.

This minor is designed for students planning to work for law enforcement agencies to better understand the importance and types of forensic science evidence in criminal investigations. It is not designed for students who plan to work in a crime laboratory or in jobs requiring in-depth scientific analysis of evidence. Those students interested in forensic science will need to obtain a degree (preferably at the graduate level) in the natural sciences.

Code	Title	Hours
<b>Required<sup>1</sup></b>		
BIOL 2010	Major Concepts In Biology	3
CHEM 1100	Chemistry And Society	3
CHEM 1150	Chemistry And Society Laboratory	1
CRIM 2210	Criminal Investigation I	3
CRIM 2220	Laws Of Evidence	3
CRIM 3290	Criminal Investigation II	3
CRIM 4940	Criminal Justice Internships	3
EXSC 1560	Fundamentals of Anatomy and Physiology	3
EXSC 1460	Fundamentals of Anatomy and Physiology Lab	1
Total Hours		23

<sup>1</sup> Students will be responsible for meeting all of the prerequisites and co-requisites for the required courses in the minor.

## Minor in Legal Specialties

The minor in legal specialties requires 21 credit hours. It includes academic course work and practical experiences designed to develop

the knowledge, critical thinking and communication skills necessary for contributing to the legal profession. All of the program faculty are licensed attorneys, judges and magistrates and are available for career advising.

Below is a sample curriculum for the minor in legal specialties. Sample curriculum is subject to change. Please consult the department for up-to-date information.

Code	Title	Hours
<b>Required Course</b>		
LGL 1010	Introduction To Law	3
LGL 1150	Tort Law	3
LGL 2120	Real Estate Transactions	3
<b>Electives</b>		
Select four of the following:		12
LGL 1160	Legal Research, Writing And Case Analysis	
LGL 2020	Civil Procedure	
LGL 2110	Estate & Probate Administration	
LGL 2130	Family Law	
LGL 2700	Advocacy: Mock Trial	
LGL 3010	Law Of Business Associations	
LGL 3110	Personal Law (Prereq. Junior Standing or Instructor Permission)	
LGL 3120	Personal Law II	
LGL 4030	Contract Law	
LGL 4230	Health Care And The Law (Prereq. Junior Standing or Instructor Permission)	
LGL 4330	Mediation: Topics And Techniques	
Total Hours		21

## Post Baccalaureate Certificate in Paralegal Studies

The University of Toledo offers a post-baccalaureate certificate in paralegal studies. This certificate requires 30 credit hours for graduation. An earned bachelor's degree is required for admission to the certificate program.

A dynamic field of study, the program in paralegal studies prepares students to be an integral part of the legal team, working under the supervision and direction of attorneys. Paralegals assist attorneys by conducting interviews and investigations, researching cases, drafting legal documents, and assisting at real estate closings, depositions and trials. The certificate program holds prestigious American Bar Association approval.

The post-baccalaureate certificate program includes academic course work and practical experiences designed to develop the knowledge, critical thinking and communication skills necessary for contributing to the legal profession. All of the program faculty are licensed attorneys, judges and magistrates and are available for career advising.

Below is a sample curriculum for the Post Baccalaureate Certificate in Paralegal Studies program. Sample curriculum is subject to change. Please consult the department for up-to-date information.

## Post Baccalaureate Certificate in Paralegal Studies

Course	Title	Hours
<b>First Term</b>		
LGL 1010	Introduction To Law	3
LGL 1720	Law Practice Management	3
LGL 2020	Civil Procedure	3
LGL 2120	Real Estate Transactions	3
Law Elective (see below)		3
Hours		15
<b>Second Term</b>		
LGL 1150	Tort Law	3
LGL 1160	Legal Research, Writing And Case Analysis	3
LGL 2110	Estate & Probate Administration	3
LGL 2940	Legal Assisting Internship <sup>1</sup>	3
Law Elective (see below)		3
Hours		15
Total Hours		30

<sup>1</sup> Although the Legal Assisting Internship may be taken by post-baccalaureate certificate students during their second semester, it is strongly suggested that it be taken alone in the student's third semester.

### Law Electives

Code	Title	Hours
LGL 2130	Family Law	3
LGL 2210	Practices And Procedures In Administrative Law	3
LGL 2700	Advocacy: Mock Trial	3
LGL 3010	Law Of Business Associations	3
LGL 3030	Advanced Legal Research & Writing	3
LGL 3050	Bankruptcy Practices & Consumer Applications	3
LGL 3330	Litigation	3
LGL 4030	Contract Law	3
LGL 4130	Clinic Experience	3

## Faculty

### School of Exercise & Rehabilitation Sciences

**David Bazett-Jones**, 2018, associate professor, B.S., University of Wisconsin-La Crosse; M.S., Ball State University; Ph.D., University of Wisconsin-Milwaukee

**Jamal Bittar**, 2003, senior lecturer, B.S., M.S., M.E., M.Ed., P.T.D., The University of Toledo



**Amy Both**, 1994, clinical assistant professor, B.S., The Ohio State University; M.H.S., University of Indianapolis

**Lucinda Bouillon**, 2014, associate professor, B.Ed., M.Ed., Ph.D., The University of Toledo, M.P.T., University of Findlay

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**Neal Glaviano**, 2016, assistant professor, B.S. University of Connecticut; M.Ed., Ph.D., University of Virginia

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**Eric Longsdorf**, 2001, associate professor, B.Ed., M.Ed., Ph.D., The University of Toledo

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**Thomas McLoughlin**, 2004, associate professor, B.S., Ithaca College; M.A., Adelphi University; Ph.D., The University of Toledo

**Alexia Metz**, 2007, associate professor, B.A. Eastern Michigan University, Ph.D. Northwestern University

**Andrew Misko**, 2017, assistant lecturer, B.S., M.S., The University of Toledo

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**Heather Robbins**, 2007, senior lecturer, B.S., Defiance College; M.S. Bowling Green State University

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**Tori Smith**, 2007, clinical assistant professor, B.S., Michigan State University; M.S., Duke University

**Nicole Stotz**, 2015, assistant professor, B.S., O.T.D., The University of Toledo

**Jerome Sullivan**, 2017, professor emeritus - in service, B.S., Ohio University; M.S., Ph.D., The University of Toledo

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## School of Intervention & Wellness

**Madeline Clark**, 2016, assistant professor, B.S., M.S.Ed., Ph.D., Old Dominion University

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**Hansori Jang**, 2017, assistant professor, B.A., The Catholic University of Korea; M.A., Hanyang University; Ph.D., The University of Iowa

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**Caroline Menezes**, 2008, associate professor, B.Sc., M.Sc., University of Madras; M.A., Ohio University; Ph.D., The Ohio State University

**Lori Pakulski**, 2000, professor, B.A., Michigan State University; M.S., Ph.D., Bowling Green State University

**Amy Remer**, 2014, lecturer, B.A., M.A., The University of Toledo

**Jennifer Reynolds**, 2011, associate professor, B.S., Michigan State University; M.A., Ph.D., Central Michigan University

**Christopher Roseman**, 2011, associate professor, B.A., M.A., Ph.D., The University of Toledo

**Tanesha Walker**, 2018, assistant professor, B.S., M.A., The Ohio State University; Ph.D., Kent State University

**Brandon J. Wood**, 2019, assistant professor, B.S., Northern Kentucky University; M.Ed., Ph.D., Indiana State University

## School of Population Health

**April Ames**, 2014, assistant professor, B.S., Ohio University; M.S.O.H., Medical College of Ohio; Ph.D., The University of Toledo

**Debra Boardley**, 1994, professor, B.S., Youngstown State University; M.H.S., Washington University; Ph.D., University of South Carolina

**Julie Coyle**, 2010, associate lecturer, M.Ed., The University of Toledo

**Joseph Dake**, 2006, professor and chair, B.A., M.P.H., Ph.D., The University of Toledo

**Nathan Drendel**, 2017, assistant lecturer, B.S., University of Minnesota; M.S., Bowling Green State University

**Brian Fink**, 2006, professor, B.E., The University of Toledo; M.P.H., University of Michigan; Ph.D., University of North Carolina

**Tavis Glassman**, 2008, professor, B.Ed., M.S.Ed., The University of Toledo; M.P.H., The Ohio State University; Ph.D., University of Florida

**Marie Janes**, 2002, senior lecturer, M.Ed., Bowling Green State University

**Timothy Jordan**, 2001, professor, B.S.E., Bowling Green State University; M.Ed., Ph.D., The University of Toledo

**Sadik Khuder**, 1994, professor, B.D.S., University of Baghdad; M.H., Ph.D., University of Alabama – Birmingham

**Henry Marshall**, 2000, associate lecturer, B.A., The University of Toledo; M.A., Siena Heights University; Ph.D., The University of Toledo

**Kimberly McBride**, 2014, associate professor, B.A., California State University; M.A., Humboldt State University; Ph.D., Indiana University

**Kip Miller**, 2018, assistant lecturer, B.B.A., M.B.A., Bowling Green State University

**Sheryl Milz**, 2001, associate professor, B.S., M.S., The Ohio State University; Ph.D., University of Illinois - Chicago; M.O.D., Bowling Green State University

**Jody Morris**, 2014, associate lecturer, B.Ed., M.S., The University of Toledo

**Paul Rega**, 2008, assistant professor, B.A., Fordham College; M.D., University of Rome (La Sapienza)

**Barbara Saltzman**, 2012, assistant professor, B.A. Brandeis University; M.P.H., University of Michigan; Ph.D., The Johns Hopkins Bloomberg School of Public Health

**Nilgun Sezginis**, 2008, associate lecturer, A.A.S., Owens Community College; B.S., Franklin University; M.P.H., Northwest Ohio Consortium for Public Health, The University of Toledo and Bowling Green State University

**Jiunn-Jye Sheu**, 2010, professor, B.Ed., National Taiwan Normal University; M.S.P.H., Kaohsiung Medical University; Ph.D., University of Texas, Austin

**Shipra Singh**, 2014, associate professor, M.B.B.S., Mahatma Ganhdi Memorial Medical College, Indore; M.P.H., Ph.D., University of Michigan

**Victoria Steiner**, 1995, associate professor, B.A., University of Wisconsin; M.S., Ph.D., Pennsylvania State University

**Amy Thompson**, 2009, professor, B.S., Central Michigan University; M.S.Ed., Ph.D., The University of Toledo

**Michael Valigosky**, 1991, assistant professor, B.E., The University of Toledo; M.S.O.H., Medical College of Ohio; Ph.D., The University of Toledo

## School of Social Justice

**Andrew Mick Dier**, 2012, associate lecturer, A.A.B., B.A., M.Ed., The University of Toledo

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**Louis Guardiola**, 2014, associate lecturer and assistant dean for diversity and inclusion, B.S.W., The University of Toledo, M.S.W., Cleveland State University

**Janet M. Hoy-Gerlach**, 2008, associate professor, B.S.W., Bowling Green State University; M.S., Ph.D., Case Western Reserve University

**David Lilley**, 2014, assistant professor, B.S., Grand Valley State University; M.S., Ph.D., Michigan State University

**Aravindhan Natarajan**, 2010, associate professor, B.A., M.A., University of Madras; Ph.D., Case Western Reserve University

**Mamta Ojha**, 2017, assistant professor, B.A., Isabella Thornton College; M.S.W., Ph.D., University of Kentucky

**Megan Petra**, 2014, assistant professor, B.S., University of Wisconsin-Madison; B.A., M.S.W., University of Minnesota; Ph.D., Washington University

**Michael Prior**, 2006, associate professor, B.A., Eastern Michigan University; M.S.S.W., Ph.D., University of Texas at Arlington

**Meredith Rinna**, 2018, assistant lecturer, B.S.C., Ohio University; M.S.S.A., Case Western Reserve University

**John J. Schlageter, III**, 2005, Senior Lecturer, B.A., University of Cincinnati; J.D., The University of Toledo

**John H. Shuba**, 2010, associate lecturer, B.Ed., M.P.A., J.D., The University of Toledo

**Sandra Sieben**, 2018, assistant lecturer, B.A., College of Mount St. Joseph; M.S.W., University of Michigan

**Heather Sloane**, 2009, associate professor, B.S., The College of William and Mary; M.S.W., Virginia Commonwealth University; Ph.D., Bowling Green State University

**Megan Stewart**, 2015, assistant professor, B.A., Miami University; M.S., Ph.D., University of Cincinnati

**Sherry Tripepi**, 2007, associate lecturer, B.S.S.W., Bowling Green State University; M.S.W., Wayne State University

**Kasey Tucker-Gail**, 2004, professor, B.S., Lake Superior State University; M.S., Ferris State University; Ph.D. Western Michigan University

**Nicole Tuori**, 2004, lecturer, B.A. Miami University; J.D. The University of Toledo

**James Tuschman**, 2013, lecturer, B.S., Miami University; J.D., The Ohio State

**Celia Williamson**, 2000, distinguished professor, A.A.S., B.S., The University of Toledo; M.S.S.A., Case Western Reserve University; Ph.D., Indiana University

# COLLEGE OF NATURAL SCIENCES AND MATHEMATICS

## undergraduate CATALOG

Wolfe Hall, Room 2246  
419.530.7840

## Mission Statement

The Faculty of The University of Toledo's College of Natural Sciences and Mathematics seek to build and disseminate foundational and applicable knowledge through excellence in teaching, research and discovery, and community engagement; foster the advancement of science, mathematics and technology locally, regionally, and globally; and serve as a transformative force within a diverse, interdisciplinary, and collaborative education environment for improving our world through science and mathematics.

## Contacts

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## Programs and Centers

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## Degrees Offered

- Department of Biological Sciences (p. 350)
  - BA in Biology (p. 353)
  - BS in Biology (p. 354)
  - BS in Medical Technology (p. 357)
  - Minor in Biology (p. 358)
- Department of Chemistry & Biochemistry (p. 358)
  - BA in Biochemistry (p. 365)
  - BA in Chemistry (p. 366)
  - BS in Biochemistry (p. 368)
  - BS in Chemistry (p. 369)
  - Minor in Chemistry (p. 370)
  - Minor in Green Chemistry & Engineering (p. 371)
- Department of Environmental Sciences (p. 371)
  - BA in Environmental Studies (p. 377)
  - BS in Environmental Sciences (p. 379)
  - BS in Geology (p. 381)
  - BS in Biology with a Concentration in Ecology and Organismal Biology (p. 378)
  - Minor in Environmental Sciences (p. 382)
  - Minor in Geology (p. 382)
- Department of Mathematics and Statistics (p. 382)
  - BA in Mathematics (p. 389)
  - BS in Mathematics (p. 392)
  - Minor in Mathematics (p. 398)
- Department of Physics and Astronomy (p. 398)
  - BA in Astronomy (p. 402)
  - BA in Physics (p. 404)
  - BS in Physics (p. 405)
  - Minor in Astrophysics (p. 409)
  - Minor in Physics (p. 409)
  - Minor in Renewable Energy (p. 409)
- BS in General Studies (p. 348)
- Pre-Medical, Pre-Dental and Pre-Veterinary Concentrations (p. 349)
- Honors (p. 349)

## Accreditation

The College of Natural Sciences and Mathematics' Bachelor of Science in Medical Technology program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). In addition, the Bachelor of Science in Chemistry and the Bachelor of Science in Biochemistry are certified by the American Chemical Society (ASC).

## Admission Policies

### New first-year students must:

1. submit a college test score (ACT or SAT) and
2. have either a 2.75 high school GPA or ACT composite of 21 (SAT combined reading and math score of 950 if taken before March 2016, new SAT score of 1030 if taken March 2016 or after)

to be admitted to the College of Natural Sciences and Mathematics. Applicants not meeting these standards will be admitted to the Department of Exploratory Studies in University College. Students applying who want to be admitted as BS Biology degree program in the Department of Biological Sciences must have both a minimum high school GPA of 2.75 AND an ACT composite of 21. Students not meeting this requirement but meeting the minimum college requirements will be admitted to the BA Biology degree program.

To be considered for admission to the pre-medical, pre-dental and pre-veterinary programs, students will need a minimum high school cumulative GPA of 3.2 and an ACT composite score of 25 (or minimum SAT combined reading and math score of 1150 if taken before March 2016, new SAT score of 1220 if taken March 2016 or after). Students should also have successfully completed a minimum of three years of high school mathematics (algebra I, algebra II and geometry) and high school chemistry. Applicants not meeting these standards but meeting the Natural Sciences and Mathematics college admission standards will be admitted to the College of Natural Sciences and Mathematics degree program of their choice or as BS-UND (undeclared).

## Change of College

Students in good standing (i.e. with a cumulative UT GPA of 2.0 or higher) who wish to change from another college at The University of Toledo to the College of Natural Sciences and Mathematics should make an appointment with a college adviser in the College Student Services Office to discuss their transfer and have their academic records reviewed. All college requirements, including core, skill area, distributive, major and related requirements, must be fulfilled as specified in the catalog for the year in which the student enters the College of Natural Sciences and Mathematics. Credit restrictions and level requirements for Natural Sciences and Mathematics students will apply. Continuing UT students seeking admission to pre-medical, pre-dental and pre-veterinary programs must have a 3.0 cumulative college GPA and have completed CHEM 1090 or CHEM 1230 and MATH 1320 or higher with a B or better.

## Change of Catalog Year

Continuing students who declared a major within the College of Natural Sciences and Mathematics prior to Fall 2012 may change to the current catalog year. Interested students should visit the Student Services Office (UH 3000) and meet with their academic advisor to officially declare their new catalog year.

## Admission with Transfer Credit from Another Institution

No more than 94 semester hours of credit earned at other institutions may apply toward a degree in the College of Natural Sciences and Mathematics. Course work from other institutions is accepted at the level the equivalent course is taught at The University of Toledo. Students with transfer credit are generally expected to fulfill all University and College course requirements for a degree in the College of Natural Sciences and Mathematics as specified in the catalog for the year in which they enter the College of Natural Sciences and Mathematics. In some cases, not all the credits that transfer into The University of Toledo will apply toward a degree in the College of Natural Sciences and Mathematics, e.g., developmental courses. Transfers from other institutions shall take at least 30 semester hours at The University of Toledo, including 12



semester hours of work in their major field and 9 semester hours in their minor field, regardless of the number of hours transferred.

Students transferring to the University of Toledo in Spring 2007 or later, including transfer readmits, must meet minimum GPA requirements in their Natural Sciences and Mathematics majors and minors with both:

1. the grades of all courses attempted at UT and
2. in a second calculation, the grades of all courses attempted at all institutions (including UT).

The grades of all courses (from all institutions) which are used by those students to satisfy UT Core requirements must be used in the calculation of the UT General Education GPA.

UT students who attend other institutions as guests or transient students must also meet minimum GPA requirements in their Natural Sciences and Mathematics majors and minors with:

1. the grades of all courses attempted at UT and
2. in a second calculation, the grades of all courses attempted at all institutions (including UT).

The grades of all courses (from all institutions) which are used by those students to satisfy UT Core requirements must be used in the calculation of the UT General Education GPA.

For the purposes of meeting minimum cumulative GPA's in a student's Natural Sciences and Mathematics major(s) and/or minor(s) and the UT Core, the grades of all courses attempted at all institutions will be included in the GPA calculation(s). Note: Due to technological limitations of UT's current Degree Audit Reporting System, Degree Audit GPA calculations for students who have taken courses at other institutions may not be accurate. Consult a college staff advisor if you have questions.

Transfer students should note that The University of Toledo will include all course work taken at all institutions of higher education in the calculation to determine if a student will graduate with honors. All college course work ever taken is computed in determining eligibility for graduation with honors, although no student will be awarded a level of honors above that indicated by The University of Toledo cumulative grade point average (GPA). Note: The University of Toledo requires a minimum of 30 semester hours of standard letter graded courses from UT in order to qualify for graduation with honors.

An applicant who has undertaken courses at a regionally accredited college or university and who submits through the Office of Undergraduate Admission for Adult, Transfer and Military Students an official transcript listing courses and grades and giving evidence of good standing will be admitted to the College of Natural Sciences and Mathematics, provided the student has maintained a minimum GPA of 2.0 on a 4.0 scale.

Exceptions to this minimum admission requirement are rarely made and require the applicant to demonstrate, in a written petition to the committee on academic standing, that there are special circumstances that warrant waiver of the requirement. Approval of the petition is not automatic, and those students who are admitted by petition will be

placed on special probationary status and must meet certain conditions to remain enrolled.

If the college from which the applicant transfers lacks proper accreditation, the student may be denied transfer credit on the basis of the transcript, but may be allowed to obtain credit by passing advanced standing examinations with at least a C grade. Official transcripts of records from all schools previously attended must be on file with the Office of Undergraduate Admission for Adult, Transfer and Military Students before the student will be permitted to register.

## A Second Degree at The University of Toledo

*A Second Degree within the College of Natural Sciences and Mathematics:*

A student earning a degree at The University of Toledo in the College of Natural Sciences and Mathematics may simultaneously earn a second degree in a different department within the College of Natural Sciences and Mathematics (NSM) by completing the requirements of both degrees. General education courses that meet the requirements of both degrees will count for both. The two degrees must be of a different type (e.g. – BS and BA) and both must be offered by NSM. A student who has previously earned a BA degree in the College of Natural Sciences and Mathematics may return to complete a BS degree in the same major by fulfilling the major and related field requirements for the BS degree as described in the catalog for the year of readmission. A student who previously earned either a BA or BS degree in the College of Natural Sciences and Mathematics may return to complete either a BA or BS in a different department by fulfilling the NSM college, major and related field requirements for the degree and major desired, as described in the catalog for the year of readmission. University and NSM college general education courses that meet the requirements of both degrees will count for both. Courses in the Related Area of the first major may count towards the second major unless other related courses are required.

*A Second Major within a Bachelor of Science or Bachelor of Arts degree in the College of Natural Sciences and Mathematics:*

A student earning a Bachelor of Science or a Bachelor of Arts in the College of Natural Sciences and Mathematics may simultaneously earn a second major in a different department by completing the requirements of both majors as specified for the same degree program (BA or BS). Courses in the Related Area of the first major may count towards the second major unless other related courses are required. It is important to understand that completing this pathway will result in the achievement of a single degree, but with dual majors, from the College of Natural Sciences and Mathematics. All requirements for both majors must be completed in the same graduation term.

*A Second Degree in the College of Natural Sciences and Mathematics at The University of Toledo:*

A student earning a degree in another College at The University of Toledo may earn a second degree simultaneously in the College of Natural Sciences and Mathematics through the completion of all requirements of both degrees. A student who previously earned a degree in another College at the University of Toledo [or elsewhere] may earn a second degree in the College of Natural Sciences and Mathematics through the completion of all requirements of the College of Natural Sciences

and Mathematics degree. General education courses that meet the requirements of both degrees will count for both.

**Important Note:** Courses constituting a departmental or interdisciplinary major may not also be used to meet requirements for a different departmental or interdisciplinary major either within or outside the College of Natural Sciences and Mathematics. Courses constituting a departmental or interdisciplinary minor may be used to meet requirements for a different departmental or interdisciplinary minor with restrictions (please refer to “Minors” parameters outlined in letter J within “Degree Requirements (p. 345)”).

## Requirements for Students with an Associate’s Degree

Students holding an Associate of arts or Associate of science degree from an accredited college are encouraged to enroll in the College of Natural Sciences and Mathematics and, in many instances, may expect to earn an appropriate baccalaureate upon completion of two years of full-time study. Students with an Associate’s degree in a technical program will likely require more time to complete a bachelor’s degree. The following regulations apply:

- Students must complete the equivalent of the specified University and college core and distributive requirements for a bachelor’s degree.
- In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 to 4000 levels; of these, a minimum of 32 hours must be taken at the 3000 to 4000 levels in baccalaureate degree - granting colleges. Course work from other institutions is accepted at the level the equivalent course is taught at The University of Toledo.
- Students may enroll in any departmental, interdepartmental or interdisciplinary program for which they meet the admission criteria. All of the usual major and related area requirements must be fulfilled as specified in the catalog for the year in which the student entered the College of Natural Sciences and Mathematics.

## Readmission of Former Arts and Sciences or Natural Sciences and Mathematics Students

Students who have withdrawn from the former College of Arts and Sciences or the College of Natural Sciences and Mathematics and The University of Toledo and have not attended any other institution in the Interim may be readmitted, provided they were eligible to continue enrollment in the college at the time they discontinued attendance. Such students should readmit at the College Student Services Office. Students who have been suspended from the College of Natural Sciences and Mathematics must submit a written letter of petition. Students who readmit after more than 12 consecutive months’ absence must comply with existing college requirements at the time of readmission.

## Academic Policies

Refer to UT Policy website (<http://www.utoledo.edu/policies>) (<http://www.utoledo.edu/policies/>) for academic policies that apply to all students.

LIST OF UNDERGRADUATE ACADEMIC POLICIES found at the above web address.

3364-71-01\_Academic Standing  
 3364-71-02\_Enrollment status: full time, part time, and audit  
 3364-71-03\_Class Rank  
 3364-71-04 Academic dishonesty  
 3364-71-05 Academic Grievance  
 3364-71-06 Academic forgiveness  
 3364-71-07 Repeating a course and calculating GPA  
 3364-71-08 Adding and/or dropping a Course  
 3364-71-09 Dual Degrees  
 3364-71-10 Residency requirement for a degree  
 3364-71-11 Grades and grading  
 3364-71-12 Priority registration  
 3364-71-13 Graduation with honors distinction; Dean’s list; President’s list  
 3364-71-14 Missed class policy  
 3364-71-15 Confidentiality of student records (FERPA)  
 3364-71-16 Administrative adjustment for extenuating circumstances  
 3364-71-17 Credit for prior learning  
 3364-71-18 Veteran and service members support and assistance  
 3364-71-19 Posthumous degree awards  
 3364-71-20 International baccalaureate diploma  
 3364-71-21 Diploma replacement  
 3364-71-22 Semester academic calendar and academic year  
 3364-71-23 Academic credit hour

## Student Services

### Academic Advising

Academic advising is a process intended to help students derive as many benefits as possible from their educations. This occurs when advisors help students develop and reach academic and career goals. While the ultimate responsibility for making personal and educational decisions rests with the student, advisors assist by helping to identify and assess alternatives and the consequences of decisions. Advising can be much more than selecting courses. The more frequently students arrange to meet with their advisors, the better their needs can be served. New students, transfer students, students changing colleges, and continuing general studies students are advised in the College of Natural Sciences and Mathematics Student Services Office, University Hall Room 3000, by college staff advisors. Limited advising hours are also available in Wolfe Hall, room 2243. See the Student Services (<http://www.utoledo.edu/offices/student-services>) web page for more information. They:

- provide essential information;
- help students select courses to meet University General Education and college skill area and distributive requirements;
- suggest courses for the exploration of majors and minors; and
- help students evaluate academic progress and adjustment to university life.

Students with declared majors and/or minors are advised by departmental major or program advisors, faculty who provide general information as well as more specialized information about majors and minor programs, departmental course offerings, and career and graduate opportunities. They help students select courses for general, major, related, and other requirements. Students in the Honors College and those seeking more than one major or degree, a minor, or admission to

professional school should meet periodically with one or more additional advisors. A complete list of academic advisors is available on the college website or in the College office.

## Student Responsibilities

Students are responsible for correctly selecting courses for their programs of study each semester and for fulfilling all degree requirements. Although advisers will assist wherever possible, the final responsibility rests with the student. Students are expected to make sure that they are fulfilling all degree requirements, as published in the issue of the catalog of the College Natural Sciences and Mathematics under which they entered. Students who have been out of the College of Natural Sciences and Mathematics for 12 consecutive months are responsible for the requirements in the University catalog under which they reenter.

## Transcripts and Degree Audit Reports

A transcript is a complete chronological list of a student's academic course work (including all courses attempted and grades earned). It does not show how specific courses apply or do not apply to University and college requirements as stipulated in this catalog. For example, developmental, non-repeatable and certain other courses are not counted toward minimum credits for degrees, but appear on transcripts. The Degree Audit Report (DAR) details all requirements applicable to a student's academic program (degree, major, minor) and applies the student's courses on the transcript (including transfer credit) to those requirements. The DAR should be used to identify requirements remaining when all registered courses are completed. The College of Natural Sciences and Mathematics Student Services Office (UH Room 3000) will provide an unofficial transcript and DAR to a College of Natural Sciences and Mathematics student presenting a picture ID. Students also may view their transcript and DAR through the myUT (<http://myut.utoledo.edu>) portal with Student Self-Service.

## Declaring or Changing a Major or Minor

To declare a major or minor or change one previously declared, students must fill out a form that is available in the College Student Services Office (UH Room 3000).

## Sequence of Courses

There is no single prescribed sequence of courses, except that all first-year students should take NSM 1000 and any developmental courses required on the basis of placement testing and/or high school deficiencies. Students should consult the later sections of the catalog devoted to programs of study and course offerings, and they should review their programs with their academic advisors to ensure they complete courses in the proper sequences. In addition, students should use their Degree Audit Reports to track their progress.

Entering students majoring in mathematics or in one of the areas of the natural sciences usually should begin the special courses designated as prerequisite for advanced courses in their first year. For example, calculus is a prerequisite for other mathematics courses and for later courses in physics, chemistry and geology. General Chemistry I and II, the Biology Fundamentals of Life Science sequence, and Fundamentals of Geology are prerequisites for succeeding courses required for majors in these areas.

## Study Abroad

Students who plan to study abroad must be sure that their proposed course of study is properly accredited. Its academic acceptability should be verified by the college before departure. Students also should ascertain in advance from their advisors whether the course work will count toward their general requirements, majors, or related areas or only be regarded as elective. Credit for foreign language study is subject to the approval and recommendation of the department of World Languages and Cultures. Information about study abroad programs is generally available from advisors in many college programs and departments and from the Center for International Studies and Programs (Education Abroad Office) (<http://www.utoledo.edu/cisp>).

## Transient (Guest) Enrollment at Another Institution

College of Natural Sciences and Mathematics students must have advance permission both to enroll elsewhere as a guest and to take specific courses. The Transient Student form for this purpose is available in the College Student Services Office and on the college website. Students enrolling without permission will be considered transfer readmits upon their return to UT. Natural Sciences and Mathematics students enrolled as transients or guests at another institution must submit an official transcript to the UT Office of Admission at the conclusion of the enrolled term. Grades of all courses attempted in the major, minor, and UT Core will be used in cumulative GPA calculations.

## GPA Recalculation for Repeated Courses

The College of Natural Sciences and Mathematics permits a maximum of 12 semester hours or the equivalent of 16 quarter hours of course work to be deleted from the UT GPA calculation. Students who have had their GPAs recomputed under the Academic Forgiveness Policy are not eligible for grade deletions. Criteria governing this policy are given in the Undergraduate Policy 3364-71-05: GPA Recalculation: [http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-05\\_Academic\\_grievance.pdf](http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-05_Academic_grievance.pdf). Students should check with the College Student Services Office for more specific information on this policy. Students may not use repeat courses taken at other institutions to qualify for a GPA recalculation.

## Withdrawal Policy (W, IW, DR Grades)

The number of credit hours of W, IW and DR is limited to 22 hours for all undergraduate students in degree programs in the College of Natural Sciences and Mathematics. Once a student has accumulated 22 hours of W, IW or DR, further withdrawals will be counted as F's in computation of the student's UT GPA for purposes of probation or suspension. In addition, students who receive financial aid risk the loss of financial aid if they accumulate excessive hours of W, IW and DR. Students who transfer into the College of Natural Sciences and Mathematics from another college at The University of Toledo will bring with them the number of W's, IW's and DR's accumulated in their previous work.

**Note:** Assignment of the IW and DR grades has been discontinued. A student wanting to be withdrawn from a course must file a petition in the Records Office by the deadline in the term of enrollment.

## Academic Probation

A student whose cumulative GPA is less than 2.0 is automatically placed on probation until a 2.0 cumulative GPA is achieved (See Withdrawal Policy above). It is recommended that a student on probation not enroll for more than 12 to 14 credits.

## Academic Suspension

Academic suspension means that a student is prohibited from registering at The University of Toledo for a period of at least one semester. Students are subject to academic suspension if their GPA falls below the minimum GPA listed below or if they fail to make sufficient progress toward attainment of the degree. (See Withdrawal Policy). Students may remove Incompletes while under suspension. A student is subject to academic suspension if the cumulative GPA is less than:

- 1.0 for 10 to 19 hours attempted;
- 1.5 for 20 to 29 hours attempted;
- 1.7 for 30 to 39 hours attempted;
- 1.8 for 40 to 49 hours attempted;
- 1.9 for 50 to 59 hours attempted;
- less than 2.0 for 60 or more hours attempted.

After accumulating 60 credit hours without suspension, a student may be suspended if the cumulative GPA falls below 2.0 for two consecutive semesters.

## Trial Readmission Policy

After the required suspension period, a student may petition for readmission to the College of Natural Sciences and Mathematics to the Director of the Student Services Office. The petition must be received by the posted deadline on the Student Services reinstatement **website**. If the petition is accepted, the college committee will determine the terms of the conditional registration agreement, under which the student will be permitted to re-enroll. Suspended students who are granted readmission must maintain the designated GPA for each semester thereafter and meet the conditions of their readmission agreement. Students failing to meet these conditions are subject to a one-year suspension. Full details including procedures, deadlines, and how to file a petition for reinstatement can be found on the Student Services website (<https://www.utoledo.edu/offices/student-services/reinstatementpolicy1.html>).

## Dismissal Policy

Students who fail to meet the conditions for readmission after their second suspension are subject to dismissal and are not eligible for readmission to the College of Natural Sciences and Mathematics for at least three years. *Criteria governing this policy are detailed in the undergraduate policy 3365-71-06: Academic Forgiveness: <http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-06%20Academic%20forgiveness.pdf>.*

## Academic Grievance

A student has the responsibility and right to call to the attention of an instructor any grade that the student believes to be in error or unfair. A student may appeal the decision of the instructor, in order, to the department Chair, the Dean, then to the college appeals committee if

the problem is not resolved. If the problem is not resolved at the college level, the student may appeal to the student grievance council. (See also the Academic Grievance section of the Policies and Procedures of the College of Natural Sciences and Mathematics at [http://www.utoledo.edu/nsm/pdfs/NSM\\_Policies\\_and\\_Procedures.pdf](http://www.utoledo.edu/nsm/pdfs/NSM_Policies_and_Procedures.pdf) for more information on the steps and timeline of the appeals process within the College, prior to the petitioning the Student Grievance Council). If a student chooses to appeal to the university level Student Grievance Council the student file the appeal no later than the last day of classes of the semester (including summers) following the one in which the grievance arose. The procedures for making an appeal to the student grievance council may be found on the Provosts Website: <http://www.utoledo.edu/offices/provost/academicgrievance/>.

## Statement on Academic Dishonesty

A student found to be academically dishonest by a faculty member may appeal, in order, to the department Chair, the Dean, the college appeals committee and the University student grievance council. The procedures for making an appeal to the student grievance council, as outlined for academic grievance in the previous section. Criteria governing this policy are detailed in undergraduate policy 3364-71-04: Academic Dishonesty: <http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-04%20Academic%20dishonesty.pdf>.

## College Level Examination Program (CLEP)

The College of Natural Sciences and Mathematics will accept a maximum of 21 semester hours of CLEP through successful completion of the four general examinations. Additional credit may be earned through satisfactory scores on individual subject examinations. Refer to the University of Toledo Registrar's CLEP Credit web page (<https://www.utoledo.edu/uc/pdfs/Standardized%20Testing%20Catalog%20070716.pdf>) for specific information on minimum scores needed to award UT Credit and specific credit awarded.

## Advanced Placement Program

Refer to the University of Toledo Registrar's web page ([http://www.utoledo.edu/offices/registrar/student\\_records/advan\\_credits.html](http://www.utoledo.edu/offices/registrar/student_records/advan_credits.html)) for specific information on minimum scores and credits awarded for Advanced Placement examinations administered by the College Board Advanced Placement Program.

## Pass/No Credit Option

Students may elect to enroll in certain undergraduate courses for Pass/No Credit rather than an A-F grade. Students must complete a petition to take a class Pass/No Credit and obtain the approval of their college before the end of the 15th calendar day of the term. Grades of C or better will be changed to PS, and grades of C-, D+, D, D-, and F will be changed to NC. The grades of PS and NC do not affect the grade point average. Refer to programs of study (p. 345) in the College of Natural Sciences and Mathematics section of this catalog for the limitations on pass/no credit grading in effect for different majors. Undeclared students, as a general rule, should not elect pass/no credit grading in major-level courses.



## Graduation Evaluation Requirement

Two or three semesters (at 80 earned credit hours) before a student intends to graduate, the student and the student's major adviser should complete a Graduation Quick Check Form. This process is initiated by the student. Students with more than one major or one or more minors must be evaluated for the completion of each major and minor. Detailed instructions on the Graduation Quick Check Form and graduation procedures are available at the Student Services office (UH 3000).

## Field Experience/Internship

Policies and procedures for incorporating field experiences or internships in academic programs vary from major to major. Some majors require a field experience or internship; for other majors, they are optional. Students should seek information from their major departments and obtain advance approval for all field experiences or internships.

## Degree Requirements

The College of Natural Sciences and Mathematics offers both Bachelor of Arts and Bachelor of Science degrees. Requirements differ based on degree as indicated below.

### A. Grade Point Averages

A cumulative grade point average (GPA) reflects all grades earned, including grades of F and grades in repeated courses. Candidates must earn a minimum overall cumulative GPA of C (that is, a 2.0 GPA on a 4.0 scale) for all UT course work. In addition, candidates must earn a minimum cumulative GPA of C in the major, minors (optional) and UT General Education, with the grades of all courses attempted at all institutions included in the GPA calculation. Some programs require a higher GPA in the major. For example, BS Chemistry, BS Biochemistry, and BS Geology require a 2.5 GPA. *Criteria governing this policy are given in the Undergraduate Policy 3364-71-07: GPA Recalculation: <http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-07-Repeating a course and recalculation of GPA.pdf> (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-07%20Repeating%20a%20course%20and%20recalculation%20of%20GPA.pdf>).*

### B. Residency Requirement

Students transferring from other institutions must earn at least 30 hours of credit at The University of Toledo; at least 12 of these must be in the major area, and for students pursuing a minor, at least 9 hours must be earned at The University of Toledo. Full-time students must take their last semester, and part-time students their last 12 hours, in residence, unless alternative arrangements have been made in advance with the Dean of the College of Natural Sciences and Mathematics.

### C. Credit Hours and Levels

1. Students must complete a minimum of 120 hours of course work that must include the University General Education and college skill area and distributive requirements, and either major and course work related to the major, or an interdisciplinary program. Individual programs may require more than 120 hours of coursework to complete.

2. In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 to 4000 levels; of these a minimum of 32 hours must be taken at the 3000 to 4000 levels.
3. Students are cautioned to make use of their degree audit and review remaining requirements with their adviser before every registration in order to make progress toward completion of their requirements in an orderly, timely manner. Insofar as a student can complete the basic courses and the courses required for a chosen major (as outlined in sections E - J below) in fewer than the 120 hours required for a degree, the student must choose elective courses to complete the total of 120 hours, subject to the restrictions outlined below.

## D. Credit Restrictions

Total earned hours shown on a student's transcript may not all be applicable to the minimum 120 credits required for a degree, as follows:

1. Students with entrance deficiencies in mathematics and other students who are required or choose to take developmental course work will need to complete additional hours.
2. No courses in typing, shorthand or keyboarding will apply toward the degree.
3. No more than two hours in skill courses in physical education or recreation courses at the 1000 level will apply toward the degree.
4. No more than two hours in Student Leadership Development I and II will apply toward the degree.
5. Duplicate credit – except for courses identified as repeatable courses, students will not receive credit for repeated courses (taking the same course twice), whether taken at The University of Toledo or elsewhere.
6. The college reserves the right to deny credit for other specific courses (including most SKLS courses) and for blanket technical credit not applicable to a student's specific program.

## E. University General Education Requirements

Students earning baccalaureates in all colleges and programs are required to complete 36 credit hours of courses that comprise the General Education Curriculum. Those courses are distributed in the areas of English composition, humanities/fine arts, social sciences, natural sciences and mathematics, and multicultural studies courses. Students should view their Degree Audit Report or contact their academic department or college office for specific details.

## F. Natural Sciences and Mathematics Skill Area Requirements

Students are placed into mathematics courses by ACT scores or placement tests in those subjects. Students are placed into foreign language courses through placement testing.

Code	Title	Hours
<b>1. Orientation</b>		
NSM 1000	Natural Sciences & Mathematics <sup>1</sup>	2
<b>2. English Composition <sup>2</sup></b>		
Select one of the following tracks:		6



*a. Native speakers track (for students for whom English is a first language)*

ENGL 1110	College Composition I
Select one of the following:	
ENGL 1130	College Composition II: Academic Disciplines And Discourse
ENGL 2950	Science And Technical Report Writing
ENGL 2960	Professional and Business Writing

*b. Non-native speakers track (for students for whom English is a second language)<sup>3</sup>*

ENGL 1020	Writing And Grammar For Students Of English As A Second Language
ENGL 1110	College Composition I
Select one of the following:	
ENGL 1130	College Composition II: Academic Disciplines And Discourse
ENGL 2950	Science And Technical Report Writing
ENGL 2960	Professional and Business Writing

**3. Mathematics<sup>4</sup>**

Select one of the following tracks: 3-8

*a. Bachelor of Arts (BA)*

Select one of the following:	
MATH 1320	College Algebra
MATH 1340	College Algebra And Trigonometry
MATH 2600	Introduction To Statistics
MATH 2640	Statistics for Applied Science (or higher Math)

*b. Bachelor of Science (BS)*

Select one of the following calculus sequences:	
MATH 1750 & MATH 1760	Calculus For The Life Sciences With Applications I and Calculus For The Life Sciences With Applications II
MATH 1830 & MATH 1840	Calculus I For Mathematicians, Scientists And Educators and Calculus II For Mathematicians, Scientists And Educators
MATH 1850 & MATH 1860	Single Variable Calculus I and Single Variable Calculus II

**4. Writing Across the Curriculum (WAC) Requirement**

Select two writing intensive courses approved by adviser<sup>5</sup> 6

**5. Natural Sciences/Mathematics**

Select 2-3 courses based on degree as indicated:<sup>6</sup> 6-9

*a. Bachelor of Arts (BA)*

Select two science/mathematics courses from two different departments outside of the student's major <sup>7</sup>	
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*b. Bachelor of Science (BS)*

Select three science/mathematics courses from three different departments outside of the student's major <sup>7</sup>	
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**6. Cultural Experience (BA Requirement Only)**

Select 0 to 8 hours foreign language or one semester of Study Abroad<sup>8</sup> 0-8

Total Hours 23-39

<sup>1</sup> All new first-year students are required to take NSM 1000. The course is optional for transfer students.

<sup>2</sup> University of Toledo General Education and College of Natural Sciences and Mathematics requirement - 6 hours. To earn a degree in the College of Natural Sciences and Mathematics, students must pass both Composition I and II with a C or better. The College of Natural Sciences and Mathematics recommends that these requirements be met before completing 45 credit hours.

<sup>3</sup> Students will take an English placement test to determine appropriate starting level.

<sup>4</sup> UT General Education and College of Natural Sciences and Mathematics requirement.

<sup>5</sup> Students must pass two writing intensive courses approved by their adviser. Many courses will require completion of Composition I and II as pre-requisites. The College of Natural Sciences and Mathematics recommends that the first of these writing intensive courses be completed within the first 65 and the second within the first 90 hours. At least one of these courses must be taken within the student's major. In consultation with their advisers, students with dual or interdisciplinary majors will meet this requirement by selecting a course within one of their chosen majors.

Transfer students from institutions that have required writing intensive courses should have their former institution certify that they have completed a series of writing intensive courses comparable to those required in the College of Natural Sciences and Mathematics. Transfer students who have not taken writing intensive courses must meet the College of Natural Sciences and Mathematics Writing Across the Curriculum requirements.

<sup>6</sup> UT General Education requirement is two courses for 6 hours; College of Natural Sciences and Mathematics requirement differs based on degree as indicated.

<sup>7</sup> Students may select courses from biology, chemistry, environmental sciences, mathematics, and physics and astronomy. Courses must be major-level. See DAR for more information.

<sup>8</sup> Bachelor of Arts (BA) requirement only, not required for Bachelor of Science (BS) - 0 to 8 hours (foreign languages 1110 and 1120 (or 1500) or one semester of Study Abroad).

Every student enrolled in a BA degree program in the College of Natural Sciences and Mathematics is required to demonstrate proficiency in a single foreign language (Arabic, Chinese, French, German, Japanese, Latin, Spanish, or American Sign Language) through the elementary (foreign languages 1120) level by successfully completing a foreign language course at this level or by achieving an appropriate score on a proficiency/placement test administered by the department of foreign languages that reflects the equivalent. Students beginning a foreign language should enroll in their chosen language at the elementary 1110 level and will take two semesters of foreign language. Those continuing a foreign language or attempting to demonstrate competency by examination should take a proficiency/placement test. Alternatively, students may satisfy the cultural experience requirement by studying abroad for at least once semester in an approved study abroad/exchange program for academic credit.

## G. Natural Sciences and Mathematics Distributive Requirements

### (Bachelor of Arts (BA) requirement only, not required for Bachelor of Science (BS))

Students should consult with their advisors in selecting courses that will meet distributive requirements. With their advisor's approval, students may select higher-level courses for which they have the prerequisites. With careful planning, students will be able to satisfy UT General Education Curriculum and College of Natural Sciences and Mathematics requirements by taking the minimum required hours. A student may take no more than two courses under each departmental code in satisfying the distributive requirements.

Code	Title	Hours
<b>1. Humanities and Fine Arts Required Courses <sup>1</sup></b>		
<i>English Literature</i>		
Select 3 hours of English Literature		3
<i>History</i>		
Select 3 hours of history		3
<i>Fine Arts</i>		
Select 3 hours of Fine Arts from appreciation or theory courses, not studio or skills courses		3
<i>Electives</i>		
Select 6 hours of electives. Among the courses with minimal or no prerequisites are as follows: <sup>2</sup>		6
ARTH 1500	Art In History	
CLC 1010	Classical Humanities	
COMM 1010	Comm Principles And Practices	
COMM 2000	Mass Communication And Society	
ENGL 2710	Reading Fiction	
ENGL 2720	Reading Drama	
ENGL 2730	Reading Poetry	
FILM 1310	Introduction To Film	
FREN 1080	Culture And Commerce In The French-Speaking World	
FREN 1090	French & Francophone Culture In The Modern World	
GERM 1080	German Culture And Commerce	
GERM 1090	Introduction To Modern German Culture	
HIST 1000 - HIST 1200		
HUM 1010		
HUM 1200		
HUM 2010		
HUM 2020		
JAPN 1080	Japanese Culture And Commerce	
JAPN 1090	Introduction To Japanese Culture	
MUS 2200	Music Theory For The Non-Major	
MUS 2210	Introduction To Music	
MUS 2220	History Of Jazz	
MUS 2240	History Of Rock And Roll	
MUS 2250	Musical Diversity In The United States	

MUS 2420	Cultures And Music Of Non-Western Styles	
PHIL 1010	Introduction To Logic	
PHIL 1020	Critical Thinking	
PHIL 2200	Introduction To Philosophy	
PHIL 2400	Contemporary Moral Problems	
REL 1220	World Religions	
REL 2000	Introduction To Religion	
SPAN 1080	Culture & Commerce In The Spanish-Speaking World	
SPAN 1090	Culture Of Latin America	
SPAN 1100	Culture Of Spain	
THR 1010	Acting for Non Majors	
THR 1100	Introduction To Theatre	
<b>2. Social Sciences</b>		
Select 9 hours of social science courses. Among the courses with minimal or no prerequisites are as follows: <sup>3</sup>		9
ANTH 1020	Introduction To Anthropology	
ANTH 2020	Introduction To Archaeology	
ANTH 2800	Cultural Anthropology	
ANTH 2900	African American Culture	
ECON 1010	Introduction To Economic Issues	
ECON 1150	Principles Of Macroeconomics	
ECON 1200	Principles Of Microeconomics	
GEPL 1010	Human Geography	
GEPL 1100	Environmental Geography	
PSC 1200	American National Government	
PSC 1710	Current International Problems	
PSY 1010	Principles Of Psychology	
SOC 1010	Introduction To Sociology	
Total Hours		24

<sup>1</sup> UT General Education requirement is two courses for six hours; students enrolled in a BA degree program in the College of Natural Sciences and Mathematics are required to take an additional 9 hours. Students will take five courses (15 hours) in the humanities in addition to those taken to meet the English composition and foreign language requirements. Students may select humanities courses that also will satisfy a UT General Education humanities or multicultural requirement.

<sup>2</sup> Students may select courses from art, art history, communication, English, film, foreign languages (courses higher than 1120/1500 or culture courses 1080 and 1090, or a second foreign language), history, humanities, music, philosophy, religious studies and theatre. Higher-level humanities courses will satisfy these requirements and may be taken if student has met the prerequisites.

<sup>3</sup> UT General Education requirement is two courses for six hours; Students in a BA degree program in the College of Natural Sciences and Mathematics are required to take one additional course for a total of nine hours.

Students may select social science courses that also will meet a UT General Education social science requirement and one multicultural requirement. Students may select courses from anthropology, economics, geography, political science, psychology, and sociology. No more than two courses can be from a single discipline.

## H. Major Area

Every student must complete either a departmental major or an interdepartmental or interdisciplinary major. Courses given in other colleges of the University may be credited to the major only with the approval of the Dean of the College of Natural Sciences and Mathematics upon recommendation of the department Chair. Waiver of a required course or the substitution of a course from another department does not necessarily reduce the minimum credits required in the major.

### 1. Departmental Major

- See the complete list of departmental majors under “Degrees Offered” in the College of Natural Sciences and Mathematics section of this catalog.
- The minimum number of semester hours a student must complete for a departmental major is 34 hours. A student may have two majors from two different departments provided the requirements of both programs are satisfied. Work in the second major may be accepted as fulfilling the related course requirement upon the approval of the advisers in both departments. A student cannot use courses from the first major to satisfy the second and vice-versa. See section on “Earning a Second Degree (p. 340)” for statement on requirements when two or more desired major programs are offered as different degrees.

### 2. Interdisciplinary Majors

- The College of Natural Sciences and Mathematics offers an interdisciplinary major in that leads to a Bachelor of Science in General Studies. General studies is an interdisciplinary program that allows students to select an area of concentration and related course work not offered in traditional majors. Students who plan to pursue graduate or professional degree programs or enter certain employment areas that require established curricular backgrounds may find it to their advantage to consider existing majors offered within the college rather than the general studies option. Students seeking admission to this program will be interviewed by an advisor in the College Student Services Office and must have sound reasons for their choice. Once accepted into the program, students must have their programs approved by the general studies advisor. Under this program, the University and college general education requirements specified in the Degree Requirements section of this catalog must be fulfilled, and an area of concentration in the natural sciences, social sciences or humanities must be identified for the purpose of determining education requirements. In lieu of a major, students must take at least 16, but not more than 24 hours, of

course work in a single department and 26 to 34 hours of cognate or related course work for a total of 50 hours. The transcript will identify the major as General Studies. A student completing a departmental major and a second major in an interdisciplinary or interdepartmental major cannot use courses from the first major to satisfy the second or vice-versa. See the complete list of interdisciplinary majors under “Degrees Offered” in the College of Natural Sciences and Mathematics section of this catalog.

## I. Related Courses

Every student who chooses a departmental major and students in some interdisciplinary majors also must complete courses related to the major. These courses must be in addition to courses taken to fulfill the basic requirements listed above. For BA degree programs the minimum number of major and related area courses is 58 hours. For BS degree programs the minimum number of major and related area courses is 64 hours. Each department defines the areas from which courses may be chosen by its majors, and these listings are given in the later sections of this catalog under Programs of Study. For most programs, related courses must be chosen from courses acceptable for credit in a College of Natural Sciences and Mathematics major. Generally, these are upper-level courses.

Courses given in other colleges of the University may be credited to the major or to related courses only if indicated in later sections of the this catalog under Programs of Study or with the approval of the Dean of the College of Natural Sciences and Mathematics upon recommendation of the department Chair.

## J. Minors

Many College of Natural Sciences and Mathematics departments offer minors. Departmental requirements for particular minors are given in later sections of the catalog under Programs of Study. Students wishing to pursue minors should consult with their primary program advisor and then with an advisor in Student Services office. Not all minors can be added to all degree programs. Courses selected for the minor must be chosen from courses acceptable for credit toward a major in that department. In meeting requirements for some majors, work in the minor may be accepted as fulfilling the required hours of related courses, but only with the approval of the student's major advisor. Students completing a minor must be sure that at least 12 credit hours of the minor requirements are unique to that minor, and are not being used to satisfy requirements in the major or another minor. No more than six hours of courses taken for minor credit may be applied to the total College of Natural Sciences and Mathematics distributive requirements. A minimum GPA of 2.0 is required in the minor. Students must complete a minimum of 21 hours for a minor; at least nine of those hours must be completed at The University of Toledo.

## BS in General Studies

### Degree Requirements

The General Studies program has been established in recognition of the fact that existing majors may not satisfy the needs of all students desiring a liberal education. General Studies is an interdisciplinary program that allows students to select an area of concentration and related course work not offered in traditional majors. Students who plan

to pursue graduate or professional degree programs or enter certain employment areas that require established curricular backgrounds may find it to their advantage to consider existing majors offered within the college rather than the General Studies option. The standard majors have wider acceptance and more readily identify the nature and quality of an individual's academic background. Students should declare this major before they have completed 90 hours. Students seeking admission to this program will be interviewed by an adviser in the college Student Services Office and must have sound reasons for their choice. Once accepted into the program, students must have their programs approved by the General Studies adviser.

Under this program, the University and college general education requirements specified in the Degree Requirements section of this catalog must be fulfilled, and an area of concentration in the natural sciences, social sciences or humanities must be identified for the purpose of determining education requirements. Students must take at least 64 hours of courses at the 2000 level or higher and at least 32 hours of courses at the 3000/4000 level and have earned a minimum of 124 hours to be eligible for graduation. In lieu of a major, students must take at least 16 but not more than 24 hours of course work in a single department and 26-34 hours of cognate or related course work for a total of 50 hours.

Courses used for the concentration and related areas must be courses that would count in the major in those departments.

## Pre-Medical, Pre-Dental and Pre-Veterinary Concentrations

Tess Newlove, Director, Pre-Health Advising Center

Students interested in professional medical, dental or veterinary careers may choose to apply for the pre-medical, pre-dental and pre-veterinary concentrations. **Students choosing this option must also complete the requirements for a major in a specific discipline or in an interdisciplinary baccalaureate program.**

Because admission to a professional school is very competitive, students need to maintain high GPAs, both cumulative and in the sciences. The Advisors in the Pre-Health Advising Office will continually monitor a student's academic performance and make recommendations as to whether this program should be continued.

Advisors in the Pre-Health Advising Office will assist the student in determining the entrance requirements of the professional school being considered, since these requirements vary among schools. In general, these professional schools specify for entrance a core set of science courses that include one year (two semesters) each of biology, general chemistry, organic chemistry, physics and mathematics. Most schools recommend that candidates plan a broad course of study leading to either a B.A. or a B.S. degree in any discipline.

For more information regarding Pre-Health options and advising visit the Pre-Health Advising Center. (<http://www.utoledo.edu/success/pre-med-advising>)

## Honors

Honors in the College of Natural Sciences and Mathematics is available to its academically talented and highly motivated students, and is offered in conjunction with the University of Toledo Jesup Scott Honors College. To graduate with College Honors, a minimum of 27 hours of Honors credits, a minimum cumulative UT GPA of 3.3, and completion of Departmental Honors in one of the departments of NSM are required. Departmental honors alone can be earned by completing the Departmental Honors requirements alone. The departmental honors requirements and curriculum offered by individual departments within the College of Natural Sciences and Mathematics is described under the departmental entries in this catalog..

## Student Selection and Admission Criteria

Admission to the Honors College is competitive and limited to academically talented students. Students entering directly from high school are admitted based on a review of application materials, which include a high school transcript, references, an essay, an extracurricular resume, and ACT or SAT scores. Students with an ACT composite score of 28 or higher (SAT composite of 1260 or higher) and a high school GPA of 3.75 or higher are encouraged to apply. Highly motivated students with an ACT composite of at least 25 (SAT composite of at least 1140) and a minimum high school GPA of 3.5 also are considered for admission to the program. Currently enrolled University of Toledo students and transfer students may apply for admission to the Honors College if they have completed at least 15 but not more than 60 graded semester hours of college work, and earned a minimum GPA of 3.3 (on a 4.0 scale).

Students are admitted to the Honors College on a space-available basis.

## Program Requirements

In order to graduate with the Honors College diploma, a student must:

- Complete all requirements for an approved degree program within the College of Natural Sciences and Mathematics.
- Complete a minimum of 27 semester hours of honors courses. Honors courses are of two kinds – those offered by the Honors College and those offered by various departments and colleges. Of the 27 hours required, the following must be completed by all Honors College students:

Code	Title	Hours
Three semester hours of Honors Reading Conference:		3
HON 1010	Ideas and Society	
A minimum of three semester hours of the following:		3
HON 2010	Multicultural Toledo	
HON 2020	Multicultural Literatures: The North American Experience-Honors-WAC	
HON 2030	Multicultural Literatures: The Non-European World-Honors-WAC	
A minimum of three semester hours of two upper-division interdisciplinary seminars offered through the Honors program:		3
HON 3010	Community Engagement	
HON 4950	Honors Seminar	
HON 4960	Honors Seminar	

All requirements for departmental honors in their major. This includes the completion of an honors thesis or project supervised by a faculty member in the major department.

- Earn a minimum overall GPA of 3.3

Note: For a student pursuing more than one major, or an interdepartmental major, the Honors College's departmental honors requirement may be fulfilled through meeting requirements for one of the majors.

## Retention Standards

To remain in good standing in the Honors College, a student must:

- Earn a minimum overall GPA of:
  - 3.0 by the end of the first year (typically at least 30 semester hours);
  - 3.1 by the end of the second year (typically at least 60 semester hours); and
  - 3.2 by the end of the third year (typically at least 90 semester hours).
- Make satisfactory progress toward fulfillment of the requirements for a degree with honors in the college.

## Departmental Honors

Requirements for departmental honors designations are set by the various departments of the College of Natural Sciences and Mathematics and are described under the departmental entries in this catalog. All departments, however, require successful completion of an honors thesis or project supervised by a faculty member in that department. It is possible for a student to fulfill all departmental requirements and earn the departmental honors citation upon graduation without participating in the Honors College. The reverse is not possible, however, as departmental honors is required to earn the Honors College diploma.

## Department of Biological Sciences

Scott Leisner, Chair

Deborah Chadee, Associate Chair

Amanda Seabolt, Undergraduate Advisor, Honors advisor

Catherine McCoy, Medical Technology Program Director and advisor

Brian Ashburner, Adviser for the University of Salford Exchange Program

## Degrees Offered

The Department of Biological Sciences offers a degree program for a Bachelor of Science and Bachelor of Arts in biology, and a Bachelor of Science in Medical Technology. A concentration in neuroscience is available to students in the Bachelor of Science in biology program. The department of Environmental Sciences also offers a degree program for a Bachelor of Science in biology, with a concentration in ecology and organismal biology (see that department's section for requirements).

## Advanced Placement

- Students with a score of 3 will receive credit for BIOL 1120;
- students with a score of 4 will receive credit for BIOL 2170;

- students with a score of 5 will receive credit for BIOL 2150 and BIOL 2170.

Students earning Advanced Placement (AP) scores of 4 or 5 may receive credit for BIOL 2160 and/or BIOL 2180 upon evaluation of their AP laboratory materials by the department of biological sciences.

## Junior Year Studies in England for Biology Majors

The Department of Biological Sciences participates in a well-established exchange program with the University of Salford, England. Selected UT biology (and pre-medical, pre-dental and pre-veterinary) students have the opportunity to spend their junior year at Salford. Participants in the program will pay their instructional and general fees to The University of Toledo. Eligibility to participate in the program is based on criteria established by the Department of Biological Sciences. Information on the program may be obtained from the departmental exchange program Adviser, Dr. Brian Ashburner. Details are available on academic issues, living accommodations, recreational opportunities and life in England on the departmental Web site at <http://www.utoledo.edu/nsm/bio/salford/>.

## Degrees Offered

- BA in Biology (p. 353)
- BS in Biology (p. 354)
- BS in Medical Technology (p. 357)
- Minor in Biology (p. 358)

### BIOL 1120 Survey Of Biology

[3 credit hours]

A survey of major biological principles and phenomena in various plants and animals with emphasis on man. (not for major credit) .

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

### BIOL 1220 Survey Of Biology Laboratory

[1 credit hour]

(Not for major credit) A series of laboratory exercises that supplement the material discussed in BIOL 1120.

**Corequisites:** BIOL 1120

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

### BIOL 2010 Major Concepts In Biology

[3 credit hours]

This course will discuss topics related to the major concepts of biology such as evolution, the cell, the gene and homeostasis. This course is designed for students majoring in science, engineering or other fields that require biology as a prerequisite who have not had sufficient preparation to begin the Fundamentals of Life Science series (BIOL 2150 or BIOL 2170).

**Term Offered:** Spring, Fall

Core Natural Sciences



**BIOL 2150 Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation**

[4 credit hours]

An introduction to the diversity of multicellular life on earth, evolution and physiological adaptations. Completion of BIOL 2170 prior to enrolling is strongly advised. Prerequisites description: Either (CHEM 1090 or CHEM 1230 or BIOL 2010 or BIOL 2170) with a minimum grade C, or a minimum ALEKS Online Chemistry Initial Placement Assessment result of 50%, or an ACT minimum composite score of 21.

**Prerequisites:** BIOL 2010 with a minimum grade of C or CHEM 1090 with a minimum grade of C or CHEM 1230 with a minimum grade of C or ACT Composite with a score of 21 or BIOL 2170 with a minimum grade of C or Aleks Chem Placement Highest with a score of 50

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**BIOL 2160 Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation**

[1 credit hour]

A series of laboratory exercises which supplement the material discussed in BIOL 2150.

**Corequisites:** BIOL 2150

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance**

[4 credit hours]

A general introduction to cell structure and function, energy processing in plants and animals, basic genetics, molecular biology and development.

Prerequisite description: Either (CHEM 1090 or CHEM 1230 or BIOL 2010 or BIOL 2150) with a minimum grade C, or a minimum ALEKS Online Chemistry Initial Placement Assessment result of 50%, or an ACT minimum composite score of 21.

**Prerequisites:** CHEM 1090 with a minimum grade of C or CHEM 1230 with a minimum grade of C or BIOL 2010 with a minimum grade of C or BIOL 2150 with a minimum grade of C or ACT Composite with a score of 21 or Aleks Chem Placement Highest with a score of 50

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**BIOL 2180 Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance**

[1 credit hour]

A series of laboratory exercises which supplement the material discussed in BIOL 2170.

**Corequisites:** BIOL 2170

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**BIOL 2910 Biological Research**

[1 credit hour]

A discussion/demonstration of opportunities for undergraduate research in Biology at the University of Toledo and elsewhere.

**Term Offered:** Spring

**BIOL 2980 Special Topics in Biology**

[1-4 credit hours]

Selected topics in biology for biology majors and non-majors.

**Prerequisites:** ENGL 1110 with a minimum grade of D- or MATH 1180 with a minimum grade of D-

**BIOL 3010 Molecular Genetics**

[3 credit hours]

The principles of heredity at the molecular level, covering gene and chromosome structure, replication and repair, recombination, control of gene expression, control of cell division.

**Prerequisites:** BIOL 2170 with a minimum grade of C and (CHEM 1230 with a minimum grade of C or CHEM 1240 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**BIOL 3020 Molecular Genetics Laboratory**

[2 credit hours]

A laboratory course in experimental molecular biology involving gene cloning, analysis of cloned product and other techniques of modern molecular genetics.

**Corequisites:** BIOL 3010

**Term Offered:** Spring, Fall

**BIOL 3030 Cell Biology**

[3 credit hours]

A study of the internal organization of the eukaryotic cell, organelle and membrane function, cell-cell signaling, cell movement, cell adhesion, the extracellular matrix.

**Prerequisites:** BIOL 2170 with a minimum grade of C and CHEM 1240 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**BIOL 3040 Cell Biology Laboratory**

[2 credit hours]

Laboratory exercises involving cell culturing, protein analysis, protein localization and other techniques of modern cell biology.

**Corequisites:** BIOL 3030

**Term Offered:** Spring, Summer, Fall

**BIOL 3070 Human Physiology**

[3 credit hours]

Detailed structural and functional analysis of the human endocrine, nervous, reproductive, circulatory, respiratory, digestive and excretory systems. An emphasis will be placed on system-system interactions and homeostatic mechanisms.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**BIOL 3090 Developmental Biology**

[3 credit hours]

Lectures on molecular and cellular interactions in animal and plant embryogenesis and development.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 3100 Developmental Biology Laboratory**

[1 credit hour]

An analysis of development by biochemical and biological methods using live materials.

**Prerequisites:** BIOL 3090 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Fall

**BIOL 3210 Human Nutrition**

[3 credit hours]

Lectures covering nutrition and transport in humans, role of nutrition in growth and development, nutritional diseases.

**Prerequisites:** BIOL 3070 with a minimum grade of C

**Term Offered:** Fall

**BIOL 3510 Comparative Vertebrate Anatomy**

[4 credit hours]

A comparative treatment of the evolutionary and developmental history of the major vertebrate organ systems.

**Prerequisites:** (BIOL 2150 with a minimum grade of C and BIOL 2160 with a minimum grade of C and BIOL 2170 with a minimum grade of C and BIOL 2180 with a minimum grade of C)

**Term Offered:** Fall

**BIOL 3910 Research Project Laboratory**

[2-3 credit hours]

Provides hands-on authentic research experience and comprehensive understanding of the scientific process. May be repeated once for credit, a maximum of 3 hours may be applied to BIOL elective credits in the major or minor.

**Prerequisites:** BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOL 4010 Molecular Biology**

[3 credit hours]

Analysis of the regulatory mechanisms for nucleic acid and protein synthesis; genome structure; recombination; genetic damage and repair.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4030 Microbiology**

[3 credit hours]

Lectures on the principles of modern microbiology and virology, including metabolism, growth, cellular morphology, genetics and host parasite relationships. Bacterial and viral diseases will be illustrated.

**Prerequisites:** BIOL 3030 with a minimum grade of C and CHEM 2410 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4040 Microbiology Laboratory**

[1 credit hour]

Laboratories utilizing basic microbiological techniques and illustrating principles of growth, identification and genetics and control of microbes.

**Prerequisites:** BIOL 4030 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4050 Immunology**

[3 credit hours]

Lectures on the chemical, genetic and cellular basis of the immune response.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4060 Immunology Laboratory**

[1 credit hour]

Laboratory studies of the immune response.

**Corequisites:** BIOL 4050

**Term Offered:** Spring, Fall

**BIOL 4090 Cancer Biology**

[3 credit hours]

Introduction to carcinogenesis and the cellular and molecular features of malignancy. Methods to diagnose and treat malignancies will also be presented.

**Prerequisites:** (BIOL 3030 with a minimum grade of C and BIOL 3010 with a minimum grade of C)

**Term Offered:** Fall

**BIOL 4110 Human Genetics and Genomics**

[3 credit hours]

A systematic survey of genetic variation in man with emphasis on modern research methodology including genomics.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4170 Developmental Genetics**

[3 credit hours]

Survey of animal and plant developmental genetics. Basic principles and methods of genetic analysis, model systems, genetic basis of tissue patterning, evolutionary implications and applications in tissue and plant engineering.

**Prerequisites:** BIOL 3010 with a minimum grade of C

**Term Offered:** Spring

**BIOL 4210 Molecular Basis of Disease**

[3 credit hours]

Examines the genetic, molecular, and biochemical defects associated with some of the most common human diseases. Includes a review of current research into the molecular causes of selected diseases.

**Prerequisites:** BIOL 3010 with a minimum grade of C and BIOL 3030 with a minimum grade of C

**Term Offered:** Fall

**BIOL 4230 Comparative Animal Physiology**

[3 credit hours]

Lectures on the comparative and environmental physiology of vertebrates and invertebrates including metabolism, temperature regulation, respiration, circulation, excretion and osmotic regulation.

**Prerequisites:** (BIOL 3030 with a minimum grade of C and BIOL 3070 with a minimum grade of C)

**Term Offered:** Spring

**BIOL 4250 Introduction to Neurobiology**

[3 credit hours]

An introduction to the molecular, genetic and cellular aspects of neurobiology in humans and model organisms. Topics include neuronal physiology and signaling, neural development, sensation, muscle control, learning and memory.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4330 Parasitology**

[3 credit hours]

A study of the host-parasite interaction including aspects of parasite morphology, taxonomy, development and ecology.

**Prerequisites:** (BIOL 2150 with a minimum grade of C and BIOL 2170 with a minimum grade of C)

**Term Offered:** Spring, Fall

**BIOL 4700 Biological Literature And Communication**

[3 credit hours]

A writing intensive course that focuses on reading original literature in biology in a variety of formats. Required of all biology majors.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**BIOL 4790 Biology Field Trip**

[2-4 credit hours]

Faculty directed course that incorporates extensive field experience and individual projects.

**Term Offered:** Spring

**BIOL 4910 Undergraduate Research**

[1-3 credit hours]

Faculty directed research. Both oral and written reports of results required.

**Term Offered:** Spring, Summer, Fall

**BIOL 4940 Extramural Research**

[1-4 credit hours]

Prior consent of both the department and the proposed supervisor. Scientist-supervised study of research done in an extramural research institute or scientific laboratory. Written and oral reports to the department required. Maximum of 6 hours may count toward BIOL electives.

**Prerequisites:** (BIOL 2150 with a minimum grade of C and BIOL 2170 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**BIOL 4950 Internship In Biology**

[1-12 credit hours]

Supervised practical experience in the field of biology. Maximum of 6 hours may be used as biology elective credit for BS degree.

**Term Offered:** Spring, Summer

**BIOL 4980 Advanced Topics In Biology**

[1-3 credit hours]

An advanced course for Biology majors in an important area of biology. May be repeated for credit under different specialty numbers (topics).

**Term Offered:** Spring

**BIOL 4990 Independent Study In Biology**

[1-3 credit hours]

Faculty directed readings or projects in a specific area of biology.

**Term Offered:** Spring, Summer, Fall

## Honors in Biology

The Department of Biological Sciences Honors Program is available for qualified majors. Interested students should contact the departmental honors adviser before the beginning of the sophomore year.

To receive an undergraduate degree with honors in biology, all requirements for the B.S. or B.A. degree plus an additional 6 credits of Undergraduate Research/Honors Thesis (BIOL 4910) must be completed with a minimum GPA of 3.2 overall and in BIOL courses. The program of study must include honors sections of at least two BIOL courses in addition to BIOL 4910. No more than 3.0 hours of undergraduate research can be taken in any one semester. The Undergraduate Research/Honors Thesis credits are completed under the direction of a faculty research director selected by the student. Students must submit a written Honors Thesis to the department before completion of their senior year and

make a formal public presentation of their research (typically at the spring Biology Undergraduate Research Symposium). The requirement of Honors Thesis research may be fulfilled in one of three ways:

1. Laboratory research in a Department of Biological Sciences faculty member's laboratory;
2. Laboratory research in a summer or academic year program, in which the student carries out full-time independent research for at least 10 weeks under the direction of a senior scientist on a topic approved by the departmental honors Adviser and/or the department Chair;
3. Laboratory research in the laboratory of a senior scientist who is not a member of the Department of Biological Sciences on a topic approved by the departmental honors Adviser and/or the department Chair.

For options 2 and 3, it is very important that the student get his/her proposed thesis research project approved in advance by the departmental honors Adviser and/or the department Chair, who will monitor progress and direct the BIOL 4910 courses.

## BA in Biology

For the B.A. degree in biology a minimum of 33 hours of BIOL courses are required.

The following courses must be included:

BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance  
 BIOL 2180 Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance  
 BIOL 2150 Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation  
 BIOL 2160 Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation  
 BIOL 3010 Molecular Genetics  
 BIOL 3030 Cell Biology  
 BIOL 3070 Human Physiology  
 BIOL 4700 Biological Literature and Communication

A minimum of eleven hours of advanced elective BIOL courses (3000 - 4000 level). A maximum of three credit hours of BIOL 4910 not applied to Departmental Honors may be used to fulfill the advanced elective credits.

The following related courses in mathematics, physics and chemistry are also required:

MATH 2600 Introduction To Statistics (or MATH 2640 or PSY 2100)  
 MATH 1320 & MATH 1330 College Algebra and Trigonometry (or MATH 1340 or (MATH 1750 and MATH 1760))

CHEM 1230 General Chemistry I  
 CHEM 1280 General Chemistry Lab I  
 CHEM 1240 General Chemistry II  
 CHEM 1290 General Chemistry Lab II  
 CHEM 2410 Organic Chemistry I  
 CHEM 2460 Organic Chemistry Laboratory I for Non-Majors  
 CHEM 2420 Organic Chemistry II  
 CHEM 2470 Organic Chemistry Laboratory II for Non-Majors

PHYS 2070 General Physics I (or PHYS 2130)

## PHYS 2080 General Physics II (or PHYS 2140)

No classes used to satisfy the requirements of the Biology major may be taken P/NC with the exceptions of BIOL 4910, BIOL 4950, and BIOL 4990

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
ENGL 1110	College Composition I	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 1320	College Algebra	3
Arts/Humanities Core		3
Hours		16
<b>Second Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
MATH 1330	Trigonometry	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Hours		16
<b>Third Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
Elementary Foreign Language I		4
Social Sciences Core		3
Hours		16
<b>Fourth Term</b>		
BIOL 3010	Molecular Genetics	3
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Elementary Foreign Languages II		4
Arts/Humanities Core		3
Hours		14
<b>Fifth Term</b>		
BIOL 3030	Cell Biology	3
PHYS 2070	General Physics I	5
Fine Arts College Requirement		3

Writing Across the Curriculum (WAC)		3
Hours		14
<b>Sixth Term</b>		
BIOL 3070	Human Physiology	3
PHYS 2080	General Physics II	5
Diversity of US		3
Social Sciences College Requirement		3
Hours		14
<b>Seventh Term</b>		
MATH 2600	Introduction To Statistics	3
or MATH 2640	or Statistics for Applied Science	
BIOL 3000-4000 Level Electives		6
English Literature College Requirement		3
Non-US Diversity		3
Hours		15
<b>Eighth Term</b>		
BIOL 4700	Biological Literature And Communication (WAC)	3
BIOL 3000-4000 Level Elective		6
History Core College Requirement		3
Social Science Core		3
Hours		15
Total Hours		120

## BS in Biology

### Bachelor of Science in Biology

For the B.S. degree in biology a minimum of 34 hours of BIOL courses are required.

The following courses must be included:

BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance  
 BIOL 2180 Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance  
 BIOL 2150 Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation  
 BIOL 2160 Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation  
 BIOL 3010 Molecular Genetics  
 BIOL 3030 Cell Biology  
 BIOL 3070 Human Physiology  
 BIOL 3090 Developmental Biology  
 BIOL 4700 Biological Literature and Communication

A minimum of nine hours of advanced elective BIOL courses (3000 - 4000 level), including two laboratory or field experiences. A maximum of three credit hours of BIOL 4910 not applied to Departmental Honors may be used to fulfill the advanced elective credits.

The following related courses in mathematics, physics and chemistry are also required:

MATH 2600 Introduction To Statistics (or MATH 2640 or PSY 2100)

MATH 1750 Calculus for the Life Sciences with Applications I (or MATH 1830 or MATH 1850)  
 MATH 1760 Calculus for the Life Sciences with Applications I (or MATH 1840 or MATH 1860)

CHEM 1230 General Chemistry I  
 CHEM 1280 General Chemistry Lab I  
 CHEM 1240 General Chemistry II  
 CHEM 1290 General Chemistry Lab II  
 CHEM 2410 Organic Chemistry I  
 CHEM 2460 Organic Chemistry Laboratory I for Non-Majors  
 CHEM 2420 Organic Chemistry II  
 CHEM 3510 Biochemistry I  
 CHEM 3520 Biochemistry II

PHYS 2070 General Physics I (or PHYS 2130)  
 PHYS 2080 General Physics II (or PHYS 2140)

No classes used to satisfy the requirements of the Biology major or minor may be taken P/NC with the exceptions of BIOL 4910, BIOL 4950, and BIOL 4990.

**Neuroscience Concentration:** A concentration in neuroscience is available to students pursuing a BS in Biology. In addition to fulfilling the requirements above for the B.S. degree in biology, the following specific courses must be included in the program of study in place of 1 advanced elective BIOL course, 1 advanced elective BIOL lab experience, and one elective course:

BIOL 4250 Introduction to Neurobiology  
 BIOL 4910 Undergraduate Research (in a section with a neuroscience focus)  
 BIOL 4700 Biological Literature And Communication (in a section with a neuroscience focus)  
 PSY 3400 Cognitive Neuropsychology or  
 PSY 3610 Behavioral Neuroscience

**Concentration in Ecology and Organismal biology:** See the Department of Environmental Sciences (p. 371) section of this catalog.

## Bachelor of Science in Biology

Below is a sample program of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
ENGL 1110	College Composition I	3
Hours		15
<b>Second Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4

BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Arts/Humanities Core		3
Hours		16

### Third Term

BIOL 3010	Molecular Genetics	3
BIOL 3020	Molecular Genetics Laboratory <sup>1</sup>	2
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
Select one of the following:		4

MATH 1750	Calculus For The Life Sciences With Applications I	
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
Social Sciences Core		3
Hours		16

### Fourth Term

BIOL 3030	Cell Biology	3
CHEM 2420	Organic Chemistry II	3
Select one of the following:		3-4

MATH 1760	Calculus For The Life Sciences With Applications II	
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
Social Sciences Core		3
Arts/Humanities Core		3
Hours		15-16

### Fifth Term

BIOL 3090	Developmental Biology	3
BIOL 3100	Developmental Biology Laboratory <sup>1</sup>	1
PHYS 2070	General Physics I	5
CHEM 3510	Biochemistry I	3
Diversity of US		3
Hours		15

### Sixth Term

BIOL 3070	Human Physiology	3
PHYS 2080	General Physics II	5
CHEM 3520	Biochemistry II	3
Writing Across the Curriculum Elective (WAC)		3
Hours		14

### Seventh Term

BIOL 3XXX/4XXX Major Requirement <sup>2</sup>		3
Arts/Humanities Core		3



Electives to get to 124 hours	9
Hours	15
<b>Eighth Term</b>	
BIOL 4700 Biological Literature And Communication	3
BIOL 3XXX/4XXX Major Requirement <sup>2</sup>	3
MATH 2600 Introduction To Statistics or MATH 2640 or Statistics for Applied Science	3
Electives to get to 120 hours	2
Non-US Diversity	3
Hours	14
Total Hours	120-121

<sup>1</sup> May take different 3000-4000 level lab in different semester, 2 are required.

<sup>2</sup> 9 hours of 3000-4000 level BIOL electives are required. Hours from the 3000-4000 level BIOL lab requirement count toward requirement.

## Bachelor of Science in Biology (NEUS Concentration)

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
ENGL 1110	College Composition I	3
Hours		15
<b>Second Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
Humanities Core		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Hours		16
<b>Third Term</b>		
BIOL 3010	Molecular Genetics	3
BIOL 3020	Molecular Genetics Laboratory <sup>1</sup>	2
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
Select one of the following:		4

MATH 1750	Calculus For The Life Sciences With Applications I	
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
Social Sciences Core		3
Hours		16
<b>Fourth Term</b>		
BIOL 3030	Cell Biology	3
CHEM 2420	Organic Chemistry II	3
Select one of the following:		3-4
MATH 1760	Calculus For The Life Sciences With Applications II	
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
Arts/Humanities Core		3
Social Sciences Core		3
Hours		15-16
<b>Fifth Term</b>		
BIOL 3090	Developmental Biology	3
PSY 2400	Cognitive Psychology	3
PHYS 2070	General Physics I	5
CHEM 3510	Biochemistry I	3
Hours		14
<b>Sixth Term</b>		
BIOL 3070	Human Physiology	3
PHYS 2080	General Physics II	5
CHEM 3520	Biochemistry II	3
Writing Across the Curriculum Elective (WAC)		3
Hours		14
<b>Seventh Term</b>		
BIOL 4250	Introduction to Neurobiology <sup>2</sup>	3
PSY 3400	Cognitive Neuropsychology	3
MATH 2600 Introduction To Statistics or MATH 2640 or Statistics for Applied Science		3
BIOL 3XXX/4XXX Biology Elective		3
Non US Diversity		3
Hours		15
<b>Eighth Term</b>		
BIOL 4910	Undergraduate Research (Neuro) <sup>2</sup>	3
BIOL 4700	Biological Literature And Communication ((Neuro))	3
Electives to get to 120 hours		6
Diversity of US		3
Hours		15
Total Hours		120-121

<sup>1</sup> May take different 3000-4000 level lab in different semester, 2 are required.

<sup>2</sup> 9 hours of 3000-4000 level BIOL electives are required. Hours from the 3000-4000 level BIOL lab requirement count toward requirement.

## BS in Medical Technology

This degree program prepares you for certification as a Medical Laboratory Scientist (Medical Technology Scientist). You will complete three years of baccalaureate college work, and then complete 12 months of hospital based clinical training in medical technology. A certification examination is taken at the successful completion of a hospital training program. The requirements for certification are established by the Board of Certification of the American Society of Clinical Pathologists.

Acceptance into the clinical year of the program is competitive and application is made during the fall of the Junior year. In order to be admitted to the clinical year, completion of 90 semester hours of college work with an accumulated GPA of no less than 2.5 overall and a grade of C or better in the pre-clinical science courses is required.

The following foundational science and math courses are required to be completed with a grade of C or better prior to beginning study in the clinical year:

CHEM 1230 General Chemistry I  
CHEM 1280 General Chemistry Lab I  
CHEM 1240 General Chemistry II  
CHEM 1290 General Chemistry Lab II  
CHEM 2410 Organic Chemistry I  
CHEM 2460 Organic Chemistry Laboratory I for Non-Majors  
CHEM 2420 Organic Chemistry II  
CHEM 2470 Organic Chemistry Laboratory II for Non-Majors

BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance  
BIOL 2180 Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance  
BIOL 2150 Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation  
BIOL 2160 Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation  
BIOL 3010 Molecular Genetics  
BIOL 3030 Cell Biology  
BIOL 3070 Human Physiology  
Human or Vertebrate Anatomy with lab (either EXSC 2510 & EXSC 2520 or BIOL 3510)

BIOL 4030 & BIOL 4040 Microbiology with Laboratory

BIOL 4050 & BIOL 4060 Immunology With Laboratory

PHYS 2070 General Physics I  
PHYS 2080 General Physics II

MATH 1320 College Algebra  
MATH 2600 Introduction To Statistics

MEDT 2010 Clinical Laboratory Techniques

The recommended Composition II option for students in the Medical Technology program is ENGL 2950 Science And Technical Report Writing .

The clinical program in the fourth year includes externship sites at the University of Toledo Medical Center laboratory and ProMedica hospital laboratories. A grade of C or better is required in all the clinical year courses (MEDT 4000+) in order to successfully complete the program. Upon successful completion, you will be awarded the degree of Bachelor of Science in Medical Technology and you are then eligible to take the national certification examination.

A description of the program is available at <http://www.utoledo.edu/nsm/bio/undergrad/medtech.html>. The description includes a sample 4-year curriculum. The medical technology adviser will assist students in planning the sequence in which the pre-clinical courses are taken during the student's years at the university. Therefore, interested applicants should consult with the medical technology program advisor, before selecting this professional career option.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
ENGL 1110	College Composition I	3
NSM 1000	Natural Sciences & Mathematics	2
Hours		15
<b>Second Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 2950	Science And Technical Report Writing	3
MATH 1320	College Algebra	3
Hours		16
<b>Third Term</b>		
BIOL 3030	Cell Biology	3
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
MATH 2600	Introduction To Statistics	3
Social Sciences Core		3
Arts/Humanities Core		3
Hours		16
<b>Fourth Term</b>		
BIOL 3010	Molecular Genetics	3
CHEM 2420	Organic Chemistry II	3
EXSC 2510	Human Anatomy	3
EXSC 2520	Human Anatomy Lab	1

CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
MEDT 2010	Introduction to Medical Laboratory Techniques	2
Arts/Humanities Core		3
Hours		16
<b>Fifth Term</b>		
BIOL 4050	Immunology	3
BIOL 4060	Immunology Laboratory	1
PHYS 2070	General Physics I	5
Social Sciences Core		3
Diversity of US		3
<b>Apply for clinical year (terms 7-10) during this term</b>		
Hours		15
<b>Sixth Term</b>		
BIOL 3070	Human Physiology	3
PHYS 2080	General Physics II	5
BIOL 4030	Microbiology	3
BIOL 4040	Microbiology Laboratory	1
Non-US Diversity		3
<b>Must be accepted into the program at this point</b>		
Hours		15
<b>Seventh Term</b>		
MEDT 4020	Clinical Hematology	5
MEDT 4030	Clinical Urinalysis, Body Fluids and Hemostasis	3
MEDT 4100	Clinical Virology	2
MEDT 4080	Clinical Immunohematology	5
Hours		15
<b>Eighth Term</b>		
MEDT 4040	Clinical Chemistry	5
MEDT 4050	Clinical Microbiology	5
MEDT 4060	Clinical Immunology	3
MEDT 4070	Clinical Parasitology	2
Hours		15
<b>Ninth Term</b>		
MEDT 4090	Clinical Mycology	2
MEDT 4950	Clinical Externship: Management	1
MEDT 4500	Clinical Research and Clinical Correlations	3
MEDT 4951	Clinical Externship: Microbiology	4
Hours		10
<b>Tenth Term</b>		
MEDT 4952	Clinical Externship: Chemistry	4
MEDT 4953	Clinical Externship: Hematology	3
MEDT 4954	Clinical Externship: Immunohematology	3
Hours		10
Total Hours		143

## Minor in Biology

The minor in biology requires 22 credits including the following required courses and a minimum GPA of 2.0 in these courses.

Code	Title	Hours
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
BIOL 3010	Molecular Genetics	3
BIOL 3030	Cell Biology	3
Select 6 credits of elective courses at the 3000-4000 level		6
Total Hours		22

No classes used to satisfy the requirements of the Biology minor may be taken P/NC with the exceptions of BIOL 4910, BIOL 4950, and BIOL 4990.

## Department of Chemistry & Biochemistry

Jon Kirchhoff, Chair and Distinguished University Professor  
Cora Lind-Kovacs, Associate Chair

Donald Ronning, Director of Graduate Studies

John Bellizzi, Undergraduate Advising Coordinator, Honors Adviser  
Xiche Hu, Undergraduate Adviser

Dragan Isailovic, Undergraduate Advisor

Timothy Mueser, Undergraduate Advisor

Joseph Schmidt, Undergraduate Adviser, Honors Adviser

Jianglong Zhu, Undergraduate Adviser

## Degrees Offered

The Department of Chemistry and Biochemistry offers degree programs for a Bachelor of Arts or a Bachelor of Science in chemistry or biochemistry.

## Advanced Placement

- Students with a score of 3 on the Chemistry Advanced Placement Exam will receive credit for CHEM 1100 and placement into CHEM 1230 and CHEM 1280;
- Students with a score of 4 will receive credit for CHEM 1230 and CHEM 1280;
- Students with a score of 5 will receive credit for CHEM 1230, CHEM 1280, CHEM 1240, and CHEM 1290.

## Experience in Research

The department offers experience in research under faculty guidance at all levels, in CHEM 2910, CHEM 3910 and CHEM 4910. Students are encouraged to talk with faculty members about research participation and to consult with more than one faculty member about appropriate projects. A student who wishes to participate in research should obtain the consent of a faculty member who agrees to guide this work and the

approval of a departmental undergraduate adviser before the first day of the first semester that he/she enrolls for CHEM 2910, CHEM 3910 or CHEM 4910. Students may enroll in the different courses, CHEM 2910, CHEM 3910 and CHEM 4910, with different faculty members.

## Junior Year Studies in England for Chemistry and Biochemistry Majors

The University of Toledo has an exchange program agreement with the University of Salford, England. Selected UT students spend their junior years at Salford, and students in the Salford three-year chemistry honors program spend their second year at UT. Eligibility is based on scholastic standing. Participants in the program pay their instructional and general fees to their home institutions. Information on the program may be obtained from Dr. Brian Ashburner, Director of the UT-Salford Exchange Program.

## Degrees Offered

- BA in Biochemistry (p. 365)
- BA in Chemistry (p. 366)
- BS in Biochemistry (p. 368)
- BS in Chemistry (p. 369)
- Minor in Chemistry (p. 370)
- Minor in Green Chemistry & Engineering (p. 371)

### CHEM 1090 Elementary Chemistry

[0-3 credit hours]

For students who major in science, engineering or other fields which require chemistry as a prerequisite subject who have not had a previous course in chemistry and whose preparation is not sufficient to begin General Chemistry (CHEM 1230).

**Prerequisites:** MATH 1200 with a minimum grade of C or MATH 1320 with a minimum grade of C or MATH 1340 with a minimum grade of C or MATH 1750 with a minimum grade of C or MATH 1830 with a minimum grade of C or MATH 1850 with a minimum grade of C or ACT Math with a score of 20 or Aleks Math Placement Test with a score of 046 or Math - Coll Algebra Placement with a score of 10 or SAT Mathematics with a score of 480 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Summer, Fall

### CHEM 1100 Chemistry And Society

[3 credit hours]

An introduction to basic chemistry and a survey of the impact that chemistry has on society. Topics include: power, energy, and fuels; water and pollution; soaps and detergents; nutrition; poisons and toxins; plastics and polymers; drugs.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

### CHEM 1110 Elementary Chemistry for the Health Sciences

[3 credit hours]

The study of chemistry for students that are studying nursing or other allied health related fields who have not had a previous course in chemistry or whose preparation in chemistry is not sufficient to begin Chemistry for the Health Sciences (CHEM 1120).

**Prerequisites:** ACT Math with a score of 20 or Aleks Math Placement Test with a score of 046 or Math - Coll Algebra Placement with a score of 10 or MATH 1200 with a minimum grade of C or MATH 1320 with a minimum grade of C or MATH 1340 with a minimum grade of C or MATH 1750 with a minimum grade of C or MATH 1830 with a minimum grade of C or MATH 1850 with a minimum grade of C

**Term Offered:** Spring, Fall

### CHEM 1120 Chemistry For Health Sciences

[4 credit hours]

The study of chemistry for students majoring in nursing and other health-related fields. This course includes general, organic and biochemical topics in condensed form. The impact of chemistry in health fields will be emphasized.

**Prerequisites:** CHEM 1110 with a minimum grade of C or Health Sciences Chemistry Test with a score of 34

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

### CHEM 1150 Chemistry And Society Laboratory

[1 credit hour]

Laboratory introduction to the concepts of chemistry to accompany Chemistry 1100. Demonstrations by laboratory experiments of lessons developed in the accompanying lecture course. Two hours of laboratory per week.

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

### CHEM 1200 Problem Solving In General Chemistry

[1 credit hour]

Problem solving and skill development for students enrolled in CHEM 1230 who obtained a satisfactory score on the chemistry placement test but need additional assistance in selected topics. May be taken only as P/NC. Pre-requisites: CHEM 1090 with a minimum grade of C or better OR pass placement exam.

**Prerequisites:** CHEM 1090 with a minimum grade of C or Aleks Chem Placement Highest with a score of 50 or Chemistry Placement with a score of 17

**Term Offered:** Spring, Fall

### CHEM 1230 General Chemistry I

[0-4 credit hours]

An introduction to atomic structure, chemical bonding, kinetic-molecular theory, energy relationships and structural concepts. This sequence is for students who major in science, engineering or other fields which require chemistry as a prerequisite subject. Three hours lecture and one hour discussion per week.

**Prerequisites:** CHEM 1090 with a minimum grade of C or Chemistry Placement with a score of 17 or Aleks Chem Placement Highest with a score of 50

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**CHEM 1240 General Chemistry II**

[0-4 credit hours]

An introduction to solutions, equilibrium, acid-base theory, energy relationships and structural concepts. This sequence is for students who major in science, engineering or other fields which require chemistry as a prerequisite subject. Three hours lecture and one hour discussion per week.

**Prerequisites:** CHEM 1230 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**CHEM 1280 General Chemistry Lab I**

[1 credit hour]

Experiments over topics covered in CHEM 1230 lectures. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. Three hours of laboratory per week.

**Prerequisites:** CHEM 1230 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**CHEM 1290 General Chemistry Lab II**

[1 credit hour]

Experiments over topics covered in CHEM 1240 lectures. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. Three hours of laboratory per week.

**Prerequisites:** CHEM 1240 (may be taken concurrently) with a minimum grade of C and CHEM 1280 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**CHEM 1910 Survey Of Research**

[1 credit hour]

Survey of current research areas at the frontiers of chemistry, including topics that cross the boundaries with other disciplines. May be taken only as P/NC.

**Term Offered:** Spring

**CHEM 2410 Organic Chemistry I**

[0-3 credit hours]

Study of structure and reactions of organic compounds. Three hours lecture per week.

**Prerequisites:** CHEM 1240 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2420 Organic Chemistry II**

[3 credit hours]

Study of structure and reactions of organic compounds. Three hours lecture per week.

**Prerequisites:** CHEM 2410 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2430 Recitation For Organic Chemistry I**

[1 credit hour]

Optional recitation sections that discuss concepts and solve practice questions in CHEM2410.

**Prerequisites:** CHEM 1240 with a minimum grade of C-

**Term Offered:** Spring, Fall

**CHEM 2440 Recitation For Organic Chemistry II**

[1 credit hour]

Optional recitation sections that discuss concepts and solve practice questions in CHEM2420.

**Prerequisites:** CHEM 2410 with a minimum grade of C-

**Term Offered:** Spring, Fall

**CHEM 2460 Organic Chemistry Laboratory I for Non-Majors**

[1 credit hour]

Practice of organic laboratory techniques. Four hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. This course is for students in majors other than chemistry or biochemistry. Chemistry (BS, BA) or biochemistry majors (BS) should take CHEM 2480.

**Prerequisites:** (CHEM 1240 with a minimum grade of C- and CHEM 1290 with a minimum grade of C-) and CHEM 2410 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2470 Organic Chemistry Laboratory II for Non-Majors**

[1 credit hour]

Practice of organic laboratory techniques. Four hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. This course is for students in majors other than chemistry or biochemistry. Chemistry (BS, BA) or biochemistry majors (BS) should take CHEM 2490.

**Prerequisites:** CHEM 2460 with a minimum grade of C- and CHEM 2420 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2480 Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis**

[0-2 credit hours]

For Chemistry/Biochemistry majors. Introduction to theory and laboratory practice in modern methods of physical separation techniques, and introduction to organic synthetic methods. Special emphasis is made on spectroscopic techniques used in the organic laboratory. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** CHEM 1240 with a minimum grade of C- and CHEM 1290 with a minimum grade of C- and CHEM 2410 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 2490 Organic Chemistry Laboratory II for Majors: Synthesis and Identification**

[2 credit hours]

For Chemistry/Biochemistry majors. Application of synthetic methods to elementary organic synthesis with special emphasis on instrumental approaches to problem solving in organic chemistry. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 2410 with a minimum grade of C- and CHEM 2480 with a minimum grade of C-) and CHEM 2420 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring



**CHEM 2500 Instrumental Methods For Organic Chemistry**

[0-2 credit hours]

A bridge course for students wishing to major in chemistry or biochemistry at the B.S. level after taking the organic non-major lab sequence. Introduction to major instrumental methods employed in the organic laboratory. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 2470 with a minimum grade of C-)

**Term Offered:** Spring, Summer, Fall

**CHEM 2910 Undergraduate Research I**

[1-3 credit hours]

An introduction to research under the guidance of a faculty member. May be repeated. A maximum accumulated credit of 4 hours in 2910 and total of 10 hours in 2910, 3910, 4910 may be applied toward a degree. May be taken only as P/NC.

**Prerequisites:** CHEM 1240 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2920 Readings In Chemistry**

[1-2 credit hours]

Readings from the literature of chemistry. May be taken only as P/NC.

**Term Offered:** Spring, Summer, Fall

**CHEM 3310 Analytical Chemistry**

[2 credit hours]

Theory and applications of chemical equilibria to gravimetric, volumetric and separation techniques. Emphasis on the quantitative aspects of analytical chemistry. Two hours lecture per week.

**Prerequisites:** CHEM 1240 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3360 Analytical Chemistry Laboratory**

[2 credit hours]

Practice of quantitative analytical methods of analysis. Six hours laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 3310 with a minimum grade of C- and CHEM 1290 with a minimum grade of C-)

**Term Offered:** Spring

**CHEM 3510 Biochemistry I**

[3 credit hours]

The chemistry of living systems, beginning with the structures and molecular and biological functions of proteins, nucleic acids, carbohydrates and lipids. Other topics include enzyme kinetics and mechanism, biological membranes and membrane transport, and signal transduction.

**Prerequisites:** CHEM 2420 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3520 Biochemistry II**

[3 credit hours]

Continuing study of the chemistry of living systems. Topics include the metabolism of carbohydrates, lipids and amino acids, energy transductions and photosynthesis, mechanisms and regulation of nucleic acid and protein synthesis.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3560 Biochemistry Laboratory**

[2 credit hours]

Practice of biochemistry laboratory techniques. Six hours of laboratory per week.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3610 Inorganic Chemistry I**

[3 credit hours]

The application of modern theories to the elements and their inorganic compounds. Physical chemical principles are used throughout.

**Prerequisites:** CHEM 2420 with a minimum grade of C- or CHEE 2230 with a minimum grade of C- and CHEE 2330 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3710 Physical Chemistry For The Biosciences I**

[3 credit hours]

Physical and mathematical laws applied to chemistry with examples from biologically important processes. No credit given if Chemistry 3730-3740 are taken.

**Prerequisites:** (MATH 1860 with a minimum grade of D- and PHYS 2070 with a minimum grade of D- and PHYS 2080 with a minimum grade of D-) or (MATH 1860 with a minimum grade of D- and PHYS 2130 with a minimum grade of D-) or (MATH 1860 with a minimum grade of D- and PHYS 2140 with a minimum grade of D-)

**Term Offered:** Fall

**CHEM 3712 Recitation for Chem 3710**

[1 credit hour]

Recitation section that discusses concepts and solves practice questions for CHEM 3710. Must be taken simultaneously with CHEM 3710. Not for major/minor credit.

**Prerequisites:** CHEM 2420 with a minimum grade of D- and CHEM 3710 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Fall

**CHEM 3720 Physical Chemistry For The Biosciences II**

[3 credit hours]

Physical and mathematical laws applied to chemistry with examples from biologically important processes. No credit given if Chemistry 3730-3740 are taken.

**Prerequisites:** CHEM 3710 with a minimum grade of D-

**Term Offered:** Spring

**CHEM 3722 Recitation For Chem 3720**

[1 credit hour]

Optional recitation section that discusses concepts and solves practice questions for CHEM 3720. Must be taken simultaneously with CHEM 3720. Not for major/minor credit.

**Prerequisites:** CHEM 3710 with a minimum grade of C- and CHEM 3720 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3730 Physical Chemistry I**

[3 credit hours]

Fundamental theories and basic laws of chemistry with emphasis on their mathematical development. Thermodynamics, equilibrium, electrochemistry, classical chemical kinetics.

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 2470 with a minimum grade of C- or CHEM 2490 with a minimum grade of C-) and MATH 2850 with a minimum grade of C- and PHYS 2140 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3732 Recitation for Chem 3730**

[1 credit hour]

Optional recitation section that discusses concepts and solves practice questions for CHEM 3730. Must be taken simultaneously with CHEM 3730, Physical Chemistry I. Not for major/minor credit.

**Prerequisites:** CHEM 2420 with a minimum grade of C- and CHEM 3730 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3740 Physical Chemistry II**

[3 credit hours]

Fundamental theories and basic laws of chemistry with emphasis on their mathematical development. Structure of matter, statistical and quantum mechanics, reaction dynamics, spectroscopy.

**Prerequisites:** CHEM 3730 with a minimum grade of C- or CHEE 2230 with a minimum grade of C- and CHEE 2330 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3742 Recitation For Chem 3740**

[1 credit hour]

Optional recitation section that discusses concepts and solves practice questions for CHEM 3740. Must be taken simultaneously with CHEM 3740, Physical Chemistry II. Not for major/minor credit.

**Prerequisites:** CHEM 3730 with a minimum grade of C- and CHEM 3740 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3810 CHEMISTRY OF SUSTAINABLE ENERGY RESOURCES**

[3 credit hours]

Application of the principles of chemistry to understand the issues related to implementing and optimizing a sustainable supply of energy.

**Prerequisites:** CHEM 1240 with a minimum grade of C- and CHEM 1290 with a minimum grade of C- and PHYS 3400 with a minimum grade of C-

**Term Offered:** Spring, Fall

**CHEM 3860 Advanced Laboratory I**

[0-2 credit hours]

Laboratory experiments and techniques relating to subjects developed in CHEM 3710, 3730, or 4570. Three-hour laboratory and one-hour discussion per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 2470 with a minimum grade of C-) or CHEM 2490 with a minimum grade of C- and (CHEM 3710 (may be taken concurrently) with a minimum grade of C- or CHEM 3730 (may be taken concurrently) with a minimum grade of C- or CHEM 4570 (may be taken concurrently) with a minimum grade of C-)

**Term Offered:** Fall

**CHEM 3870 Advanced Laboratory II**

[2 credit hours]

Laboratory experiments and techniques relating to subjects developed in 3710/3720, 3730/3740. Six hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** CHEM 3860 with a minimum grade of C- and (CHEM 3740 (may be taken concurrently) with a minimum grade of C- or CHEM 3720 (may be taken concurrently) with a minimum grade of C-)

**Term Offered:** Spring

**CHEM 3910 Undergraduate Research II**

[1-3 credit hours]

Research under the guidance of a faculty member. A written report is required. May be repeated. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied toward a degree. May be taken only as P/NC.

**Prerequisites:** CHEM 2420 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 3920 Readings In Chemistry II**

[1-2 credit hours]

Readings from the literature of chemistry. May be taken only as P/NC.

**Term Offered:** Spring, Summer, Fall

**CHEM 4200 Green Chemistry**

[3 credit hours]

Introduction to the principles and applications of green chemistry, including industrial applications, atom economy, safer solvent substitutions, chemical alternatives assessment, green chemistry metrics, basic life cycle assessment, and an introduction to chemical toxicology. Students need CHEM 2420 or permission of instructor.

**Prerequisites:** CHEM 2420 with a minimum grade of D-

**CHEM 4210 Environmental Chemistry**

[3 credit hours]

This course will focus on the chemistry of air, water, and soil with specific emphasis on the effects of human made chemical products and byproducts on the environment. Connections with green chemistry will be highlighted. Students need CHEM 2420 or permission of instructor.

**Prerequisites:** CHEM 2420 with a minimum grade of D-

**CHEM 4300 Instrumental Analysis**

[2 credit hours]

An introduction to modern chemical instrumentation and applications to chemical analysis. Topics include electrical, magnetic, nuclear and spectroscopic instrumentation.

**Prerequisites:** (CHEM 3310 with a minimum grade of C- and CHEM 3360 with a minimum grade of C-) and CHEM 3710 (may be taken concurrently) with a minimum grade of C- or CHEM 3730 (may be taken concurrently) with a minimum grade of C- or CHEM 4570 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4305 Advanced Analytical Chemistry**

[4 credit hours]

An overview of new techniques in analytical chemistry. Topics include sample preparation and sampling, spectroscopic, separation, electrochemical, surface characterization and thermal methods.

**Prerequisites:** CHEM 3310 with a minimum grade of C**Term Offered:** Fall**CHEM 4310 Separation Methods**

[3 credit hours]

The theory, design and application of separation methods. Topics include extraction techniques, gas, liquid, and supercritical fluid chromatography, affinity and chiral separation, and capillary electrophoresis.

**Prerequisites:** CHEM 3310 with a minimum grade of C or CHEM 4300 with a minimum grade of C**Term Offered:** Spring**CHEM 4320 Electrochemistry**

[4 credit hours]

A fundamental study of electrochemical concepts, methods, instrumentation and applications.

**Prerequisites:** CHEM 4300 with a minimum grade of C**Term Offered:** Spring**CHEM 4330 Spectroscopic Methods**

[4 credit hours]

A comprehensive study of theory and instrumentation. Applications of spectroscopic methods including spectral interpretation. Topics include a study of absorption, emission, Raman, NMR, ESR, mass spectrometry, and related subjects. Important methodology and strategy in organic synthesis including disconnection and retrosynthetic analysis.

**Prerequisites:** CHEM 2410 with a minimum grade of C**Term Offered:** Spring**CHEM 4350 Separation Methods Laboratory**

[1 credit hour]

Experiments covering topics discussed in CHEM 4310 lectures. Five hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard 287.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 3310 with a minimum grade of C and CHEM 3360 with a minimum grade of C) or (CHEM 4300 with a minimum grade of C and CHEM 4880 with a minimum grade of C)**Corequisites:** CHEM 4310**Term Offered:** Spring**CHEM 4400 Advanced Organic Chemistry**

[4 credit hours]

This course deals with chemical structure and reactivity correlations applied to the study of organic reaction mechanisms; stereochemical features including conformation and stereoelectronic effects; reaction dynamics, isotope effects and molecular orbital theory applied to pericyclic and photochemical reactions; and special reactive intermediates including carbenes, carbanions, and free radicals.

**Prerequisites:** CHEM 2420 with a minimum grade of B**Term Offered:** Fall**CHEM 4410 Organic Synthesis**

[4 credit hours]

Important methodology and strategy in organic synthesis including disconnection and retrosynthetic analysis.

**Prerequisites:** CHEM 2420 with a minimum grade of B**Term Offered:** Spring**CHEM 4430 Medicinal Chemistry**

[4 credit hours]

Qualitative and quantitative aspects of the design of new therapeutic agents are discussed. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids will be examined.

**Term Offered:** Fall**CHEM 4500 Advanced Biological Chemistry**

[4 credit hours]

The chemistry of cellular and molecular transformations in biochemical systems. Molecular structure of proteins, nucleic acids and membranes. Metabolism and biosynthesis of carbohydrates, amino acids and lipids; gene regulation and replication.

**Prerequisites:** CHEM 3520 with a minimum grade of C-**Term Offered:** Fall**CHEM 4510 Protein Chemistry**

[4 credit hours]

A detailed analysis of the structure and function of proteins. Current methodology for the analysis of structure, the basis for molecular associations and relationships between structure and biological function.

**Prerequisites:** CHEM 3510 with a minimum grade of C-**Term Offered:** Spring**CHEM 4520 Enzymology**

[4 credit hours]

Survey of current methods to study enzyme-catalyzed reactions, and application to examples from major enzyme groups. Current topics in enzymology include abzymes and ribozymes, artificial enzymes, and enzymes, and enzyme engineering.

**Prerequisites:** CHEM 3510 with a minimum grade of C-**Term Offered:** Spring**CHEM 4530 Nucleic Acid Chemistry**

[4 credit hours]

The structural and chemical properties of nucleic acids and the resulting biological consequences. Topics include: 3D structures, conformation, protein/nucleic acid interactions, physical properties and chemical reactions, mutagenesis, damage/repair, and recombination.

**Prerequisites:** CHEM 3510 with a minimum grade of C-**Term Offered:** Spring**CHEM 4540 Macromolecular Crystallography**

[2 credit hours]

Fundamental theory and practical application of X-ray diffraction to macromolecular structure determination, including protein crystallization and manipulation, data collection and reduction, phase solution, electron density interpretation, structural refinement.

**Prerequisites:** CHEM 4850 with a minimum grade of D-

**CHEM 4550 Practical Protein Crystallography**

[2 credit hours]

Hands-on training in protein crystallography. Laboratory projects include: protein crystallization, crystal manipulation and mounting, X-ray diffraction data collection, data reduction, structure solution, electron density interpretation, and refinement.

**Prerequisites:** CHEM 4850 with a minimum grade of D-

**CHEM 4560 Biophysical Chemistry Laboratory - WAC**

[2 credit hours]

Data Analysis of modern biophysical measurements related to the topics discussed in CHEM 4570 (Biophysical Chemistry), an introduction to scientific writing, and the preparation of scientific manuscripts. Six hours of laboratory per week.

**Prerequisites:** CHEM 3520 with a minimum grade of D-

**Corequisites:** CHEM 4570

**CHEM 4570 Biophysical Chemistry**

[4 credit hours]

Principles and applications of physical chemistry as applied to biological macromolecules (i.e., proteins and nucleic acids in solution), including thermodynamics, kinetics and spectroscopy of macromolecular interactions.

**Prerequisites:** PHYS 2080 with a minimum grade of C- and CHEM 3520 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4580 Bioinorganic Chemistry**

[4 credit hours]

Survey of biologically important metals and metal-ligand complexes, and the role of metal ions in proteins, metal ion transport and regulation, and metals in medicine.

**Prerequisites:** CHEM 3520 with a minimum grade of C-

**CHEM 4600 Physical Inorganic Chemistry**

[4 credit hours]

Symmetry, bonding theories, magnetism, and spectroscopic characterization of inorganic compounds are described. Coverage of spectroscopic techniques such as NMR, EPR, UV/VIS, IR, AND Mossbauer focus on applications to inorganic systems.

**Prerequisites:** CHEM 3610 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4610 Chemistry of the Transition and Post-Transition Elements**

[4 credit hours]

The organometallic chemistry of the transition metals, lanthanides and actinides is described. Synthesis, structure, bonding, and reactivity are considered. Applications in catalysis, bioinorganic, and materials chemistry are discussed.

**Prerequisites:** CHEM 3610 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4620 Inorganic Chemistry II**

[3 credit hours]

The application of modern theories to the elements and their inorganic compounds-advanced topics. Physical chemical principles are used throughout.

**Prerequisites:** CHEM 3610 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4625 Chemistry of Main Group Elements**

[4 credit hours]

The inorganic and organometallic chemistry of main group elements is described. Synthesis, structure, bonding, and reactivity are considered. The use of main group reagents in synthesis, catalysis, and materials chemistry are discussed.

**Prerequisites:** CHEM 3610 with a minimum grade of C

**Term Offered:** Spring

**CHEM 4700 Advanced Physical Chemistry**

[4 credit hours]

Chemical systems and processes in the context of classical equilibrium thermodynamics. It introduces non-equilibrium and statistical thermodynamics to elucidate chemical changes and the connection between molecular and macroscopic system properties.

**Prerequisites:** CHEM 3740 with a minimum grade of C- or CHEM 3730 with a minimum grade of C-

**CHEM 4710 Quantum Chemistry and Spectroscopy**

[4 credit hours]

Fundamental principles of quantum mechanics and their application to model systems, atoms and molecules; Introduction to molecular spectroscopy.

**Prerequisites:** CHEM 3740 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4720 Modern Topics in Physical Chemistry**

[4 credit hours]

Advanced topics of current interest in physical chemistry. Examples of topics include nanomaterials science, spectroscopic techniques, or molecular modeling.

**Prerequisites:** CHEM 3740 with a minimum grade of C- or CHEM 3730 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4800 Advanced Materials Chemistry**

[4 credit hours]

Introduction to important classes of solids, including conductors, magnetic materials, ferroelectrics, glasses, microporous materials, organic solids. Traditional and novel synthetic approaches, structure/property relationships, and characterization methods specific to solids.

**Prerequisites:** CHEM 3740 with a minimum grade of C

**Term Offered:** Spring

**CHEM 4810 Materials Science I**

[4 credit hours]

A generic materials science approach to the study of crystalline structure and defects (point, line and planar) in crystalline materials. The mechanisms and kinetics of diffusion in the condensed state.

**Term Offered:** Fall

**CHEM 4820 Materials Science II**

[4 credit hours]

A materials science approach to the thermodynamics of condensed state equilibria. Phase transformation kinetics.

**Term Offered:** Spring

**CHEM 4850 X-Ray Crystallography**

[4 credit hours]

Theory and practice of structure determination by X-ray diffraction. Basics of symmetry, diffraction, and reciprocal space. Hands-on introduction to single-crystal and powder methods.

**Prerequisites:** MATH 1840 with a minimum grade of C or MATH 1860 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4880 Advanced Laboratory III**

[2 credit hours]

Laboratory experiments and techniques relating to subjects developed in CHEM 4300. Six hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** CHEM 3860 with a minimum grade of C- and CHEM 4300 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4910 Undergraduate Research III**

[1-3 credit hours]

Thesis level research under the guidance of a faculty member. May be repeated. A minimum of three hours and an acceptable thesis required for credit toward the B.S. major. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied toward a degree. A written report is required. May be taken only as P/NC. **Prerequisite:** GPA (overall and in chemistry courses) above 2.5 and permission of department

**Corequisite:** CHEM 3740 or 4570

**Prerequisites:** CHEM 3740 (may be taken concurrently) with a minimum grade of C- or CHEM 4570 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 4920 Readings In Chemistry III**

[1-2 credit hours]

Readings from the literature of chemistry. May be taken only as P/NC.

**Term Offered:** Spring, Summer, Fall

**CHEM 4980 Special Topics In Chemistry**

[2-4 credit hours]

An advanced course for chemistry majors in an important area of chemistry. Consult the undergraduate adviser for details. Course may be repeated for credit under different specialty numbers (topics).

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 3740 with a minimum grade of C-)

**Term Offered:** Spring, Fall

**Qualified students may be invited to work for the citation "honors in chemistry or biochemistry."**

- 1. Admission:** The honors program is open to all chemistry or biochemistry majors studying toward the B.S. degree and to other students with the consent of the departmental honors adviser and the Chair of the department. The program may be undertaken concurrently with University Honors. Admission to the departmental Honors Program is based on academic standing, recommendations by instructors and an interview with the departmental honors adviser. A minimum overall GPA of 3.3 and a minimum GPA of 3.5 in chemistry course work are required for admission and to maintain good standing in the honors program. Any student may petition the departmental honors adviser for admission to the program. A

student should normally begin the program no later than the end of the sophomore year.

- 2. Requirements:** In addition to the credits required to complete the major, each honors student must satisfactorily complete CHEM 4910 with a written thesis and an oral research report upon completion of the research project. A minimum of six hours of the required chemistry courses at the 3000 and 4000 levels, in addition to CHEM 4910 must be taken for honors. These courses must be in at least two different areas of chemistry, to be selected from among analytical chemistry, biochemistry, inorganic chemistry, organic chemistry and physical chemistry. The instructor in each of these courses will plan activities above the normal requirements of the course for the honors student, in line with the aims of the Honors Program, to encourage independent scholarship. Outside reading and writing may be important components of each Honors course assignment. Students enrolled in the departmental Honors Program also are encouraged to participate in the department's colloquium program. In order to graduate with departmental honors, a minimum overall GPA of 3.3 and a minimum GPA of 3.5 in chemistry course work must be earned.

## BA in Biochemistry

**For the Bachelor of Arts degree in biochemistry,** 35 hours of CHEM courses are required. The following courses must be included:

CHEM 1230 General Chemistry I  
 CHEM 1240 General Chemistry II  
 CHEM 1280 General Chemistry Lab I  
 CHEM 1290 General Chemistry Lab II  
 CHEM 2410 Organic Chemistry I  
 CHEM 2420 Organic Chemistry II  
 CHEM 2460 Organic Chemistry Laboratory I for Non-Majors  
 CHEM 2470 Organic Chemistry Laboratory II for Non-Majors  
 CHEM 3310 Analytical Chemistry  
 CHEM 3360 Analytical Chemistry Laboratory  
 CHEM 3510 Biochemistry I  
 CHEM 3520 Biochemistry II  
 CHEM 3560 Biochemistry Laboratory  
 CHEM 4570 Biophysical Chemistry  
 One advanced Biochemistry course: (either CHEM 4500, CHEM 4510, CHEM 4520, CHEM 4530, or CHEM 4580)

The following related courses are also required:

Calculus I and II: (MATH 1750 and MATH 1760, MATH 1830 and MATH 1840, or MATH 1850 and MATH 1860)

Two semesters of general physics either algebra or calculus based: (PHYS 2070 and PHYS 2080, or PHYS 2130 and PHYS 2140)

BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance  
 BIOL 3030 Cell Biology

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CHEM 1230	General Chemistry I	4



CHEM 1280	General Chemistry Lab I	1
Select one of the following:		4
MATH 1750	Calculus For The Life Sciences With Applications I	
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
ENGL 1110	College Composition I	3
NSM 1000	Natural Sciences & Mathematics	2
Humanities/Fine Arts Core		3
Hours		17

**Second Term**

CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
Select one of the following:		3-4
MATH 1760	Calculus For The Life Sciences With Applications II	
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
CHEM 1910	Survey Of Research	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core		3
Hours		15-16

**Third Term**

CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
CHEM 3310	Analytical Chemistry	2
PHYS 2070	General Physics I	5
Humanities/Fine Arts Elective: English Literature		3
Hours		14

**Fourth Term**

CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
CHEM 3360	Analytical Chemistry Laboratory	2
PHYS 2080	General Physics II	5
History Core - College Requirement		3
Hours		14

**Fifth Term**

CHEM 3510	Biochemistry I	3
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
Elementary Foreign Language I <sup>1</sup>		4
Humanities/Fine Arts Elective		3
Hours		14

**Sixth Term**

CHEM 3520	Biochemistry II	3
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CHEM 3560	Biochemistry Laboratory	2
BIOL 3030	Cell Biology	3
Social Science Core Elective		3
Elementary Foreign Language II <sup>1</sup>		4
Hours		15

**Seventh Term**

CHEM 4570	Biophysical Chemistry	4
CHEM 4500	Advanced Biological Chemistry	4
or select one advanced biochemistry course in the spring semester <sup>2</sup>		
WAC course in major, either		2
CHEM 4560	Biophysical Chemistry Laboratory - WAC	
CHEM 3860	Advanced Laboratory I	
Humanities/Fine Arts Core Elective II		3
Non-US Diversity		3
Hours		16

**Eighth Term**

One advanced biochemistry course, if not already taken in fall. Either: <sup>2</sup>		4
CHEM 4510	Protein Chemistry	
CHEM 4520	Enzymology	
CHEM 4530	Nucleic Acid Chemistry	
CHEM 4580	Bioinorganic Chemistry	
Social Science Elective		3
US Diversity		3
Writing Across the Curriculum Course (outside major)		3
Electives - to get to 120 hours		2-3
Hours		15-16
Total Hours		120-122

<sup>1</sup> FL Foreign Language to be decided by student and adviser.

<sup>2</sup> Listed twice because courses offered in different semesters; only need one course.

See course catalog for pre- and co-requisites.

Courses which satisfy the College and University degree requirements can be determined by running a degree audit and looking at the list of courses presented as satisfying the requirement. Always try to take courses in which you have an interest.

## BA in Chemistry

**For the Bachelor of Arts degree in chemistry**, 37 hours of CHEM courses are required.

The following courses must be included:

CHEM 1230	General Chemistry I
CHEM 1240	General Chemistry II
CHEM 1280	General Chemistry Lab I
CHEM 1290	General Chemistry Lab II
CHEM 2410	Organic Chemistry I
CHEM 2420	Organic Chemistry II

CHEM 2480 Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis  
 CHEM 2490 Organic Chemistry Laboratory II for Majors: Synthesis and Identification  
 CHEM 3310 Analytical Chemistry  
 CHEM 3360 Analytical Chemistry Laboratory  
 CHEM 3710 Physical Chemistry For The Biosciences I  
 CHEM 3720 Physical Chemistry For The Biosciences II  
 CHEM 3510 Biochemistry I or CHEM 3610 Inorganic Chemistry  
 CHEM 3860 Advanced Laboratory I  
 Additional 3000 or 4000 level CHEM courses to reach 37 hours in the major, *excluding* CHEM 3722, CHEM 3732, CHEM 3742, CHEM 3910, CHEM 3920, CHEM 4910 and CHEM 4920

The following related courses are also required:

Calculus I and II: (either MATH 1830 and MATH 1840, or MATH 1850 and MATH 1860)

Two semesters of general physics either algebra or calculus based: (PHYS 2070 and PHYS 2080, or PHYS 2130 and PHYS 2140)

One of the following : MATH 2850, MATH 2890, MATH 3610, BIOL 2170 (or a 4000 level BIOL course), EEES 2010, EEES 2200, EEES 2400, EEES 3050, EEES 4220, or EEES 4450.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
ENGL 1110	College Composition I	3
NSM 1000	Natural Sciences & Mathematics	2
Hours		14
<b>Second Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
CHEM 1910	Survey Of Research	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core		3
Hours		16
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2480	Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis	2
CHEM 3310	Analytical Chemistry	2
Select one of the following: <sup>1</sup>		3-4

MATH 2850	Elementary Multivariable Calculus (Suggested)	
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance ( or any BIOL 4000 level class)	
EEES 2010	Introduction To Environmental Studies	
EEES 2100	Fundamentals Of Geology	
EEES 2200	Climate Change	
EEES 2400	Oceanography And Water Resources	
EEES 3050	General Ecology	
EEES 4220	Environmental Geochemistry	
EEES 4450	Hazardous Waste Management	
MATH 2890	Numerical Methods And Linear Algebra	
MATH 3610	Statistical Methods I	
Select one of the following:		5
PHYS 2070	General Physics I	
PHYS 2130	Physics For Science And Engineering Majors I	
Hours		15-16
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2490	Organic Chemistry Laboratory II for Majors: Synthesis and Identification	2
CHEM 3360	Analytical Chemistry Laboratory	2
Select one of the following:		5
PHYS 2080	General Physics II	
PHYS 2140	Physics For Science And Engineering Majors II	
Arts/Humanities Core		3
Hours		15
<b>Fifth Term</b>		
CHEM 3710	Physical Chemistry For The Biosciences I	3
CHEM 3712	Recitation for Chem 3710	1
CHEM 3860	Advanced Laboratory I (WAC)	2
CHEM 3510	Biochemistry I (offered Fall only)	3
Fine Arts College Requirement		3
Elementary Foreign Language I <sup>2</sup>		4
Hours		16
<b>Sixth Term</b>		
CHEM 3720	Physical Chemistry For The Biosciences II (Fall/Spring)	3
CHEM 3722	Recitation For Chem 3720	1
CHEM 3610	Inorganic Chemistry I (if CHEM 3510 was not taken in the fall)	3
Elementary Foreign Language II <sup>2</sup>		4
Social Sciences Core		3
History College Requirement		3
Hours		17
<b>Seventh Term</b>		
Chemistry 3000-4000 elective <sup>3</sup>		2-4

Elective needed to reach 120 hours	3
Multicultural Diversity of US	3
English Literature College Requirement	4
Hours	12-14
<b>Eighth Term</b>	
Electives to reach 120 hours	6
Multicultural non-US Diversity	3
NSM Science Elective	3
Arts/Humanities Core	3
Hours	15
Total Hours	120-123

- <sup>1</sup> If taking, or have taken MATH 2850, this can be an elective.  
<sup>2</sup> FL Foreign Language to be decided by student and adviser.  
<sup>3</sup> Excluding CHEM 3732, CHEM 3742, CHEM 3910, CHEM 3920, CHEM 4910, CHEM 4920.

See course catalog for pre- and co-requisites.

Courses which satisfy the College and University degree requirements can be determined by running a degree audit and looking at the list of courses presented as satisfying the requirement. Always try to take courses in which you have an interest.

## BS in Biochemistry

The Bachelor of Science in Biochemistry meets the minimum standard of the American Chemical Society as specified by its Committee on Professional Training, so that the degree recipients are certified by the American Chemical Society and are eligible for full membership in the society. Students pursuing a chemistry or biochemistry major may not elect the P/NC option in major or related courses, or prerequisites for these courses, except as noted in specific course descriptions.

**For the bachelor of science degree in biochemistry**, 49 hours of CHEM courses are required. The following required courses must be included:

CHEM 1230 General Chemistry I  
 CHEM 1240 General Chemistry II  
 CHEM 1280 General Chemistry Lab I  
 CHEM 1290 General Chemistry Lab II  
 CHEM 2410 Organic Chemistry I  
 CHEM 2420 Organic Chemistry II  
 CHEM 2480 Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis  
 CHEM 2490 Organic Chemistry Laboratory II for Majors: Synthesis and Identification  
 CHEM 3310 Analytical Chemistry  
 CHEM 3360 Analytical Chemistry Laboratory  
 CHEM 3510 Biochemistry I  
 CHEM 3520 Biochemistry II  
 CHEM 3560 Biochemistry Laboratory  
 CHEM 3610 Inorganic Chemistry I  
 CHEM 4300 Instrumental Analysis  
 CHEM 4560 Biophysical Chemistry Laboratory - WAC  
 CHEM 4570 Biophysical Chemistry  
 One advanced laboratory: (CHEM 3910, CHEM 4880, or CHEM 4910)

One advanced biochemistry course: (CHEM 4500, CHEM 4510, CHEM 4520, CHEM 4530, CHEM 4580, or CHEM 4980 (with a biochemistry focus))

The following related courses are also required:

Calculus I and II: (MATH 1750 and MATH 1760, MATH 1830 and MATH 1840, or MATH 1850 and MATH 1860)

Two semesters of general physics either algebra or calculus based: (PHYS 2070 and PHYS 2080, or PHYS 2130 and PHYS 2140)

BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance

BIOL 3030 Cell Biology

A minimum cumulative GPA of 2.5 in chemistry is required for graduation with this degree.

Below is a plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
Select one of the following:		4
MATH 1750	Calculus For The Life Sciences With Applications I	
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
ENGL 1110	College Composition I	3
NSM 1000	Natural Sciences & Mathematics	2
Arts/Humanities Core		3
Hours		17
<b>Second Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
CHEM 1910	Survey Of Research	1
Select one of the following:		3-4
MATH 1760	Calculus For The Life Sciences With Applications II	
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core		3
Hours		15-16
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2480	Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis	2
CHEM 3310	Analytical Chemistry	2
Select one of the following:		5
PHYS 2070	General Physics I	

PHYS 2130	Physics For Science And Engineering Majors I	
Arts/Humanities Core		3
Hours		15
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2490	Organic Chemistry Laboratory II for Majors: Synthesis and Identification	2
CHEM 3360	Analytical Chemistry Laboratory	2
Select one of the following		5
PHYS 2080	General Physics II	
PHYS 2140	Physics For Science And Engineering Majors II	
Social Sciences Core		3
Hours		15
<b>Fifth Term</b>		
CHEM 3510	Biochemistry I	3
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
Diversity of US		3
WAC course outside major		3
Elective		3
Hours		16
<b>Sixth Term</b>		
CHEM 3520	Biochemistry II	3
CHEM 3910	Undergraduate Research II	1
CHEM 3560	Biochemistry Laboratory	2
CHEM 3610	Inorganic Chemistry I	3
BIOL 3030	Cell Biology	3
Non-US Diversity		3
Hours		15
<b>Seventh Term</b>		
CHEM 4570	Biophysical Chemistry	4
CHEM 4300	Instrumental Analysis	2
CHEM 4560	Biophysical Chemistry Laboratory - WAC	2
Select one of the following:		2
CHEM 3910	Undergraduate Research II	
CHEM 4910	Undergraduate Research III	
CHEM 4880	Advanced Laboratory III	
Elective or select one of the following: <sup>1</sup>		3-4
CHEM 4500	Advanced Biological Chemistry	
or select one advanced biochemistry course in spring semester		
Hours		13-14
<b>Eighth Term</b>		
Elective or one advanced biochemistry course if not taken in the fall: <sup>1</sup>		3-4
CHEM 4510	Protein Chemistry	
CHEM 4520	Enzymology	
CHEM 4530	Nucleic Acid Chemistry	

CHEM 4580	Bioinorganic Chemistry	
CHEM 4980	Special Topics In Chemistry	
Electives to reach 120 hours		11-12
Hours		14-16
Total Hours		120-124

<sup>1</sup> Listed twice because courses offered in different semesters; only need one course.

See course catalog for pre- and co-requisites.

Courses which satisfy the College and University degree requirements can be determined by running a degree audit and looking at the list of courses presented as satisfying the requirement. Always try to take courses in which you have an interest.

## BS in Chemistry

The Bachelor of Science in Chemistry meets the minimum standard of the American Chemical Society as specified by its Committee on Professional Training, so that the degree recipients are certified by the American Chemical Society and are eligible for full membership in the society. Students pursuing a chemistry or biochemistry major may not elect the P/NC option in major or related courses, or prerequisites for these courses, except as noted in specific course descriptions.

**For the bachelor of science degree in chemistry** 44 hours of CHEM courses are required.

The following courses must be included:

CHEM 1230	General Chemistry I
CHEM 1240	General Chemistry II
CHEM 1280	General Chemistry Lab I
CHEM 1290	General Chemistry Lab II
CHEM 2410	Organic Chemistry I
CHEM 2420	Organic Chemistry II
CHEM 2480	Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis
CHEM 2490	Organic Chemistry Laboratory II for Majors: Synthesis and Identification
CHEM 3310	Analytical Chemistry
CHEM 3360	Analytical Chemistry Laboratory
CHEM 3510	Biochemistry I
CHEM 3610	Inorganic Chemistry I
CHEM 3730	Physical Chemistry I
CHEM 3740	Physical Chemistry II
CHEM 3860	Advanced Laboratory I
CHEM 3870	Advanced Laboratory II
CHEM 4300	Instrumental Analysis
CHEM 4880	Advanced Laboratory III

Optional advanced chemistry courses include any other 3000 or 4000 level CHEM courses *except* the following: CHEM 3712 CHEM 3722, CHEM 3732, CHEM 3742, CHEM 3910, CHEM 3920, and CHEM 4920

The following related courses are also required:

Calculus I and II: (either MATH 1830 and MATH 1840, or MATH 1850 and MATH 1860)

MATH 2850 Elementary Multivariable Calculus

Two semesters of calculus based general physics: (PHYS 2130 and PHYS 2140)

A minimum cumulative GPA of 2.5 in chemistry courses is required for graduation with this degree.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
Choose one of the following		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
ENGL 1110	College Composition I	3
NSM 1000	Natural Sciences & Mathematics	2
Arts/Humanities Core		3
Hours		17
<b>Second Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
Choose one of the following		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
CHEM 1910	Survey Of Research	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core		3
Hours		16
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2480	Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis	2
MATH 2850	Elementary Multivariable Calculus	4
CHEM 3310	Analytical Chemistry	2
PHYS 2130	Physics For Science And Engineering Majors I	5
Hours		16
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2490	Organic Chemistry Laboratory II for Majors: Synthesis and Identification	2
CHEM 3360	Analytical Chemistry Laboratory	2
PHYS 2140	Physics For Science And Engineering Majors II	5
Social Sciences Core		3
Hours		15

**Fifth Term**

CHEM 3510	Biochemistry I	3
CHEM 3730	Physical Chemistry I	3
CHEM 3860	Advanced Laboratory I	2
CHEM 3910	Undergraduate Research II	1
Multicultural Non-US Diversity		3
Social Science Core elective		3
Hours		15

**Sixth Term**

CHEM 3610	Inorganic Chemistry I	3
CHEM 3740	Physical Chemistry II	3
CHEM 3870	Advanced Laboratory II	2
CHEM 3910	Undergraduate Research II	1
Multicultural Diversity of US		3
Elective		3
Hours		15

**Seventh Term**

CHEM 4300	Instrumental Analysis	2
CHEM 4880	Advanced Laboratory III	2
CHEM 4910	Undergraduate Research III	1
Choose One of the Following		3-4
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	
EEES 2010	Introduction To Environmental Studies	
EEES 2100	Fundamentals Of Geology	
EEES 2150	Biodiversity	
Electives		6
Hours		14-15

**Eighth Term**

Art/Humanities Core		3
Electives - to reach 120 hours		9
Hours		12
Total Hours		120-121

See course catalog for pre- and co-requisites.

Electives without recommendation are to be determined by the student using Banner Degree Audit program to determine which courses fulfill requirements and then by student interest of courses presented as satisfying the requirement.

## Minor in Chemistry

The minor in chemistry is designed to complement the objectives of students in a variety of majors. A minimum of 22 hours of chemistry courses and a minimum GPA of 2.0 in those courses are required for the minor in chemistry. No courses in the minor may be taken P/NC except CHEM 4920. The following courses must be included:



Code	Title	Hours
CHEM 1230	General Chemistry I	4
CHEM 1240	General Chemistry II	4
CHEM 1280	General Chemistry Lab I	1
CHEM 1290	General Chemistry Lab II	1
CHEM 2410	Organic Chemistry I	3
CHEM 2420	Organic Chemistry II	3
Select one of the following:		2-4
CHEM 2460 & CHEM 2470	Organic Chemistry Laboratory I for Non-Majors and Organic Chemistry Laboratory II for Non-Majors	
CHEM 2480 & CHEM 2490	Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis and Organic Chemistry Laboratory II for Majors: Synthesis and Identification	
Additional courses to reach 22 hours may include any 3000 or 4000 level CHEM course except the following: <sup>1</sup>		4
CHEM 3712	Recitation for Chem 3710	
CHEM 3722	Recitation For Chem 3720	
CHEM 3732	Recitation for Chem 3730	
CHEM 3742	Recitation For Chem 3740	
CHEM 3910	Undergraduate Research II	
CHEM 3920	Readings In Chemistry II	
CHEM 4910	Undergraduate Research III	
Total Hours		22-24

<sup>1</sup> MBC 3550 and MBC 3560 may be substituted for CHEM 3510 and CHEM 3520.

## Minor in Green Chemistry & Engineering

The minor in green chemistry and engineering (MGCE) is designed for students who want to expand the breadth of their undergraduate majors by incorporating the principles of green chemistry and green engineering into their BA and BS degrees in chemistry, chemical engineering, environmental science or a related area. A minimum of 21 hours of course work and a minimum GPA of 2.0 in those courses are required for the minor. No courses in the minor may be taken P/NC.

Code	Title	Hours
Required Courses		
CHEM 2410	Organic Chemistry I	3
CHEM 2420	Organic Chemistry II	3
CHEM 4200	Green Chemistry	3
CHEE 4010	Green Engineering Principles <sup>1</sup>	3
Electives		
CHEM 4210 or CHEE 4110	Environmental Chemistry Green Engineering Applications	3
CHEM 3810 or CHEE 4120	CHEMISTRY OF SUSTAINABLE ENERGY RESOURCES Biofuels	3

or EEES 4220	Environmental Geochemistry	
or EEES 4450	Hazardous Waste Management	
or ECON 3240	Environmental Economics	
or PSC 4340	Environmental Policy	
One additional elective from above lists		3
1) Chemical Engineering students may substitute one additional elective class in place of CHEE 4010		
Total Hours		21

Students completing the MGCE must be sure that at least 12 credit hours of the minor requirements are unique to the MGCE, and are not being used to satisfy requirements in the major or another minor.

## Department of Environmental Sciences

Timothy G. Fisher, Chair, undergraduate advisor (environmental sciences)  
 Von Sigler, Associate Chair, undergraduate advisor (BIOM)  
 Alison L. Sponberg, undergraduate advisor (environmental studies)  
 James Martin-Hayden, undergraduate advisor (environmental sciences)  
 Jonathan M. Bossenbroek, Honors research advisor  
 Richard Becker, undergraduate advisor (geology)  
 Scott Heckathorn, undergraduate advisor (environmental sciences)

## Degrees Offered

The Department of Environmental Sciences offers degree programs for a Bachelor of Arts in environmental studies, a Bachelor of Science in environmental science, a Bachelor of Science in geology, and a Bachelor of Science in biology with a concentration in ecology and organismal biology (BIOM). <http://www.utoledo.edu/nsm/envsciences/undergrad/>

## Junior Year Studies at the University of Hertfordshire in England for Environmental Studies/Sciences Majors

The College of Natural Sciences and Mathematics of The University of Toledo participates in an exchange program with the University of Hertfordshire, England. Selected UT students have the opportunity to spend their junior year at Hertfordshire. Participants in the program will pay their instructional and general fees to The University of Toledo. Eligibility to participate in the program is based on scholastic criteria. Information on the program may be obtained from the departmental exchange program advisor (W. Von Sigler). Details are available on academic issues, living accommodations, recreational opportunities and life in England.

## Junior Year Studies at the University of Salford in England for Environmental Sciences and Biology Majors

Selected UT students in the Department of Environmental Sciences have the opportunity to spend their junior year at Salford. Participants in the program will pay their instructional and general fees to The University of Toledo. Eligibility to participate in the program is based on criteria established by the Department of Environmental Sciences. Information

on the program may be obtained from the departmental exchange program advisor (W. Von Sigler) or from Dr. Brian Ashburner, Director of the UT-Salford Exchange Program. Details are available on academic issues, living accommodations, recreational opportunities and life in England on the departmental Web site at <http://www.utoledo.edu/nsm/bio/salford/>

## Degrees offered

- BA in Environmental Studies (p. 377)
- BS in Biology with a Concentration in Ecology and Organismal Biology (p. 378)
- BS in Environmental Sciences (p. 379)
- BS in Geology (p. 381)
- Minor in Environmental Sciences (p. 382)
- Minor in Geology (p. 382)

### EEES 1010 Physical Geology

[3 credit hours]

Introduction to the physical processes and composition of the Earth, including plate tectonics, internal structure, origin and classification of rocks and minerals, causes of geologic hazards such as earthquakes and volcanoes, surficial processes, water and natural resources, and geologic time. No credit if EEES2100 is taken. Natural sciences core course. Optional 1-credit lab, EEES 1020.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

### EEES 1020 Introductory Geology Laboratory

[1 credit hour]

Investigations of fundamental geological processes, the materials of the Earth, and geologic time. Identification of rocks and minerals.

Interpretation of geologic features and processes from maps, aerial images and physical models. This lab supports the introductory geology courses EEES 1010, 1050 and 2100. Natural sciences lab core course.

**Prerequisites:** EEES 1010 (may be taken concurrently) with a minimum grade of D- or EEES 2100 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

### EEES 1050 Geological Hazards And The Environment

[3 credit hours]

Introduction to risk mitigation involving hazardous geological processes and materials: volcanic eruptions, earthquakes, floods, ground subsidence and collapse, radon, asbestos and others.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

### EEES 1130 Down To Earth: Environmental Science

[3 credit hours]

Evaluation of environmental controversies using ecology, economics and human values. Issues range from global change, overpopulation, food production, pollution, disease, endangered species, to unique habitats including rainforests and coral reefs. (not for credit in the major)[Fall, Spring]. Natural Sciences core course.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

### EEES 1140 Environmental Solutions Laboratory

[1 credit hour]

Basic scientific methods are used to conduct laboratory and field studies relevant to contemporary environmental issues.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

### EEES 1150 Marine Biology

[3 credit hours]

An exploration of life in the world's oceans, emphasizing how marine organisms thrive in broadly diverse environments. Topics include the major ocean habitats, and ecological relationships among associated flora/fauna.

**Term Offered:** Spring

Core Natural Sciences

### EEES 1160 Plants And Society

[3 credit hours]

This course centers on the importance of plants to our planet. Includes an introduction to botany and discussion of plants that provide food, materials, spices, medicines, drugs and poisons. (not for major credit)

Core Natural Sciences

### EEES 1170 Microbes And Society

[3 credit hours]

A survey course focused on how microbes impact everyday life including discussions of infectious disease, food safety, and bioterrorism. Natural Sciences core course.

**Term Offered:** Spring, Summer

Core Natural Sciences

### EEES 1180 Marine Biology Coral Reef Lab

[1 credit hour]

A virtual laboratory-based exploration of the coral reef environment and the dynamics of the coral reef ecosystem. The web of life on reefs will be examined at multiple levels, including living and non-living components and specialized roles among species, with emphasis on the delicate balance of natural processes and impacts of various stressors. Online data labs will be enhanced with at-home activities including creating and manipulating a physical model of a reef ecosystem. This course fulfills the university requirement for a natural science laboratory.

**Term Offered:** Spring

Core Natural Sciences

### EEES 2010 Introduction To Environmental Studies

[3 credit hours]

Introduction to issues currently affecting environmental quality. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.

**Term Offered:** Spring, Fall

### EEES 2020 Introduction to the Environment: Energy and Climate

[3 credit hours]

Introduction to issues currently affecting environmental quality associated with energy production and the impacts to climate change. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.

**Term Offered:** Spring, Fall

Core Natural Sciences

**EEES 2030 Introduction to the Environment Land-Use and Water**

[3 credit hours]

Introduction to issues currently affecting environmental quality associated with land-use (e.g. agriculture and urbanization) and focusing on the impacts to biodiversity and aquatic systems. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.

**Term Offered:** Spring, Fall**EEES 2100 Fundamentals Of Geology**

[4 credit hours]

Consideration of earth materials and the dynamic external and internal processes active on earth; the physical and biological history of the earth. Intended for science majors.

**EEES 2150 Biodiversity**

[4 credit hours]

Exploration of biodiversity and general biological processes and problems as they are experienced by all living organisms: genetics, reproduction, evolution, and ecology.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**EEES 2160 Biodiversity Laboratory**

[1 credit hour]

Laboratory exercises designed to complement the material covered in EEES 2150.

**Corequisites:** EEES 2150**Term Offered:** Spring, Fall

Core Natural Sciences

**EEES 2200 Climate Change**

[3 credit hours]

An overview of the understanding of climate change and role of human activities, including atmospheric processes, greenhouse effect, carbon cycling, physical evidence, impacts, and proposed global actions in response.

**Term Offered:** Spring, Summer, Fall**EEES 2230 Earth History: Historical Geology and Paleontology**

[4 credit hours]

The morphology and paleoecology of fossil taxa, significant strata, and tectonic events important to the interpretation of paleoenvironments and Earth history are stressed. Field trip(s) required.

**Prerequisites:** EEES 2100 with a minimum grade of D-**Term Offered:** Spring**EEES 2400 Oceanography And Water Resources**

[3 credit hours]

An exploration of the geological, physical, chemical and biological nature of the oceans. Emphasis on the origin and evolution of ocean basins, plate tectonics, properties of seawater, and physical processes of circulation, especially as related to climate, the hydrologic cycle, and life in the oceans.

**Term Offered:** Spring, Fall**EEES 2500 Computer Applications In Environmental Sciences**

[1 credit hour]

Desktop computers used by scientists: word processing, spreadsheets, databases, GPS, processing GPS files, contour and mapping software.

**Term Offered:** Spring, Fall**EEES 2510 Advanced Computer Applications**

[2 credit hours]

Collecting and analyzing spatial data, digital elevation models, mathematical modeling of natural processes and introduction to matrix operations in Excel.

**Prerequisites:** EEES 2500 with a minimum grade of C-**Term Offered:** Spring**EEES 2600 Techniques for Environmental Sciences**

[3 credit hours]

A "hands-on" active-learning lab-based course exploring a range of commonly-used analytical techniques used in environmental sciences, as well many other fields. The techniques covered include: nutrient analysis, gas exchange, growth analysis, electrophoresis, immuno-detection techniques such as ELISA, and metabolite analysis.

**Prerequisites:** EEES 2150 with a minimum grade of C- and EEES 2500 with a minimum grade of C- and CHEM 1230 with a minimum grade of C-**Term Offered:** Spring**EEES 2760 Field Methods Lab**

[3 credit hours]

Field exercises relevant to data collection, data analysis, and use of standard field methods and equipment in local ecosystems around Toledo. Field trips will focus on developing testable hypotheses, collecting data to answer those hypotheses using standard methods and equipment, analyzing data, and writing and presenting results in a scientific format.

**Prerequisites:** EEES 2150 with a minimum grade of D-**Term Offered:** Fall**EEES 2980 Special Topics**

[1-4 credit hours]

A lower division undergraduate course covering some aspect of environmental sciences not covered in the formal course offerings of the department. Students may repeat the course for different topics.

**Term Offered:** Spring, Fall**EEES 2990 Independent Study**

[1-4 credit hours]

Student selects an appropriate approved subject for individualized study and prepares a report or gives equivalent evidence of mastery of the selected subject.

**Term Offered:** Summer, Fall**EEES 3000 Geology Of National Parks**

[3 credit hours]

Study of regional geology of the U.S., focusing on national parks and monuments with the aim of furthering the student's geological knowledge and encouraging visitation as a tourist.

**Prerequisites:** EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-**Term Offered:** Fall**EEES 3050 General Ecology**

[3 credit hours]

The structure, function and regulation of populations, communities and ecosystems, emphasizing human activities and their ecological consequences.

**Prerequisites:** EEES 2150 with a minimum grade of C- or BIOL 2150 with a minimum grade of C-**Term Offered:** Spring, Fall

**EEES 3060 General Ecology Laboratory**

[1 credit hour]

Laboratory and field exercises demonstrating ecological principles.

**Corequisites:** EEES 3050**Term Offered:** Fall**EEES 3100 Surficial Processes**

[3 credit hours]

Description and study of the earth's surface features from the point of view of their origin, including landforms created by glaciers, rivers, the wind, along coasts, tectonics and erosional/depositional processes. Field trip required.

**Prerequisites:** EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-**Term Offered:** Fall**EEES 3210 Mineralogy and Petrology**

[4 credit hours]

Mineralogy: Occurrence, characteristics and crystal chemistry, identification and geologic environments of formation of common minerals. Igneous and Metamorphic Petrology: Igneous and metamorphic rock characteristics, origins, classification and interpretation of conditions of formation. Laboratory: Using megascopically observable physical properties to identify and classify common minerals and infer crystal chemistry. Megascopic identification and classification of igneous and metamorphic rocks, identification of mineral associations and interpretation of conditions of formation.

**Prerequisites:** (EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-) and CHEM 1230 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 3220 Sedimentary Petrology and Stratigraphy**

[3 credit hours]

Megascopic description of sediments and sedimentary rocks, including their characteristics, classification and diagenesis; introduction to depositional processes and environments of sediments, and stratigraphic relationships of sedimentary rocks.

**Prerequisites:** EEES 2100 with a minimum grade of C- or EEES 1010 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 3250 Engineering Geology**

[3 credit hours]

An introduction to the application of geologic principles to engineering practices through a series of readings, laboratory exercises and practical problems. First the fundamentals of geology are presented including: plate tectonics and the resulting distributions of geologic materials and phenomena; mineral, rock and soil characterization; geologic structures; and construction and use of geologic maps. The remainder of the course investigates specific geologic processes and applications to engineering practices.

**Prerequisites:** MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 2450 with a minimum grade of C-**Term Offered:** Fall**EEES 3310 FIELD METHODS: STRUCTURAL GEOLOGY AND MAPPING**

[3 credit hours]

Rock deformation and its expression on maps; applying geometrical and trigonometric principles to solve problems involving dipping strata; stereonet applications, interpreting geological maps, constructing cross sections, geological GIS applications.

**Prerequisites:** EEES 2100 with a minimum grade of C- or EEES 1010 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 3800 Botany**

[4 credit hours]

A detailed introduction for science majors to general plant biology, via lecture and laboratory. Topics include plant structure, function, evolution, diversity, agriculture and other non-food uses, and ecology.

**Prerequisites:** EEES 2150 with a minimum grade of D- and BIOL 2170 with a minimum grade of D-**Term Offered:** Spring**EEES 3810 Science of Gardening**

[3 credit hours]

This course explores the science underlying gardening, and it is designed to foster understanding of basic scientific knowledge and the scientific process, as well as the practical application of science. The course focuses on how plants are affected by their biotic and abiotic environment, especially light, water, temperature, nutrients, soil, and enemies and partners.

**Prerequisites:** EEES 2150 with a minimum grade of C-**EEES 3900 Literature And Communications In The Environmental Sciences**

[3 credit hours]

Survey and analysis of environmental issues featuring guest experts from a variety of environment-related occupations, readings from the environmental literature and student reports.

**Prerequisites:** EEES 2150 with a minimum grade of C- or BIOL 2150 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 4100 Glacial Geology**

[3 credit hours]

To understand glaciers and glacial landscapes. Topics include mass balance, ice flow, hydrology, erosion, deposition, landforms, glacial lakes and development of the Ohio glacial landscape. Field trip is mandatory.

**Prerequisites:** EEES 3100 with a minimum grade of C-**Term Offered:** Spring**EEES 4150 Evolution**

[3 credit hours]

The modern theory of evolution is presented within a general framework of biological and geological evidence focusing on the fossil record, early biomolecules, protein synthesis, genetics, phylogeny and vertebrate evolution.

**Prerequisites:** (EEES 2150 with a minimum grade of C- or BIOL 2150 with a minimum grade of C-) and CHEM 1230 with a minimum grade of C-**Term Offered:** Spring, Summer, Fall

**EEES 4160 Environmental Data Management**

[3 credit hours]

An introductory course in data management for environmental science seniors covering the basics of data management practices and the use of Excel and R for data preparation, evaluation, analysis, visualization, and interpretation. Prerequisite: EEES 2500 or approval of instructor.

**Prerequisites:** EEES 2500 with a minimum grade of C-**Term Offered:** Fall**EEES 4200 Quaternary Geology**

[3 credit hours]

To provide understanding of such cyclical events as climate change, sea level fluctuations, vegetation change and ice sheet paleogeography during the Quaternary Period and to explore future changes for planet Earth. Field trip is mandatory.

**Prerequisites:** EEES 3100 with a minimum grade of C-**Term Offered:** Spring**EEES 4220 Environmental Geochemistry**

[3 credit hours]

Chemical reactions of environmental concern. Water and soil chemistry related to contaminant fate and mobility. Computer software used.

**Prerequisites:** CHEM 1230 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 4240 Soil Science**

[3 credit hours]

Basic principles of soil formation, physics, and chemistry with emphasis on their influence on fluid and chemical migration and preservation of soil quality from geological, agricultural and environmental perspectives.

**Prerequisites:** CHEM 1230 with a minimum grade of C- or CHEM 1090 with a minimum grade of C-**Term Offered:** Spring**EEES 4250 Soil Ecology**

[3 credit hours]

Underlying concepts and theory of modern soil ecology will be reviewed including the biogeochemical cycles and ecological functions of soil, and the effects of human activities. (Spring, alternate years, odd)

**Prerequisites:** EEES 3050 with a minimum grade of C- or EEES 4240 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 4260 Soil Ecology Laboratory**

[1 credit hour]

Laboratory exercises designed to complement the material covered in EEES 4250.

**Corequisites:** EEES 4250**Term Offered:** Spring, Fall**EEES 4300 Field Botany**

[3 credit hours]

Introduction to the principles and methodology of plant taxonomy with particular attention to the native plant species.

**Prerequisites:** EEES 2150 with a minimum grade of D- or BIOL 2150 with a minimum grade of D-**EEES 4330 Vertebrate Ecology And Systematics**

[4 credit hours]

Ecology, systematics and conservation of the vertebrates, with special emphasis on forms native to North America.

**Prerequisites:** EEES 2150 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 4350 Ecology and Conservation of Reptiles and Amphibians**

[3 credit hours]

The ecology, diversity, evolution, and conservation of amphibians and reptiles. Lectures will discuss natural history, trait diversity, evolutionary context, and ecological implications of amphibians and reptiles. Hands-on activities include taxonomy and identification of local species, survey and field methods, and discussions of scientific literature. Throughout this course, the biology of amphibians and reptiles will be emphasized in the context of conservation.

**Prerequisites:** EEES 3050 with a minimum grade of C-**EEES 4355 Ecology and Conservation of Reptiles and Amphibians Lab**

[1 credit hour]

Laboratory and field exercises relevant to the conservation and biology of reptiles and amphibians. This course includes field trips, data collection, and analysis of data and samples. Field trips will focus on standard methods of catching, handling, and marking reptiles and amphibians, along with field techniques relevant to studying the ecology and conservation of reptiles and amphibians.

**Corequisites:** EEES 4350**EEES 4410 Hydrogeology**

[3 credit hours]

Fundamentals of groundwater/earth interactions are introduced concentrating on physical aspects of groundwater flow with applications to the field of water resources and contaminant investigations.

This course is designed as the fundamental course in groundwater for students who plan to use hydrogeology in their careers, e.g., environmental geologists, civil and environmental engineers, environmental specialists and scientists, and petroleum geologists.

**Prerequisites:** MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 2450 with a minimum grade of C-**Term Offered:** Spring**EEES 4450 Hazardous Waste Management**

[3 credit hours]

Environmental regulations concerning hazardous waste, characteristics of hazardous waste and disposal technologies, toxicology, characteristics of organic chemicals and heavy metals, biodegradation, soil science, groundwater contamination, risk assessment, site investigation.

**Prerequisites:** CHEM 1230 with a minimum grade of D-**Term Offered:** Fall**EEES 4480 GIS Applications in Environmental Science**

[3 credit hours]

An applications course focused on using GIS techniques and applications in environmental problems and research.

**Prerequisites:** EEES 2500 with a minimum grade of C- and EEES 2100 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 4490 Remote Sensing of The Environment**

[4 credit hours]

Introduction to theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition.

**Prerequisites:** GEPL 2010 with a minimum grade of C- or EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-**Term Offered:** Fall



**EEES 4510 Environmental Microbiology**

[3 credit hours]

The diversity of microbial life and activities, the functioning of microbial ecosystems in energy and carbon flow and remediation of polluted environments, and the detection and control of pathogens.

**Prerequisites:** (EEES 2150 with a minimum grade of C- and CHEM 1230 with a minimum grade of C-)

**Term Offered:** Fall

**EEES 4520 Bioremediation**

[3 credit hours]

The environmental fate and transport of contaminants; their transformation and biodegradation by plants and microorganisms; bioremediation strategies, including solid phase, slurry phase, and vapor-phase treatments, and natural attenuation.

**Prerequisites:** (EEES 2150 with a minimum grade of C- and CHEM 1230 with a minimum grade of C-)

**EEES 4540 Microbial Ecology**

[3 credit hours]

Students will learn the underlying processes that drive microbial population structure and function in the environment and become familiar with classical and current methodology used in microbial community analysis.

**Prerequisites:** EEES 2150 with a minimum grade of C- or BIOL 2170 with a minimum grade of C-

**Term Offered:** Fall

**EEES 4550 Methods Of Microbial Investigation**

[3 credit hours]

Student will learn the classical and current methodologies (biochemical and molecular) used in microbial community analysis while developing an understanding of experimental design sample handling and data analysis.

**Prerequisites:** EEES 4540 with a minimum grade of C-

**EEES 4610 Geophysics**

[3 credit hours]

Survey of theory, field applications, interpretation principles of solid earth and exploration geophysics. Two hours lecture, three hours methods laboratory.

**Prerequisites:** (EEES 1010 with a minimum grade of C- or EEES 2010 with a minimum grade of C-) and (MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 2450 with a minimum grade of C-)

**Term Offered:** Spring, Fall

**EEES 4630 Numerical Methods In Geophysics**

[3 credit hours]

Numerical filters and matrix operations used to process potential field data and wave forms, isolating anomalies and signals of interest; derivative maps, upward and downward continuation; current interpretation software. Term project.

**Prerequisites:** EEES 4610 with a minimum grade of C-

**Term Offered:** Spring

**EEES 4650 Geology Field Course**

[1-4 credit hours]

Intensive field studies in various areas of geologic interest. Studies may involve various geologic field methods and descriptive techniques. Course may be repeated multiple times. Fall and Spring.

**Prerequisites:** EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-

**EEES 4730 Aquatic Ecology**

[3 credit hours]

The biology of populations, communities and ecosystems with emphasis on aquatic environments. Includes the application of principles and theory from aquatic ecology to help understand and solve management problems in aquatic systems.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Fall

**EEES 4740 Aquatic Ecology Laboratory**

[1 credit hour]

Laboratory exercises on the biology of aquatic populations, communities and ecosystems.

**Corequisites:** EEES 4730

**Term Offered:** Fall

**EEES 4750 Conservation Biology**

[3 credit hours]

The application of principles of ecology, biogeography, genetics, economics, philosophy and other disciplines to the study and maintenance of biological diversity in temperate, subtropical and tropical systems.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4755 Conservation Biology Lab**

[1 credit hour]

Laboratory and field exercises relevant to the conservation biology of populations, communities and ecosystems. This course includes field trips, sample analyses and computer-based approaches to biodiversity inventories and reserve design.

**Prerequisites:** EEES 4750 (may be taken concurrently) with a minimum grade of C-

**EEES 4760 Landscape Ecology**

[3 credit hours]

A general introduction to the theory and practice of landscape ecology, including landscape-analysis, pattern-process relationship, and potential management applications at multiple spatial and temporal scales.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4790 Ecology Field Trip**

[2-4 credit hours]

Field study of globally significant ecosystem(s), including analysis of structural and functional relationship within and between ecosystems. Opportunities for individual student projects. Prerequisite: EEES 3050 or equivalent.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Summer

**EEES 4910 Directed Research**

[1-5 credit hours]

Research under guidance of faculty member. An acceptable thesis is required for credit toward major.

**Term Offered:** Spring, Summer, Fall

**EEES 4920 Senior Geology Seminar**

[2 credit hours]

Survey of geology at a senior level using readings, class discussions and some lectures. The final exam will be one of the assessment vehicles of the department.

**Term Offered:** Spring

**EEES 4940 Internship**

[1-4 credit hours]

Student gains up to 4 credits for relevant professional experience with an adviser-approved organization. Student must enroll during the term service is performed.

**Term Offered:** Spring, Summer, Fall

**EEES 4960 Senior Seminar**

[1 credit hour]

The intent of the course is to provide senior students with an opportunity to identify relevant positions, create appropriate resumes/CVs and cover letters, and develop necessary interview skills as they plan for their professional careers. Prerequisite: senior standing in ENST, ENSC, GEOL, or BIOL, requiring permission of instructor.

**Term Offered:** Fall

**EEES 4970 Senior Environmental Capstone**

[3 credit hours]

A project-based capstone course focused on integration, synthesis and applications of course work students have taken in their program of study. Departmental majors with different academic backgrounds work in small teams to complete a practical, interdisciplinary project for a client culminating in a scope of work, team-presentation and project report. Clients might include a conservation organization, governmental agency, private industry, school, or other.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4980 Special Topics: Advanced Undergraduate**

[1-4 credit hours]

An advanced undergraduate course covering some aspect of the environmental sciences not covered in the formal upper- division undergraduate curriculum. Students may repeat the course for different topics.

**Term Offered:** Spring, Summer, Fall

**EEES 4990 Independent Study: Advanced Undergraduate**

[1-4 credit hours]

Student selects an appropriate approved subject for individualized study and prepares a report or gives equivalent evidence of mastery of the selected subject.

**Term Offered:** Spring, Summer, Fall

## Departmental Honors

Qualified sophomores, juniors and seniors working on degree programs within the department of environmental sciences may be invited to work for one of the following citations, consistent with their degree

program: "honors in biology," "honors in environmental sciences," "honors in environmental studies" or "honors in geology."

1. **Admission:** The departmental Honors Program is open to all department majors and may be taken concurrently with College Honors. Admission to the departmental Honors Program is based on academic achievement. Normally, students invited to participate will have achieved a 3.3 or better overall GPA by the end of the sophomore year.
2. **Requirements:** A student must satisfactorily complete from three to six credits of EEES 4910 and graduate with a minimum overall GPA of 3.3 in order to receive the honors citation. Candidates must prepare a written thesis based on their research and present an oral report at an open forum. Candidates also will provide two unbound copies of the approved thesis to the department for binding, one each for the research Adviser and department. This program provides an opportunity for the exceptional student to work closely with a faculty Adviser on an independent research topic. This research experience often leads to publication and is an excellent preparation for graduate studies.

## BA in Environmental Studies

### For the Bachelor of Arts degree in Environmental Studies (ENST)

following courses are required:

EEES 1020	Introductory Geology Laboratory
EEES 2010	Introduction To Environmental Studies
EEES 2100	Fundamentals Of Geology
EEES 2150	Biodiversity
EEES 2160	Biodiversity Laboratory
EEES 2500	Computer Applications In Environmental Sciences
EEES 3050	General Ecology
EEES 3100	Surficial Processes
EEES 3900	Literature And Communications In The Environmental Sciences
EEES 4940	Internship
EEES 4970	Senior Environmental Capstone

The following related courses are also required:

MATH 2640	Statistics for Applied Science
CHEM 1090	Elementary Chemistry or CHEM 1100
PSC 4340	Environmental Policy <sup>1</sup>
ECON 3240	Environmental Economics <sup>1</sup> or ECON 3270 Natural Resource Economics
GEPL 3900	Environmental Planning <sup>1</sup>
PHIL 3180	Environmental Ethics <sup>1</sup>

<sup>1</sup> Prerequisites will be waived for environmental studies majors enrolling in these last four courses.

All environmental studies students also will select an area of concentration which includes at least 21 hours of course work in the concentration. Students choosing a concentration in economics must also complete either MATH 1320 and MATH 1330, or MATH 1340, or MATH 1750 and MATH 1760. Students also are required to complete a 100-hr environment-related internship (EEES 4940) in an agency, corporation, university laboratory or other approved location.

With the exception of EEES 4940 students may not take any courses required in the major as P/NC.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
ENGL 1110	College Composition I	3
CHEM 1090	Elementary Chemistry	3
EEES 2010	Introduction To Environmental Studies	3
Elementary Foreign Language I		4
Hours		15
<b>Second Term</b>		
EEES 2100	Fundamentals Of Geology	4
EEES 1020	Introductory Geology Laboratory	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Elementary Foreign Language II		4
Arts/Humanities Core		3
Hours		15
<b>Third Term</b>		
EEES 3100	Surficial Processes	3
GEPL 3900	Environmental Planning	3
EEES 2500	Computer Applications In Environmental Sciences	1
Arts/Humanities Core		3
College or Core Science Elective		3
Arts/Humanities Core (Fine Arts)		3
Hours		16
<b>Fourth Term</b>		
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1
MATH 2600 or MATH 2640	Introduction To Statistics or Statistics for Applied Science	3
Social Sciences Core		3
Arts/Humanities Core (History)		3
Hours		14
<b>Fifth Term</b>		
EEES 3050	General Ecology	3
PHIL 3180	Environmental Ethics	3
PSC 4340	Environmental Policy	3
Concentration Course		3
Concentration Course		3
Hours		15
<b>Sixth Term</b>		
Diversity of US <sup>1</sup>		3
Concentration Course		3
Concentration Course		3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3

Non-US Diversity <sup>1</sup>		3
Hours		15
Seventh Term		
EEES 4940	Internship	3
Writing Across the Curriculum (WAC)		3
Concentration Course		3
Concentration Course		3
Concentration Course		3
Hours		15
Eighth Term		
EEES 3900	Literature And Communications In The Environmental Sciences	3
ECON 3240	Environmental Economics	3
EEES 4970	Senior Environmental Capstone	3
Electives		3
Social Science Core		3
Hours		15
Total Hours		120

<sup>1</sup> One of the diversity courses should also be a social science core.

## BS in Biology with a Concentration in Ecology and Organismal Biology

The Bachelor of Science degree in biology with a concentration in ecology and organismal biology (BIOM) requires the following courses:

EEES 2150	Biodiversity
EEES 2160	Biodiversity Laboratory
EEES 3050	General Ecology
EEES 3060	General Ecology Laboratory
EEES 3900	Literature And Communications In The Environmental Sciences
EEES 4150	Evolution

Twelve additional hours of advanced elective EEES courses (3000 - 4000 level), including three advanced laboratory courses.

BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance
BIOL 3010	Molecular Genetics
BIOL 3030	Cell Biology

CHEM 1230	General Chemistry I
CHEM 1240	General Chemistry II
CHEM 1280	General Chemistry Lab I
CHEM 1290	General Chemistry Lab II
CHEM 2410	Organic Chemistry I
CHEM 2420	Organic Chemistry II
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors

MATH 2640 Statistics for Applied Science  
Calculus I and II: (MATH 1750 & MATH 1760, or MATH 1830 & MATH 1840, or MATH 1850 & MATH 1860)

Two semesters of general physics either algebra or calculus based:  
(PHYS 2070 & PHYS 2080, or PHYS 2130 & PHYS 2140)

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
ENGL 1110	College Composition I	3
Social Science Core		3
Arts/Humanities Core		3
Hours		16
<b>Second Term</b>		
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
Social Science Core		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Hours		16
<b>Third Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
MATH 1750	Calculus For The Life Sciences With	4
or MATH 1850	Applications I	
	or Single Variable Calculus I	
Arts/Humanities Core		3
Hours		15
<b>Fourth Term</b>		
MATH 1760	Calculus For The Life Sciences With	3
or MATH 1860	Applications II	
	or Single Variable Calculus II	
CHEM 2420	Organic Chemistry II	3
BIOL 3010	Molecular Genetics	3
EEES 3900	Literature And Communications In The Environmental Sciences	3
Electives		3
Hours		15
<b>Fifth Term</b>		
EEES 3050	General Ecology	3
EEES 3060	General Ecology Laboratory	1
BIOL 3030	Cell Biology	3
US Diversity		3
Elective- WAC		3
Hours		13

### Sixth Term

MATH 2640	Statistics for Applied Science	3
Electives -Major <sup>1</sup>		6
EEES Advanced Lab <sup>2</sup>		1
Electives		6
Hours		16

### Seventh Term

PHYS 2070	General Physics I	5
Non-US Diversity		3
Electives- Major <sup>1</sup>		6
EEES Advanced Lab <sup>2</sup>		1
Hours		15

### Eighth Term

PHYS 2080	General Physics II	5
EEES 4150	Evolution	3
EEES Advanced Lab <sup>2</sup>		1
Electives		5-6
Hours		14-15
Total Hours		120-121

<sup>1</sup> Choose from any upper level EEES course (4000 level) for which prerequisites are met.

<sup>2</sup> Appropriate lab courses to be chosen with consent of BIOM advisor (Dr. Sigler).

## BS in Environmental Sciences

For the Bachelor of Science degree in Environmental Sciences (ENSC)  
The following courses must be included:

EEES 1020	Introductory Geology Laboratory
EEES 2020	Introduction to the Environment: Energy and Climate
EEES 2030	Introduction to the Environment: Land-use and Water
EEES 2100	Fundamentals Of Geology
EEES 2150	Biodiversity
EEES 2160	Biodiversity Laboratory
EEES 2500	Computer Applications In Environmental Sciences
EEES 2510	Advanced Computer Applications

One of the following:

EEES 2760	Field Methods
EEES 2600	Analytical Methods
EEES 3050	General Ecology
EEES 3060	General Ecology Lab

One advanced EEES laboratory course

One of the following:

EEES 3100	Surficial Processes
EEES 4240	Soil Science
EEES 3900	Literature And Communications In The Environmental Sciences
EEES 4940	Internship
EEES 4970	Environmental Capstone
EEES 4960	Senior Seminar

The following related courses are also required:

MATH 2640	Statistics for Applied Science
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Calculus I and II: (MATH 1750 and MATH 1760, or MATH 1850 and MATH 1860)

CHEM 1230 General Chemistry I

CHEM 1280 General Chemistry Lab I

CHEM 1240 General Chemistry II

CHEM 1290 General Chemistry Lab II

Four of following courses, including at least 1 in each of the social sciences and humanities groups:

Social Science group:

GEPL 3900 Environmental Planning

PSC 4340 Environmental Policy

ECON 3240 Environmental Economics

ECON 3270 Natural Resource Economics

Humanities group

REL 2980 Religion and Environment

PHIL 3180 Environmental Ethics

PJS 2500 Peace Education

Prerequisites will be waived for environmental sciences majors enrolling in these last four courses.

All environmental sciences students also will select an area of concentration which includes at least 18 hours of course work in the concentration, which may include the advanced lab. Students also are required to complete a 100-hr environment-related internship (EEES 4940 for 1 credit hour) in an agency, corporation, university laboratory or other approved location.

With the exception of EEES 4940, students may not take any courses required in the major as P/NC.

Below is a sample plan of study (for the biology concentration<sup>1</sup>). Consult your advisor and the degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
EEES 2020	Introduction to the Environment: Energy and Climate	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
ENGL 1110	College Composition I	3
Arts/Humanities Core		3
Hours		16
<b>Second Term</b>		
EEES 2030	Introduction to the Environment Land-Use and Water	3
EEES 2100	Fundamentals Of Geology	4
EEES 1020	Introductory Geology Laboratory	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
Social Science Core		3
Hours		16
<b>Third Term</b>		
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1

Select one of the following		4
MATH 1750	Calculus For The Life Sciences With Applications I	
MATH 1850	Single Variable Calculus I	
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
EEES 2500	Computer Applications In Environmental Sciences	1
EEES 2760 or EEES 3100	Field Methods Lab or Surficial Processes	3
Hours		16

#### Fourth Term

EEES 2600 or EEES 4240	Techniques for Environmental Sciences or Soil Science	3
EEES 2510	Advanced Computer Applications	2
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance <sup>1</sup>	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance <sup>1</sup>	1

Select one of the following		3-4
MATH 1760	Calculus For The Life Sciences With Applications II	
MATH 1860	Single Variable Calculus II	
Hours		13-14

#### Fifth Term

EEES 3050	General Ecology	3
EEES 3060	General Ecology Laboratory	1
MATH 2640	Statistics for Applied Science	3
PHIL 3180	Environmental Ethics	3
Social Science Core		3
Non-US Diversity		3
Hours		16

#### Sixth Term

EEES 3900	Literature And Communications In The Environmental Sciences	3
GEPL 3900	Environmental Planning	3
US Diversity Core		3
Elective		3
ENSC Concentration Electives <sup>1</sup>		3
Hours		15

#### Seventh Term

EEES 4940	Internship <sup>2</sup>	1
EEES 4970	Senior Environmental Capstone	3
PSC 4340	Environmental Policy	3
ENSC Concentration with lab <sup>1</sup>		4
Arts/Humanities Core		3
Hours		14

#### Eighth Term

ECON 3240	Environmental Economics	3
ENSC Concentration Electives <sup>1</sup>		6
EEES 4960	Senior Seminar	1



Elective	4
Hours	14
Total Hours	120-121

<sup>1</sup> Concentrations are 18 hours.

<sup>2</sup> Internship is required. Take for 1 hour.

## BS in Geology

The Bachelor of Science degree in geology requires a minimum of 45-46 hours in the major, including the following:

EEES 1020	Introductory Geology Laboratory
EEES 2100	Fundamentals Of Geology
EEES 2230	Earth History: Historical Geology and Paleontology (WAC)
EEES 2500	Computer Applications In Environmental Sciences
EEES 3210	Mineralogy and Petrology
EEES 3220	Sedimentary Petrology and Stratigraphy
EEES 3310	Field Methods: Structural Geology and Mapping
EEES 3900	Literature and communication in the Environmental Sciences (WAC)
EEES 4650	Geology Field Course
EEES 4920	Senior Geology Seminar

Select an additional 6 courses from the following three groups with at least 2 from each group:

### Group A

EEES 2400	Oceanography And Water Resources
EEES 3100	Surficial Processes
EEES 4100	Glacial Geology
EEES 4240	Soil Science
EEES 4200	Quaternary Geology

### Group B

EEES 4150	Evolution
EEES 4220	Environmental Geochemistry
EEES 4410	Hydrogeology
EEES 4450	Hazardous Waste Management
EEES 4490	Remote Sensing of The Environment
EEES 4610	Geophysics

### Group C

EEES 2010	Introduction to the Environment: Energy and Climate
EEES 2030	Introduction to the Environment: Land-use and Water
EEES 2200	Climate Change
EEES 2510	Advanced Computer Applications
EEES 4480	GIS Applications in Environmental Science
ECON 3240	Environmental Economics
PSC 4340	Environmental Policy

NOTE: Students may request credit for EEES 4980 Special Topics to qualify as an elective. Discuss individual courses and topics with your academic advisor in the Department.

The following related courses are also required:

CHEM 1230	General Chemistry I
CHEM 1280	General Chemistry Lab I
CHEM 1240	General Chemistry II
CHEM 1290	General Chemistry Lab II
Calculus I and II: (MATH 1750 & MATH 1760, or MATH 1850 & MATH 1860, or MATH 1830 & MATH 1840)	

Two semesters of general physics either algebra or calculus based: (PHYS 2070 and PHYS 2080, or PHYS 2130 and PHYS 2140)

Students must achieve a minimum GPA of 2.5 in the major to graduate. Students may not take any required course in the major or related areas as P/NC.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
EEES 2100	Fundamentals Of Geology	4
EEES 1020	Introductory Geology Laboratory	1
EEES 2500	Computer Applications In Environmental Sciences	1
ENGL 1110	College Composition I	3
Social Sciences Core		3
Hours		14

<b>Second Term</b>		
EEES 2230	Earth History: Historical Geology and Paleontology	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
Arts/Humanities Core		3
Hours		15

<b>Third Term</b>		
EEES 3210	Mineralogy and Petrology	4
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
EEES 2500	Computer Applications In Environmental Sciences	1
Select one of the following:		4
MATH 1750	Calculus For The Life Sciences With Applications I	
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
Diversity of US		3
Hours		17

<b>Fourth Term</b>		
EEES 3220	Sedimentary Petrology and Stratigraphy	3
EEES 4650	Geology Field Course	3
EEES 3900	Literature And Communications In The Environmental Sciences (WAC)	3
Select one of the following:		3-4
MATH 1760	Calculus For The Life Sciences With Applications II	
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	

MATH 1850	Single Variable Calculus I	
Non-US Diversity		3
Hours		15-16

**Fifth Term**

PHYS 2070	General Physics I	5
EEES 3310	FIELD METHODS: STRUCTURAL GEOLOGY AND MAPPING	3
Select one geology group A elective, for example:		3
EEES 3100	Surficial Processes	
Select one geology group B elective, for example		3
EEES 4410	Hydrogeology	
Hours		14

**Sixth Term**

PHYS 2080	General Physics II	5
Select one geology group A elective, for example:		3
EEES 4100	Glacial Geology	
Social Sciences Core		3
Electives		6
Hours		17

**Seventh Term**

Select one geology group C electives, for example:		3
EEES 2200	Climate Change	
Select one geology group C elective, for example:		3
EEES 4480	GIS Applications in Environmental Science	
Electives		5
Arts/Humanities Core		3
Hours		14

**Eighth Term**

EEES 4920	Senior Geology Seminar	2
Select one geology group B elective, for example:		3
EEES 4610	Geophysics	
Electives		9
Hours		14
Total Hours		120-121

## Minor in Environmental Sciences

Students electing to minor in environmental sciences must complete at least 21 hours of course work consisting of the following:

Code	Title	Hours
EEES 2010	Introduction To Environmental Studies	3
EEES 2100	Fundamentals Of Geology	4
EEES 2150	Biodiversity	4
EEES 2400	Oceanography And Water Resources	3
Select at least six additional hours of EEES course work listed at 3000 or 4000 level		6
Select at least one, one-hour EEES laboratory course		1
Total Hours		21

A minimum GPA of 2.0 in the EEES course work is required, and the program must be approved in advance by the departmental ENSC minor advisor (Dr. Fisher).

## Minor in Geology

Students electing to minor in geology must complete the following:

Code	Title	Hours
EEES 1020	Introductory Geology Laboratory	1
EEES 2100	Fundamentals Of Geology	4
EEES 2230	Earth History: Historical Geology and Paleontology	4
EEES 2500	Computer Applications In Environmental Sciences	1
EEES 3100	Surficial Processes	3
EEES 3210	Mineralogy and Petrology	4
EEES 3220	Sedimentary Petrology and Stratigraphy	3
EEES 3310	FIELD METHODS: STRUCTURAL GEOLOGY AND MAPPING	3
Select one additional formal 3000-4000 level geology course		3
Total Hours		26

The departmental undergraduate geology advisor (Dr. Becker) must approve a program of study in advance, and a minimum GPA of 2.0 must be achieved for the course work completed in the minor.

## Department of Mathematics and Statistics

Donald B. White, Chair, Professor  
 Alessandro Arsie, Associate Chair  
 Geoffrey Martin, Graduate Admissions Director  
 Seung-Moon Hong, Undergraduate Advisor – Pure Mathematics, Applied Mathematics, Mathematics with Computer Science  
 Don White, Undergraduate Advisor - Statistics  
 Zhiwei Chen, Undergraduate Advisor - Actuarial Science  
 Qin Shao, Undergraduate Advisor - Data Science

## Degrees Offered

The Department of Mathematics and Statistics offers degree programs for a Bachelor of Arts or a Bachelor of Science in Mathematics.

## Advanced Placement

- Students with a score of 3 or better on AB calculus will receive credit for MATH 1850.
- Students with a score of 3, 4 or 5 on the BC calculus test will receive credit for both MATH 1850 and MATH 1860.
- Students with a score below 3 may be able to obtain credit by taking a departmental test.
- Students with a score of 3 or better on the Statistics Test will receive credit for MATH 2600.

## Degrees Offered

- BA in Mathematics (p. 389)
- BS in Mathematics (p. 392)
- Minor in Mathematics (p. 398)

### MATH 1010 Applied Business Mathematics

[3 credit hours]

Mathematics used in solving business problems related to simple and compound interest, annuities, payroll, taxes, promissory notes, consumer credit, insurance, markup and markdown, mortgage loans, discounting, financial statement ratios and break-even analysis. Course is not applicable toward the undergraduate Mathematics major requirements.

**Term Offered:** Fall

### MATH 1180 Reasoning With Mathematics

[3 credit hours]

Reasoning with Mathematics will prepare students for an increasingly information-based society. Students will acquire the skills necessary to make rational decisions based on real data and evaluate numerical information. They will be exposed to general methods of inquiry that apply in a wide variety of settings. They will be able to critically assess arguments and make rational decisions. Finally, students will develop the ability to judge the strengths and limitations of quantitative approaches.

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

### MATH 1190 Math Modeling Study Skills

[1 credit hour]

A course to provide the study skills needed to succeed in college mathematics. Students learn and apply skills such as reading textbooks, note-taking, and analyzing tests.

**Term Offered:** Spring, Fall

### MATH 1200 Mathematical Modeling and Problem Solving

[4 credit hours]

Mathematical modeling of data using linear, quadratic, rational, and radical functions in their numerical, symbolic, graphic, and verbal forms. Problem solving methods and strategies will be emphasized. Course is not applicable toward the undergraduate Mathematics major requirements. Math core course.

**Term Offered:** Spring, Summer, Fall

Core Mathematics

### MATH 1210 Mathematics For Education Majors I

[3 credit hours]

Principles of elementary number theory, base systems, foundations of arithmetic operations, fractions, decimals and problem solving techniques. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1180 with a minimum grade of C- or MATH 1200 with a minimum grade of C- or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or ACT Math with a score of 20 or Math - Coll Algebra Placement with a score of 10 or Math - Elem Algebra Placement with a score of 12 or SAT Mathematics with a score of 480 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Fall

Core Mathematics

### MATH 1220 Mathematics For Education Majors II

[3 credit hours]

Development of integers, rational numbers and real numbers; probability, statistics, informal geometry, geometric figures and measurements. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1210 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

### MATH 1320 College Algebra

[3 credit hours]

Number system; elementary theory of equations and inequalities; functions and relations; exponentials and logarithms; systems of equations and topics in analytic geometry. Course is not applicable toward the undergraduate Mathematics major requirements. No credit given for students who have credit for MATH 1340.

**Prerequisites:** MATH 1200 with a minimum grade of C- or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or Math - Coll Algebra Placement with a score of 10 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

### MATH 1330 Trigonometry

[3 credit hours]

Definitions and graphs of trigonometric functions and their inverses, solving trigonometric equations, applications and topics in analytic geometry. Course is not applicable toward the undergraduate Mathematics major requirements. No credit given for students who have credit for MATH 1340.

**Prerequisites:** MATH 1320 with a minimum grade of C- or ACT Math with a score of 22 or SAT Mathematics with a score of 520 or Aleks Math Placement Test with a score of 61 or Aleks Math Placement Retest with a score of 61 or Math - Coll Algebra Placement with a score of 15 or MATH SECTION SCORE with a score of 550

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

### MATH 1340 College Algebra And Trigonometry

[0-5 credit hours]

Functions and graphs, exponential and logarithmic functions, trigonometric functions and applications, systems of equations and topics in analytic geometry. No credit for students who have credit for MATH 1320 or 1330.

**Prerequisites:** ACT Math with a score of 24 or SAT Mathematics with a score of 560 or Aleks Math Placement Test with a score of 68 or Aleks Math Placement Retest with a score of 68 or (Math - Coll Algebra Placement with a score of 12 and Math - Trigonometry Placement with a score of 9) or MATH SECTION SCORE with a score of 580

**Term Offered:** Spring, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1730 Calculus with Applications to Business and Finance**

[0-5 credit hours]

An introduction to differential and integral calculus. Topics include limits, derivatives, maxima/minima, indefinite and definite integrals with an emphasis on business applications and technology use.

**Prerequisites:** MATH 1320 with a minimum grade of C- or MATH 1340 with a minimum grade of C- or Math - Coll Algebra Placement with a score of 15 or ACT Math with a score of 24 or SAT Mathematics with a score of 560 or Aleks Math Placement Test with a score of 68 or Aleks Math Placement Retest with a score of 68 or MATH SECTION SCORE with a score of 580

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1750 Calculus For The Life Sciences With Applications I**

[0-4 credit hours]

Definitions of trigonometric functions, solving trigonometric equations, functions, limits and derivatives, exponential and logarithmic functions, and applications. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1320 with a minimum grade of C- or MATH 1340 with a minimum grade of C- or Math - Coll Algebra Placement with a score of 15 or ACT Math with a score of 24 or SAT Mathematics with a score of 560 or Aleks Math Placement Test with a score of 68 or Aleks Math Placement Retest with a score of 68 or MATH SECTION SCORE with a score of 580

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1760 Calculus For The Life Sciences With Applications II**

[0-3 credit hours]

Indefinite and definite integrals, probability, vectors, least squares, differential equations. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1750 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1830 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1830 Calculus I For Mathematicians, Scientists And Educators**

[4 credit hours]

Limits, differentiation, Fundamental Theorem of Calculus, Mean Value Theorem, curve sketching, maxima/minima, definite and indefinite integrals, applications. The emphasis is on the rigorous aspects and foundational ideas of calculus. Of interest to students requiring a conceptual understanding of calculus. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** (MATH 1340 with a minimum grade of C- or Aleks Math Placement Test with a score of 76 or Aleks Math Placement Retest with a score of 76) or (MATH 1320 with a minimum grade of C- or ACT Math with a score of 27 or SAT Mathematics with a score of 610 or MATH SECTION SCORE with a score of 630 or Math - Coll Algebra Placement with a score of 15) and (MATH 1330 with a minimum grade of C- or Math - Trigonometry Placement with a score of 12)

**Term Offered:** Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1840 Calculus II For Mathematicians, Scientists And Educators**

[4 credit hours]

Applications and techniques of integration, polar coordinates and calculus of plane curves, infinite series and Taylor series, vectors and geometry of space. The emphasis is on the rigorous aspects and foundational ideas of calculus. Of interest to students requiring a conceptual understanding of calculus.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1920 with a minimum grade of C-

**Term Offered:** Spring, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1850 Single Variable Calculus I**

[0-4 credit hours]

Limits, differentiation, Fundamental Theorem of Calculus, curve sketching, maxima/minima, definite and indefinite integrals, applications. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** (MATH 1340 with a minimum grade of C- or Aleks Math Placement Test with a score of 76 or Aleks Math Placement Retest with a score of 76) or (MATH 1320 with a minimum grade of C- or ACT Math with a score of 27 or SAT Mathematics with a score of 610 or MATH SECTION SCORE with a score of 630 or Math - Coll Algebra Placement with a score of 15) and (MATH 1330 with a minimum grade of C- or Math - Trigonometry Placement with a score of 12)

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1860 Single Variable Calculus II**

[0-4 credit hours]

Applications and techniques of integration, polar coordinates and calculus of plane curves, infinite series and Taylor series, vectors and geometry of space.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1890 Elementary Linear Algebra**

[3 credit hours]

Matrix algebra, systems of linear equations, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, applications, additional topics chosen from Google's page rank algorithm, Digital Image Compression, and others.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Spring, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1980 Topics In Mathematics**

[1-4 credit hours]

Selected topics in mathematics.

**Term Offered:** Fall

**MATH 2190 Foundations of Mathematics**

[3 credit hours]

This course lays the logical and set-theoretic foundations for upper level mathematics courses. Topics include: logical connectives, quantifiers; techniques of proof; set operations; functions; equivalence classes; partitions, cardinality, natural numbers, rationals, real numbers.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C-

**Term Offered:** Spring

**MATH 2450 Calculus For Engineering Technology I**

[0-4 credit hours]

Differential calculus of algebraic and trigonometric functions, including limits, curve sketching, motion, maxima/minima, related rates, integral calculus of algebraic functions.

**Prerequisites:** (MATH 1340 with a minimum grade of C- or Aleks Math Placement Test with a score of 76 or Aleks Math Placement Retest with a score of 76) or (MATH 1320 with a minimum grade of C- or ACT Math with a score of 27 or SAT Mathematics with a score of 610 or MATH SECTION SCORE with a score of 630 or Math - Coll Algebra Placement with a score of 15) and (MATH 1330 with a minimum grade of C- or Math - Trigonometry Placement with a score of 12)

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 2460 Calculus For Engineering Technology II**

[0-4 credit hours]

Transcendental functions, methods of integration, applications of the integral, polar coordinates, vectors and vector operation, lines and planes, parametric equations.

**Prerequisites:** MATH 2450 with a minimum grade of C- or MATH 1850 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 2600 Introduction To Statistics**

[3 credit hours]

An introduction to descriptive and inferential statistical methods including point and interval estimation, hypothesis testing and regression. No credit allowed if taken after MATH 3610 or 4680; credit not allowed for both MATH 2600 and 2630. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1200 with a minimum grade of C- or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or Math - Coll Algebra Placement with a score of 10 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 2620 Discrete Probability**

[3 credit hours]

Sample spaces, events, counting techniques, probability distributions and their applications. No credit if taken after 4680. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1180 with a minimum grade of C- or MATH 1200 with a minimum grade of C- or Math - Coll Algebra Placement with a score of 10 or Math - Elem Algebra Placement with a score of 12 or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring

**MATH 2640 Statistics for Applied Science**

[3 credit hours]

Introduction to statistical methods. Modeling relationships between variables. Basic concepts in probability. Introduction to design of experiments, surveys and observational studies. Overview of statistical procedures used in applied science literature.

**Prerequisites:** MATH 1200 with a minimum grade of C- or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or Math - Coll Algebra Placement with a score of 10 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Fall

**MATH 2850 Elementary Multivariable Calculus**

[4 credit hours]

Geometry of functions of several variables, partial differentiation, multiple integrals, vector algebra and calculus (including Theorems of Green, Gauss and Stokes), and applications.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**MATH 2860 Elementary Differential Equations**

[3 credit hours]

An introduction to the analysis and solution of ordinary differential equations with emphasis on the fundamental techniques for solving linear differential equations.

**Prerequisites:** MATH 2850 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**MATH 2890 Numerical Methods And Linear Algebra**

[3 credit hours]

Topics include: matrices, characteristic roots, solution of linear and nonlinear equations, curve fitting, integration, differentiation and numerical solution of ordinary differential equations. MATLAB is introduced and used to analyze problems. Additional topics are chosen from Google's page rank algorithm, Digital Image Compression, and others.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1920 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall



**MATH 3000 Symbolic Logic**

[3 credit hours]

A study of propositional and predicate logic, the symbolic techniques used to evaluate deductive arguments. Topics may include computability, set theory, Bayesianism and other formal systems with mathematical or philosophical relevance.

**Prerequisites:** MATH 1180 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 3190 Introduction To Mathematical Analysis**

[3 credit hours]

This course is intended to introduce students to mathematical analysis. The focus will be on learning to write clear, rigorous proofs. Topics include set theory and logic, the real number system and its topology, sequences, limits and continuity.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3200 Number Theory**

[3 credit hours]

Divisibility, congruences, diophantine equations, numerical functions, quadratic reciprocity.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 3320 Introduction To Abstract Algebra**

[3 credit hours]

Sets and mappings, integers, groups, rings and applications.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Spring

**MATH 3440 Fundamentals Of Modern Geometry I**

[3 credit hours]

Euclidean geometry from a modern viewpoint, constructions and transformations. Primarily for students in secondary education.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3450 Fundamentals Of Modern Geometry II**

[3 credit hours]

Euclidean geometry from a modern viewpoint, constructions and transformations. Primarily for students in secondary education.

**Prerequisites:** MATH 3440 with a minimum grade of C-

**Term Offered:** Spring

**MATH 3510 History Of Mathematics**

[3 credit hours]

Contributions to the development of mathematics by various groups and individuals from the earliest history to the present, with special emphasis on the elementary branches: arithmetic, algebra, geometry and calculus.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3610 Statistical Methods I**

[3 credit hours]

Basic probability, sampling, descriptive statistics, statistical inference, regression, correlation, analysis of variance, goodness of fit, model formulation and testing.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3620 Statistical Methods II**

[3 credit hours]

Multiple regression, analysis of covariance, standard experimental designs, contingency tables, nonparametric methods and methods for sample surveys.

**Prerequisites:** MATH 3610 with a minimum grade of C-

**Term Offered:** Spring

**MATH 3920 Junior Readings**

[1-3 credit hours]

Selected subjects in mathematics of special interest to students and the professor.

**Term Offered:** Spring, Summer, Fall

**MATH 4300 Linear Algebra I**

[3 credit hours]

Theory of vector spaces and linear transformations, including such topics as matrices, determinants, inner products, eigenvalues and eigenvectors, and rational and Jordan canonical forms.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4310 Linear Algebra II**

[3 credit hours]

Hermitian and normal operators, multilinear forms, spectral theorem and other topics.

**Prerequisites:** MATH 4300 with a minimum grade of C-

**MATH 4330 Abstract Algebra I**

[3 credit hours]

Arithmetic of the integers, unique factorization and modular arithmetic; group theory including normal subgroups, factor groups, cyclic groups, permutations, homomorphisms, the isomorphism theorems, abelian groups and p-groups.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4340 Abstract Algebra II**

[3 credit hours]

Ring theory including integral domains, field of quotients, homomorphisms, ideals, Euclidean domains, polynomial rings, vector spaces, roots of polynomials and field extensions.

**Prerequisites:** MATH 4330 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4350 Applied Linear Algebra**

[3 credit hours]

Matrices, systems of equations, vector spaces, linear transformations, determinants, eigenvalues and eigenvectors, singular value decomposition, pseudoinverses, rank, numerical methods and applications to various areas, e.g., the Google Matrix or Digital Image Compression or others.

**Prerequisites:** MATH 1890 with a minimum grade of C- or MATH 2890 with a minimum grade of C-

**Term Offered:** Spring, Summer

**MATH 4380 Discrete Structures And Analysis Of Algorithms**

[3 credit hours]

Discrete mathematical structures for applications in computer science such as graph theory, combinatorics, and groups theory, asymptotics, recurrence relations and analysis of algorithms.

**Prerequisites:** MATH 3320 with a minimum grade of C- or MATH 4330 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4450 Introduction To Topology I**

[3 credit hours]

Metric spaces, topological spaces, continuous maps, bases and subbases, closure and interior operators, products, subspaces, sums, quotients, separation axioms, compactness and local compactness.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4460 Introduction To Topology II**

[3 credit hours]

Connectedness and local connectedness, convergence, metrization, function spaces. The fundamental groups and its properties, covering spaces, classical applications, e.g. Jordan Curve Theorem, Fundamental Theorem of Algebra, Brouwer's Fixed Point Theorem.

**Prerequisites:** (MATH 4450 with a minimum grade of C- and MATH 3320 with a minimum grade of C-) or (MATH 4450 with a minimum grade of C- and MATH 4330 with a minimum grade of C-)

**Term Offered:** Spring

**MATH 4540 Classical Differential Geometry I**

[3 credit hours]

Smooth curves in Euclidean space including the Frenet formulae. Immersed surfaces with the Gauss map, principal curvatures and the fundamental forms. Special surfaces including ruled surfaces and minimal surfaces. Intrinsic Geometry including the Gauss Theorem Egregium.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**MATH 4550 Classical Differential Geometry II**

[3 credit hours]

Tensors, vector fields, and the Cartan approach to surface theory, Bonnet's Theorem and the construction of surfaces via solutions of the Gauss Equation. Geodesics parallel transport, and Jacobi Fields. Theorems of a global nature such as Hilbert's Theorem or the Theorem of Hopf-Rinow.

**Prerequisites:** MATH 4540 with a minimum grade of C-

**MATH 4600 Advanced Statistical Methods I**

[3 credit hours]

Basics of descriptive statistics, study designs and statistical inference.

Properties of, and assumptions required for, inference for means, variances, and proportions from one and two-sample paired and unpaired studies. Introduction to ANOVA with multiple comparisons. Model assessment and diagnostics. Statistical software will be employed.

Opportunities to apply procedures to real data. Emphasis placed on the foundations to approaches in introductory statistics.

**Prerequisites:** MATH 2600 with a minimum grade of D- or MATH 2640 with a minimum grade of D- or MATH 3610 with a minimum grade of D- or MATH 4690 with a minimum grade of D-

**Term Offered:** Fall

**MATH 4610 Applications Of Statistics II**

[3 credit hours]

Continuation of Applications of Statistics I.

**Prerequisites:** MATH 4600 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4620 Theory Of Interest**

[3 credit hours]

This course covers the measurement of interest, certain annuities, yield rates, amortization and sinking funds, bonds and other securities and application of interest theory.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 4640 Statistical Computing**

[3 credit hours]

Modern statistical computing, including programming tools, modern programming methodologies, design of data structures and algorithms, numerical computing and graphics. Additional topics selected from simulation studies, rejection sampling, importance sampling, Monte Carlo integration, and bootstrapping.

**Prerequisites:** MATH 3610 with a minimum grade of C- or MATH 4600 with a minimum grade of C- or MATH 4690 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4680 Introduction To Theory Of Probability**

[3 credit hours]

Probability spaces, random variables, probability distributions, moments and moment generating functions, limit theorems, transformations and sampling distributions.

**Prerequisites:** MATH 2850 with a minimum grade of C-

**Term Offered:** Summer, Fall

**MATH 4690 Introduction To Mathematical Statistics**

[3 credit hours]

Sampling distributions, point and interval estimation, hypothesis testing, regression and analysis of variance.

**Prerequisites:** MATH 4680 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4710 Methods Of Numerical Analysis I**

[3 credit hours]

Floating point arithmetic; polynomial interpolation; numerical solution of nonlinear equations; Newton's method. Likely topics include: numerical differentiation and integration; solving systems of linear equations; Gaussian elimination; LU decomposition; Gauss-Seidel method.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 4720 Methods Of Numerical Analysis II**

[3 credit hours]

Likely topics include: Computation of eigenvalues and eigenvectors; solving systems of nonlinear equations; least squares approximations; rational approximations; cubic splines; fast Fourier transforms; numerical solutions to initial value problems; ordinary and partial differential equations.

**Prerequisites:** MATH 4710 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4740 Advanced Applied Mathematics I**

[3 credit hours]

Series and numerical solutions to ordinary differential equations, special functions, orthogonal functions, Sturm-Liouville problems, self-adjointness, vector analysis.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4750 Advanced Applied Mathematics II**

[3 credit hours]

Continuation of vector analysis, introduction to complex analysis, partial differential equations, Fourier series and integrals.

**Prerequisites:** MATH 4740 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4760 Actuarial Mathematics I**

[3 credit hours]

Survival distributions and life tables, life insurance, life annuities, benefit premiums and reserves and multiple life functions are some topics covered in this course.

**Prerequisites:** MATH 4680 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4770 Actuarial Mathematics II**

[3 credit hours]

Continuation of Actuarial Mathematics I. Multiple decrement models, collective risk models and applications of risk theory.

**Prerequisites:** MATH 4760 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4780 Advanced Calculus**

[3 credit hours]

Extrema for functions of one or more variables, Lagrange multipliers, indeterminate forms, inverse and implicit function theorems, uniform convergences, power series, transformations, Jacobians, multiple integrals.

**Prerequisites:** MATH 2850 with a minimum grade of C-

**MATH 4800 Ordinary Differential Equations**

[3 credit hours]

Modern theory of differential equations; transforms and matrix methods; existence theorems and series solutions; and other selected topics.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 4810 Partial Differential Equations**

[3 credit hours]

First and second order equations; numerical methods; separation of variables; solutions of heat and wave equations using eigenfunction techniques; and other selected topics.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4820 Introduction To Real Analysis I**

[3 credit hours]

The real number system; continuity and differentiability of functions; convergence of sequences and series; applications.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4830 Introduction To Real Analysis II**

[3 credit hours]

Riemann Integral; limits of functions; elementary metric space theory including compactness, connectedness and completeness. Optional topics include differentiable functions on  $\mathbb{R}^n$ ; the Implicit and Inverse Function Theorems.

**Prerequisites:** MATH 4820 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4860 Calculus Of Variations And Optimal Control I**

[3 credit hours]

Conditions for an extrema (Euler's equations, Erdman corner conditions, conditions of Legendre, Jacobi, and Weierstrass, fields of extremals, Hilbert's invariant integral); Raleigh-Ritz method; isoperimetric problems; Lagrange, Mayer-Bolza problems. Recommended: MATH 4820.

**Prerequisites:** MATH 1890 with a minimum grade of C- or MATH 2890 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4870 Calculus Of Variations And Optimal Control II**

[3 credit hours]

Pontryagin's maximum principle; necessary and sufficient conditions for optimal control, controllability, time optimal control, existence of optimal controls, relationship to the calculus of variations.

**Prerequisites:** MATH 4860 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4880 Complex Variables**

[3 credit hours]

Analytic functions; Cauchy's theorem; Taylor and Laurent series; residues; contour integrals; conformal mappings, analytic continuation and applications.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4900 Senior Seminar**

[1-3 credit hours]

Seminar on a topic not usually covered in a course. Library research and paper to be expected.

**Term Offered:** Spring, Summer, Fall

**MATH 4920 Senior Readings**

[1-3 credit hours]

Selected subjects in mathematics of special interest to students and the professor. (By arrangement with professor and student.)

**Term Offered:** Spring, Summer, Fall

**MATH 4940 Internship in the Mathematical Sciences**

[3 credit hours]

MATH 4940 Co-Op Experience [3 credit hours] Approved internship experience. Course may be repeated for credit with departmental permission. Terms Offered: Spring, Summer, Fall

**Term Offered:** Spring, Summer, Fall

**MATH 4960 Actuarial Science Problem Seminar**

[1-3 credit hours]

The primary activity will be student solution and presentation of problems of a type given on actuarial exams.

**Term Offered:** Spring, Fall

## Honors in Mathematics

1. **Admission:** Students are normally admitted to departmental honors after completing honors sections of:

Code	Title	Hours
MATH 1850	Single Variable Calculus I	4
MATH 1860	Single Variable Calculus II	4
MATH 2850	Elementary Multivariable Calculus	4
MATH 2860	Elementary Differential Equations	3
Total Hours		15

Students may also be admitted to the program at the discretion of the Math Majors Committee and should consult the departmental undergraduate advisor.

2. **Requirements:** Graduation with honors in mathematics depends upon doing a substantial amount of work in mathematics beyond the requirements of the bachelor's degree. To graduate with departmental honors in mathematics a student must ordinarily maintain a GPA in mathematics greater than 3.5 and write an expository paper on a topic in mathematics that demonstrates knowledge of the subject matter significantly beyond the expectations of the student's course work. The research and writing of the paper is conducted under the supervision of a faculty member with an interest in the subject, and as a part of fulfilling this requirement the student must enroll in either the junior or senior reading class, MATH 3920 or MATH 4920, that counts as an elective in the major. The actual details of the student's program are determined by consulting with the Department's honors advisor and the student's topic supervisor.

## BA in Mathematics

**For the Bachelor of Arts degree in mathematics**, a minimum of 35 credits of MATH courses, including those in a specific BA concentration must be completed. In addition, 24 hours of course work in a specific related area must be included.

The following courses are required:

MATH 1840 Calculus II For Mathematicians, Scientists And Educators or MATH 1860 Single Variable Calculus II

MATH 1890 Elementary Linear Algebra or MATH 2890 Numerical Methods And Linear Algebra

MATH 2850 Elementary Multivariable Calculus

MATH 2190 Foundations of Mathematics or MATH 3190 Introduction To Mathematical Analysis

One of the following concentrations must be completed:

Pure Mathematics Concentration

MATH 2860 Elementary Differential Equations

MATH 4330 Abstract Algebra I

MATH 4820 Introduction To Real Analysis I

MATH 4880 Complex Variables

Select two of the following

MATH 4300 Linear Algebra I

MATH 4450 Introduction To Topology I

MATH 4540 Classical Differential Geometry I

MATH 4830 Introduction To Real Analysis II

MATH 4340 Abstract Algebra II

One advanced MATH elective course for 3 credits 3000 or 4000 level approved by the advisor

Applied Mathematics Concentration

MATH 3320 Introduction To Abstract Algebra or MATH 4330 Abstract Algebra I

MATH 2860 Elementary Differential Equations

MATH 4300 Linear Algebra I or MATH 4350 Applied Linear Algebra

MATH 4820 Introduction To Real Analysis I or MATH 4880 Complex Variables

Select one of the following two-semester sequences:

MATH 4710 Methods Of Numerical Analysis I & MATH 4720 Methods Of Numerical Analysis II

MATH 4740 Advanced Applied Mathematics I & MATH 4750 Advanced Applied Mathematics II

One advanced MATH elective course for 3 credits 3000 or 4000 level approved by the advisor

Statistics Concentration

MATH 3610 Statistical Methods I

MATH 3620 Statistical Methods II

MATH 4350 Applied Linear Algebra

MATH 4600 Advanced Statistical Methods I

MATH 4610 Applications Of Statistics II

MATH 4680 Introduction To Theory Of Probability

MATH 4690 Introduction To Mathematical Statistics

## Related Courses in Bachelor of Arts

The 18 semester hours of related area course (at 2000 to 4000 levels) should be chosen according to the interests of the student in view of his or her anticipated career in mathematics. The B.A. degree is awarded to those students who choose a related area in the humanities or social sciences, such as economics, foreign language, philosophy and psychology, or education.

Choices include courses numbered 2000 to 4990 for the following departments: AMST, ARTH, COMM, DST, FILM, GEPL, GLST, HIST, HON, LST, PHIL, PSC, PSY, REL, SOC, THR, WGST; or courses numbered 3000 to 4990 for the following departments: CLC, ENGL, FREN, GERM, HUM, JAPN, LAT, LING, SPAN; plus AFST 2100 to 4990, ANTH 2100 to 4990, ART 1080 to 4990, ECON 1150, 1200, 2000 to 4000, FLAN 3440, 2260, 2270, 2280, 2410, 2420, 2610, 2620, 3000 to 4000, excluding MUS 3010, 3020, 3030, 3040, 3050, 3090, 3130, 3140, 3150, 3160, 3170, 3180, 3190, 3800, 4800.

## Bachelor of Art In Mathematics: Concentration: Pure Mathematics

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830 or MATH 1850	Calculus I For Mathematicians, Scientists And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Natural Science Core Laboratory		1
Social Sciences Core		3
Hours		16
<b>Second Term</b>		
MATH 1840 or MATH 1860	Calculus II For Mathematicians, Scientists And Educators or Single Variable Calculus II	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Social Sciences Core		3
Diversity of US		3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
MATH 3190 or MATH 2190	Introduction To Mathematical Analysis or Foundations of Mathematics	3
Non-US Diversity		3
Arts/Humanities Core		3
NSM Science Elective		3
Hours		16
<b>Fourth Term</b>		
MATH 3320	Introduction To Abstract Algebra <sup>1</sup>	3
MATH 2860	Elementary Differential Equations	3
NSM Science Elective		3
Arts/Humanities Core		3
Related Field		3
Hours		15
<b>Fifth Term</b>		
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3
MATH 4330	Abstract Algebra I	3
Elementary Foreign Language I		4
Arts/Humanities Core (History)		3
Related Elective		3
Hours		16

### Sixth Term

MATH 4880	Complex Variables	3
Advanced Math Elective		3
Elementary Foreign Language II		4
Related Elective		3
Writing Across the Curriculum (WAC)		3
Hours		16

### Seventh Term

MATH 4820	Introduction To Real Analysis I	3
Select one of the following:		3
MATH 4450	Introduction To Topology I	
MATH 4300	Linear Algebra I	
MATH 4540	Classical Differential Geometry I	
Advanced Math Elective		3
Arts/Humanities Core (Fine Arts)		3
Related Elective		3
Hours		15

### Eighth Term

ENGL 2710-2800	Arts/Humanities (English Lit)	2
MATH 4340 or MATH 4830	Abstract Algebra II or Introduction To Real Analysis II	3
Related Elective		3
Related Elective		3
Social Science Core		3
Hours		14
Total Hours		124

<sup>1</sup> Recommended 3000/4000 elective

## Bachelor of Art in Mathematics: Concentration: Applied Mathematics

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830 or MATH 1850	Calculus I For Mathematicians, Scientists And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Natural Science Core Laboratory		1
Social Sciences Core		3
Hours		16
<b>Second Term</b>		
MATH 1840 or MATH 1860	Calculus II For Mathematicians, Scientists And Educators or Single Variable Calculus II	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3



Natural Sciences Core	3
Social Sciences Core	3
Diversity of US	3
Hours	16

**Third Term**

MATH 2850	Elementary Multivariable Calculus	4
MATH 3190	Introduction To Mathematical Analysis or MATH 2190 or Foundations of Mathematics	3
Non-US Diversity		3
Arts/Humanities Core		3
NSM Science Elective		3
Hours		16

**Fourth Term**

MATH 3320	Introduction To Abstract Algebra <sup>1</sup>	3
MATH 2860	Elementary Differential Equations	3
NSM Science Elective		3
Arts/Humanities Core		3
Related Field		3
Hours		15

**Fifth Term**

MATH 1890	Elementary Linear Algebra or MATH 2890 or Numerical Methods And Linear Algebra	3
MATH 4710	Methods Of Numerical Analysis I or MATH 4740 or Advanced Applied Mathematics I	3
Elementary Foreign Language I		4
Arts/Humanities Core (History)		3
Related Elective		3
Hours		16

**Sixth Term**

MATH 4720	Methods Of Numerical Analysis II or MATH 4750 or Advanced Applied Mathematics II	3
MATH 4880	Complex Variables <sup>2</sup>	3
Elementary Foreign Language II		4
Related Elective		3
Writing Across the Curriculum (WAC)		3
Hours		16

**Seventh Term**

Advanced Math Elective		3
Arts/Humanities Core (Fine Arts)		3
Social Sciences Core		3
Related Elective		6
Hours		15

**Eighth Term**

MATH 4350	Applied Linear Algebra <sup>3</sup>	3
ENGL 2710-2800 Arts/Humanities (English Lit)		2
Advanced Math Elective		3
Related Elective		3

Related Elective	3
Hours	14
Total Hours	124

<sup>1</sup> May take MATH 4330 instead in fall semester.

<sup>2</sup> May take MATH 4820 instead in fall semester

<sup>3</sup> May take MATH 4300 instead in fall semester

## Bachelor of Art in Mathematics: Concentration: Statistics

Below is a sample program of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830	Calculus I For Mathematicians, Scientists or MATH 1850 And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Natural Sciences Core Laboratory		1
Social Sciences Core		3
Hours		16

**Second Term**

MATH 1840	Calculus II For Mathematicians, Scientists or MATH 1860 And Educators or Single Variable Calculus II	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1890	Elementary Linear Algebra	3
Natural Sciences Core		3
Social Sciences Core		3
Hours		16

**Third Term**

MATH 2850	Elementary Multivariable Calculus	4
MATH 3190	Introduction To Mathematical Analysis or MATH 2190 or Foundations of Mathematics	3
Non-US Diversity		3
Arts/Humanities Core		3
NSM Science Elective		3
Hours		16

**Fourth Term**

MATH 1890	Elementary Linear Algebra or MATH 2890 or Numerical Methods And Linear Algebra	3
MATH 2860	Elementary Differential Equations	3
NSM Science Elective		3
Arts/Humanities Core		3
Related Field		3
Hours		15

**Fifth Term**

MATH 3610	Statistical Methods I	3
MATH 4680	Introduction To Theory Of Probability	3
Elementary Foreign Language I		4
Arts/Humanities Core (History)		3
Related Elective		3
Hours		16

**Sixth Term**

MATH 3620	Statistical Methods II	3
MATH 4690	Introduction To Mathematical Statistics	3
Elementary Foreign Language II		4
Writing Across the Curriculum (WAC)		3
Related Elective		3
Hours		16

**Seventh Term**

MATH 4600	Advanced Statistical Methods I	3
Advanced Math Elective		3
Art/Humanities Core (Fine Arts)		3
Social Sciences Core		3
Related Elective		3
Hours		15

**Eighth Term**

MATH 4350	Applied Linear Algebra	3
MATH 4610	Applications Of Statistics II	3
ENGL 2710-2800 Arts/Humanities Core (English Lit)		3
Related Elective		2
Diversity of US		3
Hours		14
Total Hours		124

## BS in Mathematics

For the Bachelor of Science degree in mathematics, a minimum of 38 credits of MATH courses, including those in a specific BS concentration must be completed. In addition 26 hours of course work in a specific related area must be included.

The following courses must be included:

MATH 1840 Calculus II For Mathematicians, Scientists And Educators or  
MATH 1860 Single Variable Calculus II  
MATH 1890 Elementary Linear Algebra or MATH 2890 Numerical  
Methods And Linear Algebra  
MATH 2850 Elementary Multivariable Calculus  
MATH 2190 Foundations of Mathematics or MATH 3190 Introduction To  
Mathematical Analysis

One of the following concentrations must be completed:

Pure Mathematics Concentration  
MATH 2860 Elementary Differential Equations  
MATH 4330 Abstract Algebra I  
MATH 4820 Introduction To Real Analysis I  
MATH 4880 Complex Variables  
Select one of the following:

MATH 4300 Linear Algebra I  
MATH 4450 Introduction To Topology I  
MATH 4540 Classical Differential Geometry I

Select one of the following:

MATH 4830 Introduction To Real Analysis II  
MATH 4340 Abstract Algebra II

Two advanced MATH courses for 6 credits at the 3000 or 4000 level approved by the advisor

Applied Mathematics Concentration

MATH 3320 Introduction To Abstract Algebra or MATH 4330 Abstract Algebra I

MATH 2860 Elementary Differential Equations

MATH 4300 Linear Algebra I or MATH 4350 Applied Linear Algebra

MATH 4820 Introduction To Real Analysis I or MATH 4880 Complex Variables

Select one of the following two-semester sequences:

MATH 4710 Methods Of Numerical Analysis I & MATH 4720 Methods Of Numerical Analysis II

MATH 4740 Advanced Applied Mathematics I & MATH 4750 Advanced Applied Mathematics II

Select one of the following:

MATH 3610 Statistical Methods I  
MATH 4680 Introduction To Theory Of Probability  
MATH 4800 Ordinary Differential Equations  
MATH 4810 Partial Differential Equations  
MATH 4860 Calculus Of Variations And Optimal Control I

One advanced MATH elective course for 3 credits at the 3000 or 4000 level approved by the advisor.

Statistics Concentration

MATH 3610 Statistical Methods I

MATH 3620 Statistical Methods II

MATH 4350 Applied Linear Algebra

MATH 4600 Advanced Statistical Methods I

MATH 4610 Applications Of Statistics II

MATH 4680 Introduction To Theory Of Probability

MATH 4690 Introduction To Mathematical Statistics

One advanced MATH elective course for 3 credits at the 3000 or 4000 level approved by the advisor.

Mathematics with Computer Science Concentration

MATH 2860 Elementary Differential Equations

MATH 4380 Discrete Structures And Analysis Of Algorithms

MATH 4710 Methods Of Numerical Analysis I

MATH 3320 Introduction To Abstract Algebra or MATH 4330 Abstract Algebra I

MATH 4820 Introduction To Real Analysis I or MATH 4880 Complex Variables

Select one of the following:

MATH 4350 Applied Linear Algebra

MATH 4720 Methods Of Numerical Analysis II

Two advanced MATH courses for 6 credits at the 3000 or 4000 level approved by the advisor

The related area courses should include a total of 18 hours in EECS courses from EECS 1100 - EECS 4990. At least two of these courses should be from EECS 2500 or the 3000 or 4000 level as approved by the advisor.

**Actuarial Sciences Concentration**

MATH 3610 Statistical Methods I

MATH 3620 Statistical Methods II

MATH 2860 Elementary Differential Equations

MATH 4620 Theory Of Interest

MATH 4680 Introduction To Theory Of Probability

MATH 4690 Introduction To Mathematical Statistics

MATH 4760 Actuarial Mathematics I

MATH 4770 Actuarial Mathematics II

The related area courses should include the following:

ECON 1150 Principles Of Macroeconomics

ECON 1200 Principles Of Microeconomics

BUAD 1020 Micro-Computer Applications In Business

BUAD 2040 Financial Accounting Information

BUAD 2050 Accounting For Business Decision-Making

BUAD 3040 Principles Of Financial Management

FINA 3600 Risk Management

INFS 3150 Principles Of Structured Computer Programming And Problem Solving

**Data Science Concentration**

MATH 1980 Topics in Mathematics: Intro to Data Science

MATH 2860 Elementary Differential Equations

MATH 3610 Statistical Methods I

MATH 3620 Statistical Methods II

MATH 4350 Applied Linear Algebra

MATH 4600 Advanced Statistical Methods I

MATH 4610 Applications Of Statistics II

MATH 4640 Statistical Computing

MATH 4680 Introduction To Theory Of Probability

MATH 4690 Introduction To Mathematical Statistics

MATH 4940 Internship

The related area courses should include the following:

PHIL 1010 Introduction to Logic

EECS 1510 Object Oriented Programming

EECS 2500 Linear Data Structures

EECS 2510 Nonlinear Data Structures

EECS 2520 Discrete Structures

EECS 4560 Database Structure

EECS 4590 Algorithms

EECS 4740 Artificial Intelligence

EECS 4750 Machine Learning

**Related Courses in Bachelor of Science**

The 26 semester hours of related area course work should be chosen according to the interests of the student in view of his or her anticipated career in mathematics. These courses could be in Accounting, Astronomy, Biology, Chemistry, Economics, Environmental Science, Engineering, Finance, Operations Analysis, Philosophy, Physics, Pharmacy and Pharmaceutical Sciences, Medicine and Life Sciences.

Choices include courses numbered 2000 to 4990 for the following departments: ACCT, ASTR, BUAD, BIOE, CHEE, CHEM, CIVE, EBUS, EEES, FINA, GEOL, IBUS, IE, INBT, INBY, ISOM, ME, MIME, MGMT, MKTG, NASC, PHYS, PSLS, and TE; plus BIOL 2150 to 2180, 3000 to 4000; ECON 1150, 1200, 2000 to 4990; EECS 1100 to 4990.

**Bachelor of Science in Mathematics: Concentration: Pure Mathematics**

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830 or MATH 1850	Calculus I For Mathematicians, Scientists And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Natural Science Core Laboratory		1
Social Sciences Core		3
Hours		16
<b>Second Term</b>		
MATH 1840 or MATH 1860	Calculus II For Mathematicians, Scientists And Educators or Single Variable Calculus II	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core		3
Social Sciences Core		3
Diversity of US		3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
MATH 3190 or MATH 2190	Introduction To Mathematical Analysis or Foundations of Mathematics	3
Non-US Diversity		3
Arts/Humanities Core		3
NSM Science Elective		3
Hours		16
<b>Fourth Term</b>		
MATH 3320	Introduction To Abstract Algebra <sup>1</sup>	3
MATH 2860	Elementary Differential Equations	3
NSM Science Elective		3
Arts/Humanities Core		3
Related Field		3
Hours		15
<b>Fifth Term</b>		
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3
MATH 4330	Abstract Algebra I	3
Elementary Foreign Language I		4
Elective		3
Related Elective		3
Hours		16

**Sixth Term**

MATH 4880	Complex Variables	3
MATH 4340	Abstract Algebra II	3
or MATH 4830	or Introduction To Real Analysis II	
Related Electives		6
Writing Across the Curriculum (WAC)		3
Hours		15

**Seventh Term**

MATH 4820	Introduction To Real Analysis I	3
Select one of the following:		3
MATH 4450	Introduction To Topology I	
MATH 4300	Linear Algebra I	
MATH 4540	Classical Differential Geometry I	
Advanced Math Elective		3
Related Electives		6
Hours		15

**Eighth Term**

Elective		3
Advanced Math Elective		3
Related Electives		9
Hours		15
Total Hours		124

<sup>1</sup> Recommended 3000/4000 elective

## Bachelor of Science in Mathematics: Concentration: Applied Mathematics

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830	Calculus I For Mathematicians, Scientists	4
or MATH 1850	And Educators	
	or Single Variable Calculus I	
ENGL 1110	College Composition I	3
Natural Sciences Core		3
Natural Sciences Laboratory		1
Social Sciences Core		3
Hours		16
<b>Second Term</b>		
MATH 1840	Calculus II For Mathematicians, Scientists	4
or MATH 1860	And Educators	
	or Single Variable Calculus II	
ENGL 1130	College Composition II: Academic	3
	Disciplines And Discourse	
Natural Sciences Core		3
Social Sciences Core		3
Diversity of US		3
Hours		16

**Third Term**

MATH 2850	Elementary Multivariable Calculus	4
MATH 3190	Introduction To Mathematical Analysis	3
or MATH 2190	or Foundations of Mathematics	
Non-US Diversity		3
Arts/Humanities Core		3
NSM Science Elective		3
Hours		16

**Fourth Term**

MATH 3320	Introduction To Abstract Algebra <sup>1</sup>	3
MATH 2860	Elementary Differential Equations	3
NSM Science Elective		3
Arts/Humanities Core		3
Related Field or Elective		3
Hours		15

**Fifth Term**

MATH 1890	Elementary Linear Algebra	3
or MATH 2890	or Numerical Methods And Linear Algebra	
MATH 4710	Methods Of Numerical Analysis I	3
or MATH 4740	or Advanced Applied Mathematics I	
NSM Science Elective		4
Related Field or Elective		3
Related Field or Elective		3
Hours		16

**Sixth Term**

MATH 4720	Methods Of Numerical Analysis II	3
or MATH 4750	or Advanced Applied Mathematics II	
MATH 4880	Complex Variables	3
or MATH 4820	or Introduction To Real Analysis I	
Related Field or Elective		3
Related Field or Elective		3
Writing Across the Curriculum (WAC)		3
Hours		15

**Seventh Term**

MATH 4820	Introduction To Real Analysis I	3
Select one of the following:		3
MATH 3610	Statistical Methods I	
MATH 4680	Introduction To Theory Of Probability	
MATH 4800	Ordinary Differential Equations	
MATH 4810	Partial Differential Equations	
MATH 4860	Calculus Of Variations And Optimal Control I	
Related Field or Elective		3
Related Field or Elective		3
Related Field or Elective		3
Hours		15

**Eighth Term**

MATH 4350	Applied Linear Algebra	3
or MATH 4300	or Linear Algebra I	

Math Elective 3000-4000 Level	3
Related Field or Elective	3
Related Field or Elective	3
Related Field or Elective	3
Hours	15
Total Hours	124

<sup>1</sup> May take MATH 4330 instead in fall semester.

## Bachelor of Science in Mathematics: Concentration: Computer Science

Below is a sample program of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830 or MATH 1850	Calculus I For Mathematicians, Scientists And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
Natural Science Core		3
Natural Science Core Laboratory		1
Social Science Core		3
Hours		16
<b>Second Term</b>		
MATH 1840 or MATH 1860	Calculus II For Mathematicians, Scientists And Educators or Single Variable Calculus II	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Natural Science Core		3
Social Science Core		3
Diversity of US		3
Hours		16
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
MATH 3190 or MATH 2190	Introduction To Mathematical Analysis or Foundations of Mathematics	3
Non-US Diversity		3
Arts/Humanities Core		3
NSM Science Elective		3
Hours		16
<b>Fourth Term</b>		
MATH 2860	Elementary Differential Equations	3
MATH 3320 or MATH 4330	Introduction To Abstract Algebra or Abstract Algebra I	3
NSM Science Elective		3
Arts/Humanities Core		3
EECS elective		3
Hours		15

<b>Fifth Term</b>		
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3
MATH 4710	Methods Of Numerical Analysis I	3
NSM Science Elective		4
EECS elective		3
Related Field or Elective		3
Hours		16

<b>Sixth Term</b>		
Select one of the following:		3
MATH 4720	Methods Of Numerical Analysis II	
MATH 4350	Applied Linear Algebra	
MATH 4880 or MATH 4820	Complex Variables or Introduction To Real Analysis I	3
EECS elective		3
Related Field or Elective		3
Writing Across the Curriculum (WAC)		3
Hours		15

<b>Seventh Term</b>		
MATH 4380	Discrete Structures And Analysis Of Algorithms	3
EECS 2500	Linear Data Structures (or EECS 3000- 4000 level)	3
Math Elective 3000-4000 Level		3
EECS elective		3
Related Field or Elective		3
Hours		15

<b>Eighth Term</b>		
Math Elective 3000-4000 Level		3
EECS 2500	Linear Data Structures (or EECS 3000-4000 level course)	3
Related Field or Elective		3
Related Field or Elective		3
Related Field or Elective		3
Hours		15
Total Hours		124

## Bachelor of Science in Mathematics: Concentration: Statistics

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830 or MATH 1850	Calculus I For Mathematicians, Scientists And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
Natural Sciences Core		3



Natural Sciences Laboratory	1
Social Science Core	3
Hours	16
<b>Second Term</b>	
MATH 1840 Calculus II For Mathematicians, Scientists or MATH 1860 And Educators or Single Variable Calculus II	4
ENGL 1130 College Composition II: Academic Disciplines And Discourse	3
Natural Sciences Core	3
Social Science Core	3
Diversity of US	3
Hours	16
<b>Third Term</b>	
MATH 2850 Elementary Multivariable Calculus	4
MATH 3190 Introduction To Mathematical Analysis or MATH 2190 or Foundations of Mathematics	3
Non-US Diversity	3
Arts/Humanities Core	3
NSM Science Elective	3
Hours	16
<b>Fourth Term</b>	
MATH 1890 Elementary Linear Algebra or MATH 2890 or Numerical Methods And Linear Algebra	3
NSM Science Elective	3
Arts/Humanities Core	3
Related Field or Elective	3
Related Field or Elective	3
Hours	15
<b>Fifth Term</b>	
MATH 3610 Statistical Methods I	3
MATH 4680 Introduction To Theory Of Probability	3
NSM Science Elective	4
Related Field or Elective	3
Related Field or Elective	3
Hours	16
<b>Sixth Term</b>	
MATH 3620 Statistical Methods II	3
MATH 4690 Introduction To Mathematical Statistics	3
Related Field or Elective	3
Related Field or Elective	3
Writing Across the Curriculum (WAC)	3
Hours	15
<b>Seventh Term</b>	
MATH 4600 Advanced Statistical Methods I	3
Math Elective 3000-4000 Level	3
Related Field or Elective	3
Related Field or Elective	3

Related Field or Elective	3
Hours	15

**Eighth Term**

MATH 4350 Applied Linear Algebra	3
MATH 4610 Applications Of Statistics II	3
Related Field or Elective	3
Related Field or Elective	3
Related Field or Elective	3
Hours	15
Total Hours	124

## Bachelor of Science in Mathematics: Concentration: Actuarial Science

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1840	Calculus II For Mathematicians, Scientists or MATH 1860 And Educators <sup>1</sup> or Single Variable Calculus II	4
ENGL 1110	College Composition I	3
ECON 1150	Principles Of Macroeconomics	3
Natural Sciences Core		3
Natural Science Core Laboratory		1
Elective		4
Hours		20
<b>Second Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
MATH 1890	Elementary Linear Algebra or MATH 2890 or Numerical Methods And Linear Algebra	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
ECON 1200	Principles Of Microeconomics	3
BUAD 1020	Micro-Computer Applications In Business	3
Hours		16
<b>Third Term</b>		
MATH 4680	Introduction To Theory Of Probability	3
MATH 3190	Introduction To Mathematical Analysis or MATH 2190 or Foundations of Mathematics	3
BUAD 2040	Financial Accounting Information	3
NSM Science Elective		3
Arts/Humanities Core		3
Hours		15
<b>Fourth Term</b>		
MATH 4690	Introduction To Mathematical Statistics	3
MATH 4620	Theory Of Interest (For actuarial FM exam)	3
Arts/Humanities Core		3

Elective	3
Related Field or Elective	3
Hours	15
<b>Fifth Term</b>	
MATH 3610 Statistical Methods I	3
MATH 2860 Elementary Differential Equations	3
BUAD 2050 Accounting For Business Decision-Making	3
Social Science Core	3
NSM Science Elective	4
Hours	16
<b>Sixth Term</b>	
MATH 3620 Statistical Methods II	3
BUAD 3040 Principles Of Financial Management	3
Writing Across the Curriculum (WAC)	3
Diversity of US	3
Elective	3
Hours	15
<b>Seventh Term</b>	
MATH 4760 Actuarial Mathematics I	3
FINA 3600 Risk Management	3
Non-US Diversity	3
Related Field or Elective	3
Elective	3
Hours	15
<b>Eighth Term</b>	
MATH 4770 Actuarial Mathematics II	3
INFS 3150 Principles Of Structured Computer Programming And Problem Solving	3
Related Field or Elective	3
Elective	3
Hours	12
Total Hours	124

<sup>1</sup> Actuarial Science students need to start in Calculus II or may take MATH 2850 in the summer.

## Bachelor of Science in Mathematics: Concentration: Data Science

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
MATH 1830 or MATH 1850	Calculus I For Mathematicians, Scientists And Educators or Single Variable Calculus I	4
ENGL 1110	College Composition I	3
PHIL 1010	Introduction To Logic	3
Natural Sciences Core		4

Natural Science Core Laboratory	1
Hours	17

### Second Term

MATH 1840 or MATH 1860	Calculus II For Mathematicians, Scientists And Educators or Single Variable Calculus II	4
MATH 1980	Topics In Mathematics (Intro to Data Science)	1
EECS 1510	Introduction To Object Oriented Programming	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3

Diversity of US	3
Hours	14

### Third Term

MATH 1890	Elementary Linear Algebra	3
MATH 2850	Elementary Multivariable Calculus	4
MATH 3610	Statistical Methods I	3
EECS 2500	Linear Data Structures	3
Non-US Diversity		3
	Hours	16

### Fourth Term

MATH 2190	Foundations of Mathematics	3
MATH 2860	Elementary Differential Equations	3
MATH 3620	Statistical Methods II	3
EECS 2510	Non-Linear Data Structures	3
EECS 2520	Discrete Structures	3
Hours		15

### Fifth Term

MATH 4680	Introduction To Theory Of Probability	3
MATH 4640	Statistical Computing	3
EECS 4560	Database Management Systems	3
NSM Science Elective		4
Arts/Humanities Core		3
Hours		16

### Sixth Term

MATH 4350	Applied Linear Algebra	3
MATH 4690	Introduction To Mathematical Statistics	3
Social Science Core		3
NSM Science Elective		4
Arts/Humanities Core		3
Hours		16

### Seventh Term

MATH 4600	Advanced Statistical Methods I	3
EECS 4750	Machine Learning	3
EECS 4590	Algorithms	3
EECS 4740	Artificial Intelligence	3
Social Science Core		3
Hours		15

**Eighth Term**

MATH 4610	Applications Of Statistics II	3
EECS Elective		3
MATH 4940	Internship in the Mathematical Sciences	3
Elective		3
Elective (WAC)		3
Hours		15
Total Hours		124

<sup>1</sup> Recommended 3000/4000 elective

## Minor in Mathematics

To obtain a minor in mathematics, a minimum of 22 hours in mathematics must be completed. The 22 hours must include:

Code	Title	Hours
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
or MATH 1860	Single Variable Calculus II	
MATH 1890	Elementary Linear Algebra	3
or MATH 2890	Numerical Methods And Linear Algebra	
MATH 2850	Elementary Multivariable Calculus	4
Select one of the following:		3
MATH 3610	Statistical Methods I	
MATH 2860	Elementary Differential Equations	
MATH 4680	Introduction To Theory Of Probability	
Select remaining hours in courses that are acceptable toward a major in mathematics and must be approved by an advisor in the Department of Mathematics		8
Total Hours		22

## Department of Physics and Astronomy

Sanjay V. Khare, Chair  
 Rupali Chandar, Associate Chair  
 Scott A. Lee, Undergraduate and Honors Adviser, both Physics and Astronomy  
 Song Cheng, Graduate Program Director  
 Sanjay V. Khare, Coordinator, Minor in Renewable Energy

## Degrees Offered

The Department of Physics and Astronomy offers courses of study leading to the Bachelor of Science degree in physics, the Bachelor of Arts in physics and the Bachelor of Arts in astronomy.

## Advanced Placement

- Students with a score of 3, 4 or 5 on the Physics B test will receive credit for PHYS 2070 and PHYS 2080.
- Students with a score of 3, 4 or 5 on the Physics C Mechanics test will receive credit for PHYS 2130;

- Students with a score of 3, 4 or 5 on the Physics C Electricity and Magnetism test will receive credit for PHYS 2140.

## Degrees Offered

- BA in Astronomy (p. 402)
- BA in Physics (p. 404)
- BS in Physics (p. 405)
- Minor in Astrophysics (p. 409)
- Minor in Physics (p. 409)
- Minor in Renewable Energy (p. 409)

### ASTR 1010 Survey Of Astronomy

[3 credit hours]

Not for major credit; not open to science majors; no credit after 2010, 2020. General astronomy, including appearance of the sky and nature and evolution of the Earth, Moon, solar system, stars, galaxies and the Universe.

**Term Offered:** Spring, Summer, Fall  
 Core Natural Sciences, Trans Mod Natural Science

### ASTR 2010 Solar System Astronomy

[3 credit hours]

A quantitative introduction to the contents, origin and evolution of the solar system, as revealed by recent advances in space exploration. High school mathematics at the level of graphs, algebra and elementary logarithms is required.

**Prerequisites:** ACT Math with a score of 20 or MATH SECTION SCORE with a score of 510 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or MATH 1200 with a minimum grade of D- or MATH 1320 with a minimum grade of D- or MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D- or MATH 1750 with a minimum grade of D- or MATH 1850 with a minimum grade of D-

**Term Offered:** Fall  
 Core Natural Sciences, Trans Mod Natural Science

### ASTR 2020 Stars, Galaxies, And The Universe

[3 credit hours]

A quantitative introduction to the nature and evolution of stars, galaxies and the universe, as revealed by observation and physical theory. High school mathematics at the level of graphs, algebra and elementary logarithms is required.

**Term Offered:** Spring  
 Core Natural Sciences, Trans Mod Natural Science

### ASTR 2050 Elementary Astronomy Laboratory

[1 credit hour]

Laboratory exercises and observational measurements in elementary astronomy. Two hours laboratory per week. (not for major credit)

**Term Offered:** Spring, Fall  
 Core Natural Sciences, Trans Mod Natural Science

**ASTR 2310 Mars**

[3 credit hours]

The history of observations of Mars, information gathered during the space program, potential for human exploration and colonization and related contemporary science fiction. High school algebra and graphs will be used.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2010 with a minimum grade of D-

**ASTR 2320 Life In The Universe**

[3 credit hours]

The astronomical factors involved in the emergence of life in the universe, the search for extraterrestrial intelligence and the likelihood of advanced civilizations in the Galaxy. May be offered as writing intensive.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or (ASTR 2010 with a minimum grade of D- and ASTR 2020 with a minimum grade of D-)

**Term Offered:** Fall

**ASTR 2330 Black Holes, General Relativity And The Big Bang Theory**

[3 credit hours]

Descriptive discussion of the theory of general relativity, the final states of stellar evolution, black holes and history of the universe from the big bang through the formation of the solar system. May be offered as writing intensive.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2020 with a minimum grade of D-

**Term Offered:** Fall

**ASTR 2340 New Frontiers In Astronomy**

[3 credit hours]

Descriptive treatment of recent developments in astronomy from spacecraft, such as the Hubble Space Telescope, or from the newest, very large ground based telescopes. May be offered as a writing intensive.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2010 with a minimum grade of D- or ASTR 2020 with a minimum grade of D-

**Term Offered:** Spring

**ASTR 3880 Foundations of Astronomy**

[4 credit hours]

Positional Astronomy and Time; Telescopes and Optics; Detection and Characterization of Light (Imaging, Photometry and Spectroscopy); Data Reduction and Measurements; Fundamental Techniques of Astronomy (Parallax, Magnitudes, Interstellar Extinction, Doppler Shift and Spectral Line Widths, Stellar Classification, Color-Magnitude and Color-Color Diagrams, Lightcurves, and Redshifts); Measuring Properties of Stars, Star Clusters, Galaxies, and the Universe.

**Prerequisites:** ASTR 2020 with a minimum grade of D- and PHYS 3310 with a minimum grade of D- and MATH 3610 with a minimum grade of D-

**ASTR 4800 Astronomy In The Planetarium**

[3 credit hours]

Theory and practice of astronomical outreach programming. Sky and calendar, mythology, constellations, astrophysics, buying and using small telescopes, operating and maintaining planetarium projectors, sky simulation software, projects and program production.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2010 with a minimum grade of D- or ASTR 2020 with a minimum grade of D-

**ASTR 4810 Astrophysics I**

[3 credit hours]

Spherical coordinate systems, astronomical time, celestial mechanics, the solar system and planetary physics, photometry, radiative transfer, stellar spectra and classification, binary stars and stellar masses.

**Prerequisites:** ASTR 3880 with a minimum grade of D-

**Term Offered:** Fall

**ASTR 4820 Astrophysics II**

[3 credit hours]

Stellar structure and evolution, close binaries, origin of the elements, the sun, variable stars, star clusters, the interstellar medium, the Milky Way Galaxy, stellar statistics, galaxy structure and evolution, cosmology.

**Prerequisites:** ASTR 4810 with a minimum grade of D-

**Term Offered:** Spring

**ASTR 4880 Astrophysical Measurements**

[3 credit hours]

Astronomical, optical and electronic principles of operation of a modern astronomical observatory. Observing with the 1 meter telescope of Ritter Observatory, introduction to reduction, analysis and interpretation of astrophysical data. Six hours laboratory per week. May be offered as writing intensive.

**Prerequisites:** ASTR 3880 with a minimum grade of D-

**Term Offered:** Fall

**PHYS 1050 The World Of Atoms**

[3 credit hours]

The atomic structure of matter and the ideas of quantum physics. The sizes of objects from galaxies to nucleons. Molecules, solids, the wave nature of the electron, quarks and gluons.

Core Natural Sciences

**PHYS 1300 Physics In Everyday Life**

[3 credit hours]

Not for major credit. Selected subjects of current interest, with their relation to the principles and concepts of physics. Content may vary from year to year. No special science or mathematics background needed.

**Term Offered:** Fall

Core Natural Sciences

**PHYS 1310 Physics Of Music And Sound**

[3 credit hours]

Not for major credit. Physics of waves and vibration. Human sound perception. Physics principles of wind, string and percussion instruments. Analog and digital reproduction of sound.

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 1320 Jurassic Physics**

[3 credit hours]

Not for major credit. Mechanics, energy, sound and thermodynamics of dinosaurs. The physics of vision and hearing. Fluids and flight. Radioactivity. Climate and the effects of an asteroid collision with the Earth.

**Term Offered:** Spring

Core Natural Sciences

**PHYS 1330 Physics Of Light And Color**

[3 credit hours]

Not for major credit. Physics of light and human vision. Atmospheric phenomena, images, depth perception, color analysis, pigments and dyes, color perception, the physics of art, the reproduction of color, thin film interference and holography.

**Term Offered:** Spring

Core Natural Sciences, Trans Mod Natural Science

**PHYS 1340 The Nature Of Science**

[3 credit hours]

An interdisciplinary course that discusses major scientific discoveries, the role of hypothesis testing in science, the use of mathematics in science; data presentation; and moral and ethical issues that stem from science.

Core Natural Sciences

**PHYS 1750 Introduction To Physics**

[4 credit hours]

Not for major credit. High school mathematics including plane geometry, trigonometry and two years of algebra is strongly recommended.

Fundamental laws of nature pertaining to mechanics, thermodynamics, waves, electricity, magnetism, optics, atoms and particles.

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 1910 Frontiers Of Physics And Astronomy**

[3 credit hours]

An examination of our current understanding of the physical world at the conceptual level. Topics may include the ultimate structure of matter, quantum theory, relativity, astrophysics, cosmology and contemporary applications.

**Term Offered:** Fall**PHYS 2010 Technical Physics I**

[0-5 credit hours]

Topics include measurement, statics, Newton's laws, friction, work, energy, power, impulse and momentum, and simple machines. Includes integrated laboratory.

**Prerequisites:** MATH 1340 with a minimum grade of D- or MATH 1330 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2020 Technical Physics II**

[0-5 credit hours]

Topics include thermodynamics, electricity, and magnetism, electromagnetic radiation, optics, atomic and nuclear physics. Includes integrated laboratory.

**Prerequisites:** MATH 1340 with a minimum grade of D- or MATH 1330 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2070 General Physics I**

[5 credit hours]

Calculus not required. Mechanics of energy and motion, gravitation, harmonic motion, fluids, heat, entropy and the laws of thermodynamics. Four hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** (MATH 1320 with a minimum grade of D- and MATH 1330 with a minimum grade of D-) or MATH 1340 with a minimum grade of D- or MATH 1750 with a minimum grade of D- or MATH 1850 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2080 General Physics II**

[5 credit hours]

Calculus not required. Electricity and magnetism, capacitors and inductors, electromagnetic waves, optics, atomic physics, nuclear physics, and elementary particles. Four hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** PHYS 2070 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2100 Physics With Calculus**

[2 credit hours]

A bridge course for students wishing to continue in physics after taking PHYS 2070-2080. The application of calculus and elementary differential equations in various physical contexts. No credit for students who take PHYS 2130-2140.

**Prerequisites:** (PHYS 2080 with a minimum grade of D- and MATH 1860 with a minimum grade of D-) or (PHYS 2080 with a minimum grade of D- and MATH 1840 with a minimum grade of D-) or (PHYS 2080 with a minimum grade of D- and MATH 1880 with a minimum grade of D-) or (PHYS 2080 with a minimum grade of D- and MATH 1930 with a minimum grade of D-)

**Term Offered:** Spring, Fall**PHYS 2130 Physics For Science And Engineering Majors I**

[5 credit hours]

Calculus based general physics. Mechanics of motion and energy, rotation, gravitation, harmonic motion, waves, fluids and the laws of thermodynamics. Five hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** MATH 1830 (may be taken concurrently) with a minimum grade of C or MATH 1850 (may be taken concurrently) with a minimum grade of C or MATH 1920 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2140 Physics For Science And Engineering Majors II**

[5 credit hours]

Calculus based general physics. Electricity and magnetism, capacitors and inductors, electromagnetic oscillations, Maxwell's equations and electromagnetic radiation, optics, images, interference, and diffraction. Five hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** PHYS 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science



**PHYS 3150 Methods Of Theoretical Physics**

[3 credit hours]

Basic theoretical methods of physics. Topics include mechanical oscillations, wave propagation, electromagnetic fields, symm and eigenfunctions. Emphasis is on techniques that are common to many areas of physics and astrophysics.

**Prerequisites:** (MATH 1890 with a minimum grade of D- and MATH 2850 with a minimum grade of D- and PHYS 2140 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PHYS 3180 Intermediate Laboratory**

[3 credit hours]

Physical measurements laboratory related to the development of modern physics, emphasizing techniques such as electronics, computer-aided experimental control and data acquisition, and data analysis. May be offered as writing intensive.

**Prerequisites:** PHYS 2140 with a minimum grade of D- or PHYS 2100 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 3310 Modern Physics I**

[3 credit hours]

Quantum mechanics: atomic and molecular structure and spectra.

**Prerequisites:** (PHYS 2140 with a minimum grade of D- and MATH 1840 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 1860 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 1880 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 1930 with a minimum grade of D-)

**Term Offered:** Fall

**PHYS 3320 Modern Physics II**

[3 credit hours]

Quantum statistics, applications of quantum mechanics and quantum statistics in laser physics and solid state physics, nuclear physics.

**Term Offered:** Spring

**PHYS 3400 Physical Principles Of Energy Sources For Humans**

[3 credit hours]

This course will involve the study of various conventional and unconventional sources of energy for human consumption. Past, present, and future energy sources will be examined on scientifically established principles and data.

**Prerequisites:** PHYS 2140 with a minimum grade of D- or PHYS 2080 with a minimum grade of D- and CHEM 1240 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 3410 Thermal Physics**

[3 credit hours]

Statistical mechanics, kinetic theory and thermodynamics from a unified microscopic point of view, with applications to a variety of topics from different areas of physics.

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 3610 Optics And Lasers**

[3 credit hours]

Electromagnetic theory, ray and wave optics including matrix methods, polarization, interference, diffraction, basic laser physics and survey of current laser systems.

**Prerequisites:** PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Fall

**PHYS 4130 Computational Physics**

[3 credit hours]

Working knowledge of computer operations and programming required. Numerical accuracy, advanced programming, graphics and spreadsheet packages, numerical techniques for differentiation, integration, matrices, solving differential equations and eigenvalue problems.

**PHYS 4210 Theoretical Mechanics**

[3 credit hours]

Statics and dynamics of particles, work, energy, Lagrange equations of motion, small oscillations, dynamics of rigid bodies.

**Prerequisites:** (PHYS 2140 with a minimum grade of D- and MATH 1890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-)

**Term Offered:** Fall

**PHYS 4230 Electricity And Magnetism I**

[3 credit hours]

Mathematical formulation of electrostatic and magnetostatic fields, potential theory solution of boundary value problems, method of images, dielectric and magnetic materials.

**Prerequisites:** (PHYS 2140 with a minimum grade of D- and MATH 1890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-)

**Term Offered:** Fall

**PHYS 4240 Electricity And Magnetism II**

[3 credit hours]

Maxwell's field equations, production and propagation of electromagnetic waves, solution of boundary value problems with application to the laws of optics and guided waves.

**Prerequisites:** PHYS 4230 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4310 Quantum Mechanics**

[3 credit hours]

Formalism and applications of quantum mechanics: Hilbert space, time-independent and time-dependent perturbation theories, atomic and molecular structure and spectra, and scattering theory.

**Prerequisites:** (PHYS 3310 with a minimum grade of D- and MATH 2860 with a minimum grade of D- and MATH 1890 with a minimum grade of D-) or (PHYS 3320 with a minimum grade of D- and MATH 2890 with a minimum grade of D-)

**Term Offered:** Spring

**PHYS 4400 Principles and Varieties of Solar Energy**

[3 credit hours]

Types and extent of solar energy used in human society including photosynthesis, photovoltaic, solar thermal, and concentrating solar electric; scope of the necessary energy storage and long distance electricity transmission.

**Prerequisites:** CHEM 1240 with a minimum grade of D- and PHYS 2080 with a minimum grade of D- and PHYS 3400 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4430 Physics Applications in Medicine I**

[3 credit hours]

Physical concepts as applied to medicine including: mechanics, exponential growth, statistical physics, fluid transport, and electricity and magnetism. This is a companion course to PHYS 4440.

**Prerequisites:** (PHYS 2080 with a minimum grade of D- or PHYS 2140 with a minimum grade of D-) and (MATH 1760 with a minimum grade of D- or MATH 1840 with a minimum grade of D- or MATH 1860 with a minimum grade of D-)

**PHYS 4440 Physics Applications in Medicine II**

[3 credit hours]

Physical concepts as applied to medicine including: detectors, feedback and control, signal analysis, atomic physics, high energy particles, nuclear medicine, treatment and imaging devices. Prerequisite: PHYS 4430.

**Prerequisites:** PHYS 4430 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4510 Physics Of Condensed Matter**

[3 credit hours]

Crystal lattices and structures, reciprocal lattice and kinematical diffraction theory, binding in crystals, lattice dynamics and phonons, thermodynamic, electronic, and optical properties of insulators, semiconductors, metals and alloys.

**Prerequisites:** (PHYS 3310 with a minimum grade of D- and PHYS 3410 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PHYS 4580 Molecular And Condensed Matter Laboratory**

[3 credit hours]

Experiments in molecular and condensed matter physics. Measurements and analysis based on techniques such as film thickness and surface morphology, X-ray diffraction, optical absorption, four-point probe and Hall measurements. One four-hour lab and one-hour lecture per week. May be offered as writing intensive.

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**Term Offered:** Fall

**PHYS 4620 The Physics Of Lasers**

[3 credit hours]

Longitudinal and transverse coherence, stimulated emission, optical pumping, resonator structures, Q-switching, mode-locking and laser systems (gas, dye, diode, doped insulator and free electron lasers).

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**PHYS 4780 Atomic And Nuclear Physics Laboratory**

[3 credit hours]

Detectors and electronics, gamma-ray and X-ray spectroscopies, beta and alpha particle spectroscopies, nuclear magnetic resonance, grating and interferometric spectroscopy, laser applications, and solar atomic spectroscopy. One four-hour lab and one-hour lecture per week. May be offered as writing intensive.

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4910 Research Problems-Physics And Astronomy**

[1-3 credit hours]

Individual experimental or theoretical projects selected with the approval of the department.

**Term Offered:** Spring, Summer, Fall

**PHYS 4920 Senior Capstone Project**

[1 credit hour]

Required senior capstone project for all physics and astronomy majors.

The topics may involve physics/astronomy research, physics/astronomy education, research in a related field with an emphasis on physics/astronomy, internships with companies or other institutions with an emphasis on physics/astronomy. Students should register for this course in the closest spring semester prior to graduation.

**Prerequisites:** PHYS 4950 with a minimum grade of D-

**PHYS 4940 Internship in Renewable Energy**

[1-4 credit hours]

Experiential learning in an advisor-approved business, non-profit, or academic organization. Maximum of three hours may count toward minor. Credit hours 1-4; may be repeated once for credit

**Prerequisites:** PHYS 3400 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PHYS 4950 Undergraduate Professional Development Seminar**

[1 credit hour]

Selected topics on professional development as it applies to junior / senior level physics or astronomy major undergraduates. Specific emphasis will be on topics relevant to near-term professional goals of students (graduate school applications, job interviews, career pathways, CV/resume, professional presentation skills, and ethical research).

**PHYS 4980 Special Topics In Physics**

[1-4 credit hours]

Individual or small group study of selected topics not covered in regular undergraduate courses.

**Term Offered:** Spring, Summer, Fall

## Honors in Physics and Astronomy

Qualified juniors and seniors may be invited to work for the citation "honors in physics and astronomy."

1. Admission: The Honors Program in the department of physics and astronomy is open to physics majors and may be taken concurrently with College Honors. Admission to the program is based upon the student's academic achievement (at least a 3.0 GPA overall; at least a 3.3 GPA in the major), recommendations of previous instructors and an interview with the departmental honors officer. A petition for entrance into the program normally should be made before the end of the sophomore year.
2. Requirements: In order to remain in the program and graduate with departmental honors, the students must maintain at least a 3.0 cumulative GPA and at least a 3.3 GPA in the major. In addition to the normal requirements for a physics undergraduate major, the student must successfully complete six hours of physics with honors in courses numbered above 3320<sup>1</sup>, six hours of math chosen from MATH 2860 and other math courses above the 3000 level. A written Honors Thesis and an oral presentation of the thesis work are required.

<sup>1</sup> ASTR 4810, ASTR 4820 may count toward this requirement.

## BA in Astronomy

The B.A. degree in astronomy a minimum of 40 hours of required astronomy and physics courses in the Department of Physics and

Astronomy, 15 hours of mathematics, and at least 9 additional hours in the natural sciences and mathematics, chosen with the Advisor's approval are required.

#### Recommended Introductory Course

PHYS 1910 Frontiers Of Physics And Astronomy (strongly recommended)

The following courses are required:

ASTR 2010 Solar System Astronomy  
 ASTR 2020 Stars, Galaxies, And The Universe  
 ASTR 3880 Foundations of Astronomy  
 ASTR 4810 Astrophysics I  
 ASTR 4820 Astrophysics II  
 ASTR 4880 Astrophysical Measurements  
 Basic Physics Sequence: either (PHYS 2130 & PHYS 2140) or (PHYS 2070 & PHYS 2080 & PHYS 2100)  
 PHYS 3310 Modern Physics I  
 PHYS 4920 Senior Capstone Project  
 PHYS 4950 Undergraduate Professional Development Seminar  
 Select 6 additional hours of advanced physics courses numbered 3000 or higher

The following related courses in Mathematics are also required:

Calculus I and II: either (MATH 1830 & MATH 1840) or (MATH 1850 & MATH 1860)  
 MATH 2850 Elementary Multivariable Calculus  
 MATH 3610 Statistical Methods I

Other courses in related science areas: At least 9 additional hours hours of approved electives, of which at least two courses must be major-level chosen from at least two of the departments: in biology, chemistry, or environmental sciences, approved by the student's academic advisor.

This program is intended to provide the combination of fundamental physics, together with general and advanced astronomy, required for a career in astronomy or a related area. It also has the flexibility required by students who wish to pursue interdisciplinary studies or prepare for careers in teaching or other professions requiring a fundamental understanding of the physical sciences.

Below is a sample plan of study. Consult your degree audit for your program requirements

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
PHYS 1910	Frontiers Of Physics And Astronomy (Or electives to reach 120 hours)	3
ASTR 2010	Solar System Astronomy	3
Elementary Foreign Language I		4
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
Hours		16
<b>Second Term</b>		
ASTR 2020	Stars, Galaxies, And The Universe	3

PHYS 2130	Physics For Science And Engineering Majors I <sup>1</sup>	5
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
Elementary Foreign Language II		4
Hours		16

#### Third Term

ENGL 1110	College Composition I	3
MATH 2850	Elementary Multivariable Calculus	4
MATH 3610	Statistical Methods I	3
PHYS 2140	Physics For Science And Engineering Majors II <sup>1</sup>	5
Hours		15

#### Fourth Term

ASTR 3880	Foundations of Astronomy	4
Select one of the following:		3-4
BIOL 2150 to BIOL 4xxx		
CHEM 1230 to CHEM 4xxx		
EEES 2010 to EEES 4xxx		
Select one of the following:		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
ENGL 2960	Professional and Business Writing	
Social Sciences Core		3
Elective		3
Hours		16-17

#### Fifth Term

PHYS 3310	Modern Physics I	3
3000-4000 level Phys		3
Social Sciences Core		3
Arts/Humanities Core (History)		3
Arts/Humanities Core		3
Hours		15

#### Sixth Term

3000-4000 level PHYS		3
Select one of the following:		3-4
BIOL 2150 to BIOL 4xxx		
CHEM 1230 to CHEM 4xxx		
EEES 2010 to EEES 4xxx		
Social Sciences Core		3
Arts/Humanities Core		3
Writing Across the Curriculum (WAC)		3
Hours		15-16

#### Seventh Term

PHYS 4950	Undergraduate Professional Development Seminar	1
ASTR 4810	Astrophysics I	3

ASTR 4880	Astrophysical Measurements	3
ENGL 2710-2800	Arts/Humanities Core (English Lit)	3
Diversity of US		3
Hours		13
<b>Eighth Term</b>		
PHYS 4920	Senior Capstone Project	1
ASTR 4820	Astrophysics II	3
Arts/Humanities Core (Fine Arts)		3
Non-US Diversity		3
Elective		4
Hours		14
Total Hours		120-122

<sup>1</sup> PHYS 2070, PHYS 2080 & PHYS 2100 may be substituted for PHYS 2130 and PHYS 2140 with advisors permission.

## BA in Physics

The B.A. degree in physics a minimum of 34 hours of required physics or astronomy courses in the Department of Physics and Astronomy, 15 hours of mathematics, and at least 9 additional hours in the natural sciences and mathematics, chosen with the Advisor's approval are required.

Recommended Introductory Course  
PHYS 1910 Frontiers Of Physics And Astronomy (strongly recommended)

The following courses are required:

Basic Physics Sequence: either (PHYS 2130 & PHYS 2140) or (PHYS 2070 & PHYS 2080 & PHYS 2100)

PHYS 3180 Intermediate Laboratory

PHYS 3310 Modern Physics I

PHYS 4920 Senior Capstone Project

PHYS 4950 Undergraduate Professional Development Seminar

Select at least 16 hours of advanced physics or astronomy courses numbered above 3000

The following related courses in Mathematics are also required:

Calculus I and II: either (MATH 1830 & MATH 1840) or (MATH 1850 & MATH 1860)

MATH 2850 Elementary Multivariable Calculus

MATH 3610 Statistical Methods I

Other courses in related science areas: At least 9 additional hours of approved electives, of which at least two courses must be major-level chosen from at least two of the departments: in biology, chemistry, or environmental sciences, approved by the student's academic advisor.

This program is intended to provide the flexibility required by students who wish to pursue interdisciplinary studies, or prepare for careers in teaching or other professions requiring a fundamental understanding of the physical sciences.

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
ENGL 1110	College Composition I	3
PHYS 1910	Frontiers Of Physics And Astronomy (Or electives to reach 120 hours)	3
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
Arts/Humanities Core		3
Hours		15
<b>Second Term</b>		
PHYS 2130	Physics For Science And Engineering Majors I <sup>1</sup>	5
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
Select one of the following:		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
ENGL 2960	Professional and Business Writing	
Social Science Core		3
Hours		15
<b>Third Term</b>		
MATH 2850	Elementary Multivariable Calculus	4
Arts/Humanities Core		3
MATH 3610	Statistical Methods I	3
PHYS 2140	Physics For Science And Engineering Majors II <sup>1</sup>	5
Hours		15
<b>Fourth Term</b>		
PHYS 3180	Intermediate Laboratory	3
Select one of the following:		3-4
BIOL 2150 to BIOL 4xxx		
CHEM 1230 to CHEM 4xxx		
EEES 2010 to EEES 4xxx		
Social Sciences Core		3
Arts/Humanities Core		3
Arts/Humanities Core (Fine Arts)		3
Hours		15-16
<b>Fifth Term</b>		
PHYS 3310	Modern Physics I (WAC)	3
PHYS 3000-4000	Level Electives	3
Social Sciences Core		3
Elementary Foreign Language I		4
Arts/Humanities Core (History)		3
Hours		16

**Sixth Term**

PHYS 3000-4000 Level Electives	4
Select one of the following:	3-4
BIOL 2150 to BIOL 4xxx	
CHEM 1230 to CHEM 4xxx	
EEES 2010 to EEES 4xxx	
Elective	3
Elementary Foreign Language II	4
Hours	14-15

**Seventh Term**

PHYS 4950 Undergraduate Professional Development Seminar	1
PHYS 3000-4000 Level Electives	3
ENGL 2710-2800 Arts/Humanities Core (English Lit)	3
Elective(s) > 3000-level	4
Diversity of US	3
Hours	14

**Eighth Term**

PHYS 4920 Senior Capstone Project	1
PHYS 3000-4000 Level Electives	6
Non-US Diversity	3
Writing Across the Curriculum (WAC)	3
Elective	3
Hours	16
Total Hours	120-122

<sup>1</sup> PHYS 2070, PHYS 2080 & PHYS 2100 may be substituted for PHYS 2130 and PHYS 2140 with advisors permission.

## BS in Physics

The **B.S. degree in physics** requires completion of a common core of 34 hours of physics courses and 29 hours of related-area courses and a choice of one concentration with additional requirements as listed below. The concentrations contain an additional 6-20 hours of physics, astronomy and related courses.

**Recommended Introductory Course**

PHYS 1910 Frontiers Of Physics And Astronomy (strongly recommended)

**Required Core Physics Courses**

PHYS 2130 Physics For Science And Engineering Majors I 1  
 PHYS 2140 Physics For Science And Engineering Majors II 1  
 PHYS 3310 Modern Physics I  
 PHYS 3410 Thermal Physics  
 PHYS 4210 Theoretical Mechanics  
 PHYS 4230 Electricity And Magnetism I  
 PHYS 4240 Electricity And Magnetism II  
 PHYS 4310 Quantum Mechanics  
 PHYS 4920 Senior Capstone Project  
 PHYS 4950 Undergraduate Professional Development Seminar  
 PHYS 4910 Research Problems-Physics And Astronomy (4 hours)

The following related courses are also required:

CHEM 1230 & CHEM 1280 General Chemistry I and General Chemistry Lab I  
 EECS 1500 Introduction to Programming  
 Calculus I and II: either (MATH 1830 & MATH 1840) or (MATH 1850 & MATH 1860)  
 MATH 2850 Elementary Multivariable Calculus  
 Linear Algebra: (MATH 1890 or MATH 2890)  
 MATH 2860 Elementary Differential Equations  
 MATH 3610 Statistical Methods I

One additional course chosen from major-level courses in biology, chemistry, or environmental sciences

**Completion of one of the following concentrations is required:****Physics**

PHYS 3180 Intermediate Laboratory  
 PHYS 4580 Molecular And Condensed Matter Laboratory or PHYS 4780 Atomic And Nuclear Physics Laboratory

**Astrophysics**

ASTR 2010 Solar System Astronomy  
 ASTR 2020 Stars, Galaxies, And The Universe  
 ASTR 3880 Foundations of Astronomy  
 ASTR 4810 Astrophysics I  
 ASTR 4820 Astrophysics II  
 ASTR 4880 Astrophysical Measurements

**Applied Physics**

PHYS 3180 Intermediate Laboratory  
 PHYS 3610 Optics And Lasers  
 PHYS 4510 Physics Of Condensed Matter  
 PHYS 4580 Molecular And Condensed Matter Laboratory or PHYS 4780 Atomic And Nuclear Physics Laboratory  
 Plus 3 additional hours of appropriate courses from physics or engineering, chosen with the advisor's approval

**Biomedical Physics**

PHYS 3180 Intermediate Laboratory  
 PHYS 4430 Physics Applications in Medicine I  
 PHYS 4440 Physics Applications in Medicine II  
 PHYS 4580 Molecular And Condensed Matter Laboratory or PHYS 4780 Atomic And Nuclear Physics Laboratory  
 BIOL 2150 Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation <sup>2</sup>  
 BIOL 2160 Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation <sup>2</sup>  
 EXSC 2510 Human Anatomy <sup>3</sup>  
 EXSC 2520 Human Anatomy Laboratory <sup>3</sup>  
 EXSC 2530 Human Physiology <sup>3</sup>  
 EXSC 2540 Human Physiology Laboratory <sup>3</sup>

**Recommended Electives** In addition to the above requirements, students should consider the following recommended elective courses:  
 MATH 4740 Advanced Applied Mathematics I  
 MATH 4750 Advanced Applied Mathematics II



- <sup>1</sup> With department approval, a student may substitute PHYS 2070, PHYS 2080 and PHYS 2100 for PHYS 2130 and PHYS 2140.
- <sup>2</sup> Related courses, which satisfy the related major-level course requirement above.
- <sup>3</sup> Or select alternate sequence of EXSC 2460 ,EXSC 2470, EXSC 2560, and EXSC 2570.

## Bachelor of Science in Physics (Applied Physics Concentration)

Below is a sample program of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
PHYS 2130	Physics For Science And Engineering Majors I	5
ENGL 1110	College Composition I	3
PHYS 1910	Frontiers Of Physics And Astronomy	3
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
Hours		17
<b>Second Term</b>		
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
PHYS 2140	Physics For Science And Engineering Majors II	5
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
Hours		15
<b>Third Term</b>		
PHYS 3310	Modern Physics I	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 3610	Statistical Methods I	3
MATH 2850	Elementary Multivariable Calculus	4
Hours		15
<b>Fourth Term</b>		
EECS 1500	Introduction to Programming	3
PHYS 3180	Intermediate Laboratory	3
Social Sciences Core		3
PHYS 3410	Thermal Physics	3
MATH 2860	Elementary Differential Equations	3
Hours		15

### Fifth Term

PHYS 4230	Electricity And Magnetism I	3
PHYS 4210	Theoretical Mechanics	3
Arts/Humanities Core		3
Writing Across the Curriculum (WAC) non-physics course		3
Non-US Diversity		3
Hours		15

### Sixth Term

PHYS 4240	Electricity And Magnetism II	3
PHYS 4310	Quantum Mechanics	3
Major Level BIOL, EEES, eg:		3-4
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	
EEES 2010	Introduction To Environmental Studies	
EEES 2100	Fundamentals Of Geology	
EEES 2150	Biodiversity	
Diversity of US		3
Social Sciences Core		3
Hours		15-16

### Seventh Term

PHYS 3610	Optics And Lasers	3
PHYS 4510	Physics Of Condensed Matter	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4950	Undergraduate Professional Development Seminar	1
Arts/Humanities Core		3
Elective		3
Hours		15

### Eighth Term

Physics or Eng 3000/4000		3
PHYS 4580 or PHYS 4780	Molecular And Condensed Matter Laboratory or Atomic And Nuclear Physics Laboratory	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4920	Senior Capstone Project	1
Elective		4
Hours		13
Total Hours		120-121

## Bachelor of Science in Physics (Astrophysics Concentration)

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
ASTR 2010	Solar System Astronomy	3
PHYS 1910	Frontiers Of Physics And Astronomy	3
PHYS 2130	Physics For Science And Engineering Majors I	5
Hours		17
<b>Second Term</b>		
ENGL 1110	College Composition I	3
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
ASTR 2020	Stars, Galaxies, And The Universe	3
PHYS 2140	Physics For Science And Engineering Majors II	5
Hours		15
<b>Third Term</b>		
PHYS 3310	Modern Physics I	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 3610	Statistical Methods I	3
MATH 2850	Elementary Multivariable Calculus	4
Hours		15
<b>Fourth Term</b>		
ASTR 3880	Foundations of Astronomy	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 2860	Elementary Differential Equations	3
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3
EECS 1500	Introduction to Programming	3
Hours		16
<b>Fifth Term</b>		
PHYS 4230	Electricity And Magnetism I	3
PHYS 4210	Theoretical Mechanics	3
Major Level BIOL, EEES, eg:		3-4
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	
EEES 2010	Introduction To Environmental Studies	
EEES 2100	Fundamentals Of Geology	
EEES 2150	Biodiversity	
Writing Across the Curriculum (WAC) non-physics		3

Non-US Diversity		3
Hours		15-16
<b>Sixth Term</b>		
PHYS 4240	Electricity And Magnetism II	3
PHYS 4310	Quantum Mechanics	3
PHYS 3410	Thermal Physics	3
Diversity of US		3
Social Sciences Core		3
Hours		15
<b>Seventh Term</b>		
ASTR 4810	Astrophysics I	3
ASTR 4880	Astrophysical Measurements	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4950	Undergraduate Professional Development Seminar	1
Arts/Humanities Core		3
Elective		3
Hours		15
<b>Eighth Term</b>		
ASTR 4820	Astrophysics II	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4920	Senior Capstone Project	1
Arts/Humanities Core		3
Social Sciences Core		3
Hours		12
Total Hours		120-121

## Bachelor of Science in Physics (Biomedical Physics Concentration)

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
ENGL 1110	College Composition I	3
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
PHYS 1910	Frontiers Of Physics And Astronomy	3
PHYS 2130	Physics For Science And Engineering Majors I	5
Hours		17
<b>Second Term</b>		
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
PHYS 2140	Physics For Science And Engineering Majors II	5
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
Hours		15
<b>Third Term</b>		
PHYS 3310	Modern Physics I	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 3610	Statistical Methods I	3
MATH 2850	Elementary Multivariable Calculus	4
Hours		15
<b>Fourth Term</b>		
PHYS 3180	Intermediate Laboratory	3
MATH 2860	Elementary Differential Equations	3
PHYS 3410	Thermal Physics	3
Social Sciences Core		3
EECS 1500	Introduction to Programming	3
Hours		15
<b>Fifth Term</b>		
PHYS 4230	Electricity And Magnetism I	3
PHYS 4210	Theoretical Mechanics	3
Arts/Humanities Core		3
Writing Across the Curriculum (WAC) non physics		3
Non- US Diversity		3
Hours		15
<b>Sixth Term</b>		
PHYS 4240	Electricity And Magnetism II	3
PHYS 4310	Quantum Mechanics	3
BIOL 2150 & BIOL 2160	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation and Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	5
Diversity of US		3
Hours		14
<b>Seventh Term</b>		
PHYS 4430	Physics Applications in Medicine I	3
PHYS 4580 or PHYS 4780	Molecular And Condensed Matter Laboratory or Atomic And Nuclear Physics Laboratory	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4950	Undergraduate Professional Development Seminar	1

EXSC 2510 & EXSC 2520	Human Anatomy and Human Anatomy Lab	4
Arts/Humanities Core		3
Hours		16
<b>Eighth Term</b>		
PHYS 4440	Physics Applications in Medicine II	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4920	Senior Capstone Project	1
EXSC 2530 & EXSC 2540	Human Physiology and Human Physiology Lab	4
Social Sciences Core		3
Hours		13
Total Hours		120

## Bachelor of Science in Physics (Physics Concentration)

Below is a sample program of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
NSM 1000	Natural Sciences & Mathematics	2
ENGL 1110	College Composition I	3
Select one of the following:		4
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	
MATH 1850	Single Variable Calculus I	
PHYS 1910	Frontiers Of Physics And Astronomy	3
PHYS 2130	Physics For Science And Engineering Majors I	5
Hours		17
<b>Second Term</b>		
MATH 1890 or MATH 2890	Elementary Linear Algebra or Numerical Methods And Linear Algebra	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Select one of the following:		4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	
MATH 1860	Single Variable Calculus II	
PHYS 2140	Physics For Science And Engineering Majors II	5
Hours		15
<b>Third Term</b>		
PHYS 3310	Modern Physics I	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
MATH 3610	Statistical Methods I	3

MATH 2850	Elementary Multivariable Calculus	4
Hours		15

**Fourth Term**

PHYS 3180	Intermediate Laboratory	3
MATH 2860	Elementary Differential Equations	3
PHYS 3410	Thermal Physics	3
EECS 1500	Introduction to Programming	3
Social Sciences Core		3
Hours		15

**Fifth Term**

PHYS 4230	Electricity And Magnetism I	3
PHYS 4210	Theoretical Mechanics	3
Arts/Humanities Core		3
Writing Across the Curriculum (WAC) Non-Physics		3
Non-US Diversity		3
Hours		15

**Sixth Term**

PHYS 4240	Electricity And Magnetism II	3
PHYS 4310	Quantum Mechanics	3
Major Level BIOL, EEES, eg:		3-4
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	
EEES 2010	Introduction To Environmental Studies	
EEES 2100	Fundamentals Of Geology	
EEES 2150	Biodiversity	
Diversity of US		3
Social Sciences Core		3
Hours		15-16

**Seventh Term**

PHYS 4580 or PHYS 4780	Molecular And Condensed Matter Laboratory or Atomic And Nuclear Physics Laboratory	3
PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4950	Undergraduate Professional Development Seminar	1
Arts/Humanities Core		3
Electives		6
Hours		15

**Eighth Term**

PHYS 4910	Research Problems-Physics And Astronomy	2
PHYS 4920	Senior Capstone Project	1
Electives		10
Hours		13
Total Hours		120-121

## Minor in Astrophysics

Students seeking a minor in astrophysics must complete 23 hours of course work in physics as follows:

Code	Title	Hours
Select one of the following sequences:		10-12
PHYS 2130 & PHYS 2140	Physics For Science And Engineering Majors I and Physics For Science And Engineering Majors II	
PHYS 2070 & PHYS 2080 & PHYS 2100	General Physics I and General Physics II and Physics With Calculus	
PHYS 3310	Modern Physics I	3
ASTR 2010	Solar System Astronomy	3
ASTR 2020	Stars, Galaxies, And The Universe	3
ASTR 3880	Foundations of Astronomy	4
Total Hours		23-25

Students must maintain a minimum GPA of 2.0 for all course work in the minor. Candidates for the minor must have their course work verified and approved by a departmental Adviser or Chair prior to making formal application for graduation.

## Minor in Physics

Students seeking a minor in physics must complete 22 hours of course work in physics as follows:

Code	Title	Hours
Select one of the following sequences:		10-12
PHYS 2130 & PHYS 2140	Physics For Science And Engineering Majors I and Physics For Science And Engineering Majors II	
PHYS 2070 & PHYS 2080 & PHYS 2100	General Physics I and General Physics II and Physics With Calculus	
PHYS 3310	Modern Physics I	3
PHYS 3180	Intermediate Laboratory	3
Select two physics courses numbered above 3400		6
Total Hours		22-24

Students must maintain a minimum GPA of 2.0 for all course work in the minor. Candidates for the minor must have their course work verified and approved by a departmental advisor or Chair prior to making formal application for graduation.

## Minor in Renewable Energy

(This minor is interdisciplinary)

The Minor in Renewable Energy (MRE) has been established as an interdisciplinary minor program. It is designed for students in the STEM areas majoring in the following departments:

- Physics and Astronomy,
- Chemistry,
- Environmental Sciences,

- Biology,
- Mathematics,
- Mechanical, Industrial and Manufacturing Engineering,
- Chemical and Environmental Engineering,
- Electrical Engineering and Computer Science,
- Civil Engineering, and
- Bioengineering.

Students with other majors can enroll in the MRE provided they complete the prerequisite courses. The goal of the minor is to expose students to quantitative analyses of the use of energy in human societies, its consequences and environmental impacts. A primary focus will be on the advantages and complexities of introducing renewable energy resources. Students will be required to take at least one course in the social, political, and economic ramifications of the use of energy in general and renewable energy in particular. An internship is required to enhance the practical training of students.

**Course requirements are as follows:** Students must complete at least 21 hours of coursework, including an internship in a renewable energy related area. The following program of courses is required:

Code	Title	Hours
PHYS 3400	Physical Principles Of Energy Sources For Humans	3
EEES 2200	Climate Change	3
CHEM 3810	CHEMISTRY OF SUSTAINABLE ENERGY RESOURCES	3
PHYS 4940	Internship in Renewable Energy	3
PSC 4340	Environmental Policy	3
or ECON 3240	Environmental Economics	
Select two of the following:		6
PHYS 4400	Principles and Varieties of Solar Energy	
MIME 4980	Special Topics (Renewable Energy)	
CHEE/BIOE 4980	Special Topics In Chemical Engineering (Biofuels)	
CHEE 4980	Special Topics In Chemical Engineering (Fuel Cells and the Hydrogen Economy)	
Total Hours		21

## Prerequisites

Code	Title	Hours
PHYS 2080	General Physics II (or higher)	5
CHEM 1240	General Chemistry II	4

Both courses under CHEE 4980 require MATH 1850

## Faculty

### Department of Biological Sciences

**Brian P. Ashburner\***, 2001, Associate Dean and Associate professor, B.A., St. Anselm College; Ph.D., Loyola University of Chicago

**Tomer Avidor-Reiss\***, 2012, Professor, B.S., Hebrew University; Ph.D., Weizmann Institute of Science

**Bruce Bamber\***, 2006, Associate professor, B.Sc., University of Calgary; Ph.D., University of Washington

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**Sanjay V. Khare\***, 2004, Professor and Chair, Ph.D., University of Maryland

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**S. Thomas Megeath\***, 2006, Professor, B.S., California Institute of Technology; Ph.D., Cornell University

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**J.D. Smith\***, 2008, Professor, S.B., Massachusetts Institute of Technology; M.S., Ph.D., Cornell University

**Yanfa Yan\***, 2011, Ohio Research Scholar professor, B.S., M.S., Ph.D., Wuhan University

# COLLEGE OF NURSING

## Undergraduate Nursing Program

Health Science Campus  
Collier Building  
3000 Arlington Avenue  
Toledo, Ohio 43614  
419.383.5810  
admitnurse@utoledo.edu

### Mission Statement

The mission of the College of Nursing is to improve the human condition; to educate professional nurses in a manner that engages and serves a diverse learner population as part of a larger metropolitan university, to discover and disseminate nursing knowledge that informs evidence-based practice for quality patient outcomes, and to address the service needs of our stakeholders through innovative programs and entrepreneurial initiatives.

### The College of Nursing Vision

The College of Nursing will be the college of choice across the span of nursing education that embodies excellence in the application of the art and science of nursing within an Interprofessional context and is distinguished by scholarly inquiry that emphasizes clinical outcomes and translational research.

## Contacts

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Susan Sochacki, PhD, Director, Pre-Licensure Programs  
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Location:  
HEALTH SCIENCE CAMPUS  
Collier Building  
3000 Arlington Ave  
Toledo, OH 43614  
Mail Stop 1026

Student Services: 419.383.5810  
Undergraduate Advising Office: 419.530.2673; Rocket Hall 1400

## Degrees Offered

The College of Nursing prepares students for a variety of careers in the healthcare environment. Professional practice settings include hospitals, long-term care, home health, school nursing, community centers as well as opportunities in teaching, management, and service settings.

State Boards of Nursing set standards for licensure. It's highly recommended that students who seek admission to the BSN program at

the University of Toledo, College of Nursing contact their home state's Board of Nursing to verify that the desired program and its graduates will meet the eligibility criteria for approval of those credentials. The website of the National Council of State Boards of Nursing has contact information on Boards of Nursing in each state.

## Degrees Offered

- BS in Nursing (p. 419)
- Registered Nurse - BS in Nursing (p. 420)

### NURS 1000 Professional Nursing Orientation

[1 credit hour]

Course provides opportunity for development of academic, personal, and interpersonal skills required to become a successful, independent learner, introduces student to professional nursing as a career.

**Term Offered:** Spring, Fall

### NURS 3040 Nursing to Promote Wellness Across the Lifespan

[5 credit hours]

Focus on wellness and primary prevention across the lifespan.

Introduction to nursing as a discipline. Emphasis on concepts of wellness, communication, lifespan, clinical judgment and physiologic processes. Recognize individuals in context of family and community. Student experiences in community-based settings.

**Corequisites:** NURS 3080, NURS 3150, NURS 3190

**Term Offered:** Spring, Summer, Fall

### NURS 3080 Fundamentals of Nursing and Assessment Across the Lifespan

[5 credit hours]

Focus on holistic assessment of individuals across the lifespan.

Emphasis on assessment, skills, technology and professional nursing role. Experiential learning with peers in a simulated environment.

**Corequisites:** NURS 3040, NURS 3150, NURS 3190

**Term Offered:** Spring, Summer, Fall

### NURS 3110 Nursing Agency II: Assessment

[3 credit hours]

Provides for acquisition of knowledge and development of skill in comprehensive nursing assessment.

**Term Offered:** Spring, Summer, Fall

### NURS 3120 Adult Health Nursing I

[7 credit hours]

Care of adults with common nursing problems using Orem's Self-Care Deficit Theory of Nursing.

**Prerequisites:** (NURS 3010 (may be taken concurrently) with a minimum grade of C and NURS 3110 (may be taken concurrently) with a minimum grade of C and NURS 3170 (may be taken concurrently) with a minimum grade of C and NURS 3210 (may be taken concurrently) with a minimum grade of C and NURS 4950 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 3130 Gerontological Nursing**

[3 credit hours]

Focus on theories and concepts of aging and health, based on Universal Self-Care Requisites from Orem's Self-Care Deficit Theory of Nursing.

**Prerequisites:** NURS 4030 (may be taken concurrently) with a minimum grade of C and NURS 4020 (may be taken concurrently) with a minimum grade of C and NURS 3620 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 3150 Pathopharmacology 1**

[3 credit hours]

Focus on fundamental concepts in pathophysiology and pharmacology across the life span. Foundation for understanding disease processes and drugs [i.e. therapeutic outcomes and potential drug interactions].

**Corequisites:** NURS 3040, NURS 3080, NURS 3190

**Term Offered:** Spring, Summer, Fall

**NURS 3170 Concepts Of Pathophysiology**

[3 credit hours]

Basic science of pathophysiology of disease across the life span. Prepares for critical thinking in application of concepts to nursing practice.

**Term Offered:** Spring, Summer, Fall

**NURS 3180 Concepts Of Nursing Pharmacology**

[3 credit hours]

Fundamental pharmacologic principles of physiological response to drugs, therapeutic outcomes and potential drug interactions. Prepares for critical thinking in application of pharmacotherapy principles to nursing.

**Prerequisites:** NURS 3010 (may be taken concurrently) with a minimum grade of C and NURS 3110 (may be taken concurrently) with a minimum grade of C and NURS 3210 (may be taken concurrently) with a minimum grade of C and NURS 3170 (may be taken concurrently) with a minimum grade of C and NURS 4950 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 3190 Nursing Research 1**

[2 credit hours]

Focus on introduction of concepts, issues, and processes in nursing research.

**Corequisites:** NURS 3040, NURS 3080, NURS 3150

**Term Offered:** Spring, Summer, Fall

**NURS 3280 Advanced Fundamentals**

[3 credit hours]

Focus on application of assessment skills and demonstrating safe procedures for high risk interventions in simulated experiences. Emphasis on the concepts of clinical judgment, professional behaviors, and collaboration.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3290, NURS 3300, NURS 3400, NURS 3540

**Term Offered:** Spring, Summer, Fall

**NURS 3290 Nursing Research 2**

[1 credit hour]

Introduction to evidence based practice. Emphasis is on learning how to evaluate research for evidence based practice in nursing as a baccalaureate nurse.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3300, NURS 3400, NURS 3540

**Term Offered:** Spring, Summer, Fall

**NURS 3300 Nursing Care of Persons with Health Challenges**

[4 credit hours]

Focus on holistic care of adults and older adults in acute care settings experiencing health problems. Emphasis on the concepts of leadership, collaboration, and communication. Recognizes individuals in context of family and community.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3080 with a minimum grade of C and NURS 3150 with a minimum grade of C

**Corequisites:** NURS 3280, NURS 3400, NURS 3540

**Term Offered:** Spring, Summer, Fall

**NURS 3400 Family Health**

[4 credit hours]

Focus on health, wellness and illness of child - bearing families and children across various settings. Emphasis on concepts of gas exchange, sexuality, reproduction, grief, mood and affect, family, safety, advocacy and family communication. Recognizes individuals in context of family and community.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3280, NURS 3300, NURS 3540

**Term Offered:** Spring, Summer, Fall

**NURS 3540 Pathopharmacology 2**

[3 credit hours]

Focuses on selected alterations and related pharmacology across the life span. Foundation for understanding disease processes and drugs [i.e. therapeutic outcomes and potential drug interactions]. Basis for critical thinking in nursing to help clients cope with effects of illness and return to health. Emphasis on concepts of: clotting, elimination, gas exchange, intracranial regulation, mood & affect, nutrition, patient education, perfusion, reproduction, sensory perception, tissue integrity.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3280, NURS 3300, NURS 3400

**Term Offered:** Spring, Summer, Fall



**NURS 3620 Women's Health Nursing**

[5 credit hours]

Provides didactic and clinical opportunities relevant to care of women across lifespan. Various clinical settings used in application of nursing system with a self-care framework.

**Prerequisites:** (NURS 3120 (may be taken concurrently) with a minimum grade of C and NURS 3180 (may be taken concurrently) with a minimum grade of C and NURS 3630 (may be taken concurrently) with a minimum grade of C)

**Corequisites:** NURS 4020, NURS 4030

**Term Offered:** Spring, Summer, Fall

**NURS 3630 Mental Health Nursing**

[5 credit hours]

Psychosocial influences on self-care agency are presented within the context of culturally competent nursing care. Concepts are interpreted within self-care deficit theory and applied in clinical experiences.

**Prerequisites:** (NURS 3010 (may be taken concurrently) with a minimum grade of C and NURS 3110 (may be taken concurrently) with a minimum grade of C and NURS 3210 (may be taken concurrently) with a minimum grade of C and NURS 3170 (may be taken concurrently) with a minimum grade of C and NURS 4950 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 3640 Parent-Child Nursing**

[5 credit hours]

Nursing care of infants, children, and adolescents within families and groups using Orem's Self Care Deficit Theory of Nursing. Clinical experiences in wellness, acute, and chronic care settings.

**Prerequisites:** (NURS 3620 (may be taken concurrently) with a minimum grade of C and NURS 4020 (may be taken concurrently) with a minimum grade of C and NURS 4030 (may be taken concurrently) with a minimum grade of C)

**Corequisites:** NURS 3130, NURS 4010, NURS 4250

**Term Offered:** Spring, Summer, Fall

**NURS 4010 Community Health Nursing**

[5 credit hours]

Focuses on design and implementation of nursing care for aggregates and communities. Individual and family care is provided within the context of population health.

**Prerequisites:** (NURS 3620 (may be taken concurrently) with a minimum grade of C and NURS 4030 (may be taken concurrently) with a minimum grade of C) and NURS 4020 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4020 Leadership And Management In Nursing**

[3 credit hours]

Focus on principles and theories of management/leadership as a basis for provision of nursing care.

**Prerequisites:** (NURS 3120 (may be taken concurrently) with a minimum grade of C and NURS 3180 (may be taken concurrently) with a minimum grade of C and NURS 3630 (may be taken concurrently) with a minimum grade of C)

**Corequisites:** NURS 4030

**Term Offered:** Spring, Summer, Fall

**NURS 4030 Adult Health Nursing II**

[7 credit hours]

Design and implementation of nursing systems for the adult population with complex health states. Includes application of nursing leadership principles in clinical settings.

**Prerequisites:** (NURS 3120 (may be taken concurrently) with a minimum grade of C and NURS 3180 (may be taken concurrently) with a minimum grade of C and NURS 3630 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 4080 Perioperative Nursing Care**

[4 credit hours]

Clinical elective with focus on the practice of perioperative nursing.

**Prerequisites:** (NURS 3120 with a minimum grade of C and NURS 3630 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 4100 Transition to BSN Practice**

[3 credit hours]

Explores concepts relevant to the transition from ADN/Diploma RN role to BSN nursing practice.

**Term Offered:** Spring, Fall

**NURS 4110 Applied Health Assessment Across the Lifespan**

[3 credit hours]

This course emphasizes the concepts and skills essential to the assessment parameter of the nursing process to broaden the learners' knowledge base and to increase assessment skills in all settings.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4120 Nursing Leadership And Management**

[5 credit hours]

Focus on principles of management and leadership for the baccalaureate prepared nurse. Provision of professional care in a variety of settings.

**Prerequisites:** (NURS 4230 (may be taken concurrently) with a minimum grade of C and NURS 4180 (may be taken concurrently) with a minimum grade of C and NURS 4190 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Fall

**NURS 4130 Nursing Care of Persons in Crisis 1**

[4 credit hours]

Focus on nursing care of persons across the lifespan in the acute care setting with mental health issues. Emphasis on concepts related to coping and stress tolerance; emotion; cognitive function; and maladaptive behavior.

**Prerequisites:** NURS 3280 with a minimum grade of C and NURS 3300 with a minimum grade of C and NURS 3540 with a minimum grade of C and NURS 3290 with a minimum grade of C and NURS 3400 with a minimum grade of C

**Corequisites:** NURS 4240, NURS 4260

**Term Offered:** Spring, Summer, Fall

**NURS 4180 Theoretical And Professional Foundations In Nursing**

[4 credit hours]

Focus on RN student's transition to professional higher education and theory-based practice. Current professional issues are explored. Political, socioeconomic, ethical and legal issues are critically examined and discussed.

**Term Offered:** Spring, Fall

**NURS 4190 Interpersonal Strategies In Nursing Of Older Individuals**

[6 credit hours]

Focus on application of Self-Care Deficit Theory of Nursing and health maintenance for older individuals within the family and environment; emphasis on development of interpersonal skills for RNs.

**Prerequisites:** NURS 4180 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4200 Population Focused Care**

[5 credit hours]

Focuses on the design and implementation of nursing care for aggregates and communities. Individual and family care is provided within the context of population focused care.

**Prerequisites:** (NURS 4190 (may be taken concurrently) with a minimum grade of C and NURS 4230 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Fall

**NURS 4210 Applied Nursing Research**

[3 credit hours]

Emphasizes all phases of the research process. Analysis and application of research strategies for the professional nurse.

**Term Offered:** Spring, Fall

**NURS 4220 Applied Pathophysiology And Pharmacology**

[4 credit hours]

Concepts of pathophysiology and pharmacology. Prepares for critical thinking in application of concepts to nursing practice.

**Term Offered:** Spring, Fall

**NURS 4230 Applied Health Assessment**

[3 credit hours]

Nursing application of health history, physical and psychosocial assessment skills across the lifespan.

**Term Offered:** Spring, Fall

**NURS 4240 Nursing Care of Persons in Crisis 2**

[8 credit hours]

Focus on changes in health in acute care settings across the lifespan. Emphasis on concepts related to oxygenation and hemostasis; homeostasis and regulation; protection and movement, and coping and stress tolerance.

**Prerequisites:** NURS 3280 with a minimum grade of C and NURS 3300 with a minimum grade of C and NURS 3400 with a minimum grade of C and NURS 3290 with a minimum grade of C and NURS 3540 with a minimum grade of C

**Corequisites:** NURS 4130, NURS 4260

**Term Offered:** Spring, Summer, Fall

**NURS 4250 Professional Nursing Competency**

[2 credit hours]

This course provides an overview of NCLEX and practice in the application of knowledge required for the professional nursing examination. Required for passing of exam.

**Prerequisites:** (NURS 3620 (may be taken concurrently) with a minimum grade of C and NURS 4020 (may be taken concurrently) with a minimum grade of C and NURS 4030 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 4260 Professional Development**

[3 credit hours]

This course facilitates the development and implantation of strategies to enable the synthesis of professional development for the baccalaureate nurse. The course enables the student to recognize and understand the critical role that nurses play in health care delivery. Students will analyze principles of professional practice and will explore strategies to model the professional practice role in current clinical situations. This course also assists the student in the online classroom environment.

**Prerequisites:** NURS 3280 with a minimum grade of C and NURS 3300 with a minimum grade of C and NURS 3540 with a minimum grade of C and NURS 3290 with a minimum grade of C and NURS 3400 with a minimum grade of C

**Corequisites:** NURS 4130, NURS 4240

**Term Offered:** Spring, Summer, Fall

**NURS 4270 Applied Health Assessment Across the Lifespan**

[3 credit hours]

This course emphasizes the concepts and skills essential to the assessment parameter of the nursing process. The purpose of this course is to broaden the learners' knowledge base, to increase their assessment skills, and to facilitate their ability to apply these skills in a clinical setting. The knowledge from this course is immediately applicable to everyday patient care. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4290 Nursing Care of Older Adults**

[4 credit hours]

Focus on the analysis and application of health and illness concepts with older adults. Concepts include healthcare delivery, attributes & roles of the nurse, and patient profile concepts. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4300 Informatics in Nursing**

[2 credit hours]

Focuses on current and future topics of informatics in nursing. Foundation for competency in documentation, informatics-based theory, implementation of evidence-based quality measures, evolving trends, legal, ethical implications.

**Prerequisites:** NURS 4100 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4310 Research Methods and Evidence Based Practice**

[3 credit hours]

Introduction to concepts, issues and processes in nursing research and evidence-based practice. Emphasis is on the use of research as a baccalaureate-prepared nurse, including critical analysis and evaluation of published research for use in evidence-based practice.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4320 Pathopharmacology Across the Lifespan**

[4 credit hours]

Covers basic concepts of pathophysiology and pharmacology. Prepares the nurse for critical thinking in application of concepts to nursing practice.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4330 Nursing Leadership and Management**

[5 credit hours]

Students focus on the professional nurse's role in applying the principles and theories of leadership and management as a basis for provision of nursing care across healthcare delivery systems. Emphasis will be on leadership concepts to achieve safe, high quality patient-centered nursing care.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4340 Population Focused Care**

[5 credit hours]

This course facilitates the development and implementation of strategies to enable the synthesis of professional development for the baccalaureate nurse within the community. The course enables the student to recognize and understand the critical role that nurses play in community and public health care delivery. Students will analyze principles of public health and will explore strategies to model the professional practice role in current community clinical situations. This course also assists the student in the online classroom environment. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4350 Transition to BSN Practice**

[2 credit hours]

This course facilitates the development and implementation of strategies to enable the synthesis of professional development for the baccalaureate nurse. The course enables the student to recognize and understand the critical role that nurses play in health care delivery. Students will analyze principles of professional practice and will explore strategies to model the professional practice role in current clinical situations. This course also assists the student in the online classroom environment. This course is online.

**Term Offered:** Spring, Fall

**NURS 4360 Theory and Collaborative Practice**

[3 credit hours]

This course facilitates the development and implementation of strategies to enable the synthesis of nursing theory and collaborative practice for the baccalaureate nurse. The course enables the student to recognize and understand the critical role that nurses play in health care delivery collaboration. Students will analyze theories of nursing and will explore strategies to apply nursing theory in current clinical situations. This course also assists the student in the online classroom environment. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4370 Health Promotion and Wellness Across the Lifespan**

[3 credit hours]

Focus on wellness and health promotion across the lifespan. Health promotion has become a national priority and is a foundation to the care for people of all ages.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4390 Health Promotion and Wellness Across the Lifespan**

[3 credit hours]

Focus on wellness and primary prevention across the lifespan. Emphasis on concepts of wellness, communication, lifespan, and physiologic processes. Additional concepts include the role of the nurse in healthcare delivery as related to health promotion. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4400 Quality and Safety in Nursing**

[2 credit hours]

Course examines responsibilities of baccalaureate prepared nurses in healthcare teams and ways they provide patient safety and quality care leading to optimum patient outcomes. This is an online course.

**Prerequisites:** NURS 4100 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4500 Leadership and Professional Development**

[3 credit hours]

Focus on the professional nurse's role in applying the principles of leadership. Emphasis will be on leadership and professional development concepts to achieve safe, high quality patient-centered nursing care.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4510 Population Health**

[4 credit hours]

Focuses on the design and implementation of nursing care for aggregates and communities across the lifespan. Emphasis on professional nursing and health care concepts.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4620, NURS 4700, NURS 4760

**Term Offered:** Spring, Summer, Fall

**NURS 4520 Pathopharmacology for the Practicing RN**

[3 credit hours]

Basic concepts of pathophysiology and pharmacology. Prepares for critical thinking in application of concepts to nursing practice.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4600 Critical Care Nursing**

[4 credit hours]

Clinical elective with focus on design and implementation of partially and wholly compensatory nursing systems for clients with critical health states.

**Prerequisites:** NURS 3120 with a minimum grade of C and NURS 3630 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4610 Translating Evidence for Nursing Practice**

[3 credit hours]

Introduces concepts, issues and processes in nursing evidence-based practice (EBP). Emphasis is on application of scientific evidence as a baccalaureate-prepared nurse, including critical appraisal and synthesis of evidence for EBP.

**Prerequisites:** NURS 4100 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4620 Precepted Clinical Practicum**

[5 credit hours]

Focus on partnering with clients (individuals, families, groups and/or communities) who are dealing with complex health problems of any age group and setting. Emphasis on concepts of health-care delivery, attributes and roles of nurse, and care competencies. Includes weekly seminars relevant to clinical issues.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4510, NURS 4700, NURS 4760

**Term Offered:** Spring, Summer, Fall

**NURS 4700 Nursing Care of Persons and Families with Complex Care Needs**

[3 credit hours]

Focus on nursing care of people with complex health issues across the lifespan. Emphasis on care coordination and Interprofessional collaborative teamwork.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4510, NURS 4620, NURS 4760

**Term Offered:** Spring, Summer, Fall

**NURS 4760 Professional Nursing Competency**

[3 credit hours]

Focus on preparation for the National Council Licensure Examination for Registered Nurses (NCLEX – RN). All concepts in the curriculum are included in comprehensive review.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4510, NURS 4620, NURS 4700

**Term Offered:** Spring, Summer, Fall

**NURS 4990 Independent Study**

[1-3 credit hours]

Independent study in nursing.

**Term Offered:** Spring, Summer, Fall

## BS in Nursing

Students pursuing a BSN degree that leads to nursing licensure complete two years of course work in the pre-professional division of the College of Nursing. Following completion of prerequisite courses, the student applies for admission to the upper division. Students take nursing courses on the Health Science Campus. 120 semester credit hours are required for graduation.

Admission to the upper division professional nursing program is competitive and based on cumulative GPA. A minimum higher education GPA of 3.0 is required to apply. Prerequisite courses must be completed with a grade of "C" or higher. Because the number of seats available

for starting upper division study each semester is limited; students are encouraged to maintain a cumulative GPA above 3.0.

Nursing advisors will assist students to determine semester for application to the major. Prerequisite courses must be completed prior to beginning nursing major. *Application deadlines are subject to change: please check with nursing advisors.*

Application to the major will include the higher education cumulative GPA without benefit of grade deletion. This means that a GPA will include the first grade earned for the course as well as the grade earned for a repeated course. Grades from all college courses determine GPA.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BS in Nursing - 4 Year

Students accepted into the College of Nursing should be academically prepared to be placed into MATH 2600 and CHEM 1120, otherwise students will be required to take MATH 1200 or MATH 1180 and/or CHEM 1110. The additional course credit can be used to meet the total credit hours required for graduation.

Students are required to successfully complete **120** credit hours with an overall grade point average of 2.0 or higher.

Students should consult their Degree Audit for coursework that fulfills the University of Toledo Core Curriculum.

The College of Nursing has full approval of the Ohio Board of Nursing and is nationally accredited by the Commission on Collegiate Nursing Education.

Course	Title	Hours
<b>First Term</b>		
CHEM 1120	Chemistry For Health Sciences	4
EEES 2150	Biodiversity	4
ENGL 1110	College Composition I	3
NURS 1000	Professional Nursing Orientation	1
PSY 1010	Principles Of Psychology	3
	Hours	15
<b>Second Term</b>		
ENGL 2950	Science And Technical Report Writing	3
HEAL 1800	Medical Terminology	3
	Elective	1
EXSC 2560	Anatomy and Physiology I	3
EXSC 2460	Human Anatomy And Physiology I Lab	1
	Hours	11
<b>Third Term</b>		
MATH 2600	Introduction To Statistics	3
EXSC 2570	Human Anatomy and Physiol II	3
EXSC 2470	Human Anatomy And Physiology II Lab	1
PSY 2510	Lifespan Developmental Psychology	3
	Arts/Humanities Core	3
	Social Sciences Core	3
	Hours	16



**Fourth Term**

HEAL 2800	Principles Of Nutrition	3
EXSC 2590	Microbiology and Infectious Diseases	3
PHIL 3370	Medical Ethics	3
Diversity of US		3
Non-US Diversity		3

**Students must apply and be accepted into the upper division professional major. Admission is competitive based on academic performance. All major courses must be completed with a grade of "C" or higher. A cumulative GPA of 3.0 is required to apply.**

Hours	15
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**Fifth Term**

NURS 3040	Nursing to Promote Wellness Across the Lifespan	5
NURS 3080	Fundamentals of Nursing and Assessment Across the Lifespan	5
NURS 3150	Pathopharmacology 1	3
NURS 3190	Nursing Research 1	2

Hours	15
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**Sixth Term**

NURS 3280	Advanced Fundamentals	3
NURS 3290	Nursing Research 2	1
NURS 3300	Nursing Care of Persons with Health Challenges	4
NURS 3400	Family Health	4
NURS 3540	Pathopharmacology 2	3

Hours	15
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**Seventh Term**

NURS 4130	Nursing Care of Persons in Crisis 1	4
NURS 4240	Nursing Care of Persons in Crisis 2	8
NURS 4260	Professional Development	3

Hours	15
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**Eighth Term**

NURS 4510	Population Health	4
NURS 4620	Precepted Clinical Practicum	5
NURS 4700	Nursing Care of Persons and Families with Complex Care Needs	3
NURS 4760	Professional Nursing Competency	3

Hours	15
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Total Hours	117
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## Registered Nurse - BS in Nursing

Registered nurses who graduated from an accredited associate or diploma nursing program who have an active, unrestricted, unencumbered professional licensure to practice nursing may enroll in the College of Nursing to earn a baccalaureate degree. RN graduates from diploma or non-accredited nursing programs are required to submit a portfolio for application to the RN to BSN program.

Nurses who have earned an associate or diploma degree in nursing with a 2.0 GPA and have an active unrestricted, unencumbered RN license are eligible to apply. Completion of 120 semester credits is required for graduation. Required nursing courses are online so computer and internet access, and computer literacy are essential.

## RN-BSN Program

Code	Title	Hours
NURS 4100	Transition to BSN Practice	3
NURS 4110	Applied Health Assessment Across the Lifespan	3
NURS 4300	Informatics in Nursing	2
NURS 4340	Population Focused Care	5
NURS 4360	Theory and Collaborative Practice	3
NURS 4370	Health Promotion and Wellness Across the Lifespan	3
NURS 4400	Quality and Safety in Nursing	2
NURS 4500	Leadership and Professional Development	3
NURS 4520	Pathopharmacology for the Practicing RN	3
NURS 4610	Translating Evidence for Nursing Practice	3

Total Hours	30
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## RN - BACHELOR OF SCIENCE in NURSING

### UToledo Core requirements

**English Composition I** 3 credit hours

**English Composition II** 3 credit hours

**Math 2600 Statistics** 3 credit hours

[Pre-requisite: Math 1200 or Placement Test]

**Natural Sciences** (6 credit hours)

[two courses, one must include (1) laboratory; no more than one course from any discipline]

**Multicultural U.S. Diversity** (3 credit hours)

**Multicultural Non-U.S. Diversity** (3 credit hours)

**Social Science** (6 credit hours)

[no more than one course from any discipline]

**Arts and Humanities** (6 credit hours)

[no more than one course from any discipline]

In addition to the above courses, students should select as many additional courses from Math, Humanities, Social Sciences, Multicultural or Natural Sciences to fulfill the minimum core curriculum requirement of 36 credit hours. Additional credit hours may be necessary to achieve the **120 credit hours required for graduation.**

Students are required to successfully complete 120 credit hours with an overall grade point average of 2.0 or higher

- The baccalaureate degree program in nursing at University of Toledo Consortium (Consortium of University of Toledo and Bowling Green State University) is accredited by the Commission on Collegiate Nursing Education (<http://www.ccnaccreditation.org>). Additionally, the master's degree program in nursing, the doctor of nursing practice program and the post-graduate APRN certificate program at University of Toledo are accredited by the Commission on Collegiate Nursing Education (<http://www.ccnaccreditation.org>).
- The minimum GPA to apply is a 2.0



**Note: An additional 30 hours must be taken at the 3000-4000 level**

**Nursing courses are offered in a traditional online or Competency Based Education (CBE) online format.**

*Below is a sample plan of study. Consult your degree audit for your program requirements.*

Course	Title	Hours
<b>First Term</b>		
NURS 4100	Transition to BSN Practice	3
NURS 4110	Applied Health Assessment Across the Lifespan	3
NURS 4360	Theory and Collaborative Practice	3
NURS 4370	Health Promotion and Wellness Across the Lifespan	3
NURS 4610	Translating Evidence for Nursing Practice	3
Hours		15
<b>Second Term</b>		
NURS 4300	Informatics in Nursing	2
NURS 4340	Population Focused Care	5
NURS 4400	Quality and Safety in Nursing	2
NURS 4500	Leadership and Professional Development	3
Hours		12
<b>Third Term</b>		
NURS 4520	Pathopharmacology for the Practicing RN	3
Hours		3
Total Hours		30

## Accreditation

The baccalaureate degree program in nursing at University of Toledo Consortium (Consortium of University of Toledo and Bowling Green State University), is accredited by the Commission on Collegiate Nursing Education (<http://www.ccneaccreditation.org>). Additionally, the master's degree program in nursing, the doctor of nursing practice program and the post-graduate APRN certificate program at University of Toledo are accredited by the Commission on Collegiate Nursing Education (<http://www.ccneaccreditation.org>).

### Approval

The Bachelor of Science in Nursing Program has full approval by the Ohio Board of Nursing.

## Academic Policies

Refer to the **University Undergraduate Academic Policies** (<http://www.utoledo.edu/policies>) that apply to all students. In case of conflicting policies, the stricter policies will apply (<http://www.utoledo.edu/policies/>).

LIST OF UNDERGRADUATE ACADEMIC POLICIES found at the above web address.

3364-71-01\_Academic Standing  
3364-71-02\_Enrollment status: full time, part time, and audit

3364-71-03\_Class Rank  
3364-71-04 Academic dishonesty  
3364-71-05 Academic Grievance  
3364-71-06 Academic forgiveness  
3364-71-07 Repeating a course and calculating GPA  
3364-71-08 Adding and/or dropping a Course  
3364-71-09 Dual Degrees  
3364-71-10 Residency requirement for a degree  
3364-71-11 Grades and grading  
3364-71-12 Priority registration  
3364-71-13 Graduation with honors distinction; Dean's list; President's list  
3364-71-14 Missed class policy  
3364-71-15 Confidentiality of student records (FERPA)  
3364-71-16 Administrative adjustment for extenuating circumstances  
3364-71-17 Credit for prior learning  
3364-71-18 Veteran and service members support and assistance  
3364-71-19 Posthumous degree awards  
3364-71-20 International baccalaureate diploma  
3364-71-21 Diploma replacement  
3364-71-22 Semester academic calendar and academic year  
3364-71-23 Academic credit hour

## Technical Standards

All students applying to the College of Nursing are held to the same technical standards.

Technical standards are intended to constitute an objective measure of a qualified applicant's ability to meet the program performance requirements.

Standards	Examples
Critical thinking ability for effective clinical reasoning and clinical judgment consistent with level of educational preparation	<ul style="list-style-type: none"> <li>Identification of cause/effect relationships in clinical situations</li> </ul>
	<ul style="list-style-type: none"> <li>Use of the scientific method in the development of patient care plans</li> </ul>
	<ul style="list-style-type: none"> <li>Evaluation of the effectiveness of nursing interventions</li> </ul>
Interpersonal skills sufficient for professional interactions with a diverse population of individuals, families and groups	<ul style="list-style-type: none"> <li>Establishment of rapport with patients/clients and colleagues</li> </ul>
	<ul style="list-style-type: none"> <li>Capacity to engage in successful conflict resolution</li> </ul>
Effective and sufficient communication to facilitate professional interaction	<ul style="list-style-type: none"> <li>Explanation of treatment procedures, initiation of health teaching.</li> </ul>
	<ul style="list-style-type: none"> <li>Documentation and interpretation of nursing actions and patient/client responses</li> </ul>

Abilities sufficient for movement in various health care environments.	<ul style="list-style-type: none"> <li>• Movement about patient's room, work spaces and service areas</li> </ul>
Gross and fine motor abilities sufficient for providing safe, effective nursing care	<ul style="list-style-type: none"> <li>• Calibration and use of equipment</li> </ul>
	<ul style="list-style-type: none"> <li>• Lift or support at least 50 pounds</li> </ul>
Ability sufficient to monitor and assess health needs	<ul style="list-style-type: none"> <li>• Ability to respond to monitoring device alarm and other emergency signals</li> </ul>
	<ul style="list-style-type: none"> <li>• Ability to perform physical assessment</li> </ul>
	<ul style="list-style-type: none"> <li>• Ability to determine patient's condition and responses to treatments</li> </ul>

## Matriculation Requirements

### BSN Program

Students offered admission to the College of Nursing must satisfactorily complete prerequisite courses with a grade of "C" or higher, before entering the upper division nursing program.

### RN-BSN Program

Students offered admission to the College of Nursing must satisfactorily complete prerequisite courses with a grade of "C" or higher before entering the upper division nursing program.

## Admission Policies

Acceptance into upper division nursing programs is a separate competitive process. Qualifications for upper division admission include satisfactory completion of prerequisite courses and all other requirements stated in this catalog. The requirements apply equally to full-time, part-time and transfer students.

### Pre-Nursing

Admission to the College of Nursing as a pre-licensure student requires a high school GPA of 2.75 or higher on a 4.0 scale and an ACT of 19 or higher or SAT of 990 or higher. Students enroll in pre-nursing courses based on placement test outcomes. Admission as a pre-nursing student does not guarantee acceptance into BSN or RN-BSN program.

### Baccalaureate Program

#### Pre-Licensure Track

Admission to the upper division pre-licensure track is competitive and based on a cumulative GPA. A minimum cumulative GPA of 3.0 on a 4.0 scale is required to apply. Satisfactory completion of all prerequisite courses with a grade of "C" or higher must be achieved prior to beginning the upper division. Academic progression may be considered in the admission process. Because the number of seats available for starting

upper division study each semester is limited; students are encouraged to maintain a cumulative GPA above 3.0.

Nursing advisors will assist students to determine the semester for application to the major. Prerequisite courses must be completed prior to beginning nursing major. Application deadlines are subject to change: please check with nursing advisors.

Application to the major will include the higher education cumulative GPA without benefit of grade deletion. This means that a GPA will include the first grade earned for the course as well as the grade earned for a repeated course. Grades from all college courses determine GPA.

## RN-BSN Track

Registered nurses who graduated from an accredited associate or diploma nursing program who have an active, unrestricted, unencumbered professional licensure to practice nursing may enroll in the College of Nursing to earn a baccalaureate degree. RN graduates from diploma or non-accredited nursing programs are required to submit a portfolio for application to the nursing major. Students complete university core courses and nursing prerequisites, and then apply for admission to the upper division program. A minimum cumulative GPA of 2.0 on a 4.0 scale and grades of "C" or higher in all course work is required. Transfer credit evaluation determines the number of credits needed to meet the graduation requirement. A minimum of 30 hours must be taken in the major.

Nursing advisors will assist students to determine semester for application to the major. Applications are not processed if missing transcripts documenting completion of prerequisite courses are missing. Application deadlines are subject to change: please check with nursing advisors.

## Transfer Students

Credit earned at other institutions may apply toward a degree in the College of Nursing. To be eligible for transfer, pre-licensure students need to have earned a minimum cumulative GPA of 2.75 on a 4.0 scale. To be eligible for transfer into the RN-BSN track, students must have an active unrestricted, unencumbered RN license, and a minimum cumulative GPA of 2.0 on a 4.0 scale. Achieving the minimum GPA does not guarantee placement into nursing courses.

Students with transfer credit are expected to fulfill all University and College of Nursing requirements for a degree as specified in the catalog for the year in which they are admitted to the University. Not all credit that transfers to The University of Toledo will apply toward a degree in the College of Nursing.

Transferability of previously completed nursing courses is determined by the College of Nursing after the student submits official transcripts from all colleges and universities attended. In most cases, the student is expected to provide the Baccalaureate Program Director with syllabi, course packs or workbooks for assessment of congruence with College of Nursing courses. Evaluation must be completed before matriculation into the major and is applicable only for the semester offered admission.

Students who transfer from other institutions must take at least 30 semester hours at The University of Toledo; transfer into the College of Nursing may require more than 30 semester hours of work in the major,

regardless of the number of hours transferred. Official transcripts of records from all schools previously attended must be on file with the University of Toledo before the student will be permitted to register.

Transferology is a multi-state transfer information system, which shows course equivalencies between public and private colleges and universities.

## Change of College

Students wishing to apply to the pre-licensure track must be in good standing with a cumulative GPA of 2.75 and 12 graded semester hours. Students wishing to apply to the RN-BSN track must be in good academic standing with a cumulative GPA of 2.0 and 12 graded semester hours. Students should make an appointment with a nursing advisor to discuss transfer requirements and have an academic record review. All college requirements, including core requirements, prerequisites, and minimum cumulative grade point average must be fulfilled as specified in the catalog year for the semester in which the student changes into the College of Nursing.

## Readmission

Students who are accepted into the Upper Division, then decline, drop, or withdraw must reapply for admission to the major. Students dismissed from the nursing program are not eligible for readmission to the nursing major.

Students who are readmitted must comply with existing university and CON requirements at the time of readmission. Absence of one academic year for any reason may require auditing previously passed nursing courses and satisfactory performance of skills to assure current clinical competency. Pre-licensure BSN students have 3 academic years (9 consecutive semesters to complete the program from the semester of matriculation of the nursing major) to complete the upper division component courses in the nursing major. RN-BSN students have 6 academic years from the semester of matriculation to complete the upper division components courses in the nursing major. The student may petition for up to a 1 academic year extension by completing the Request for Extension-undergraduate form. There is no limit on the number of times a student can repeat a NURS course so long as the courses in the major are completed in the specified timeframes.

## Academic Performance Standards Upper Division Nursing

Once admitted to the upper division, The College of Nursing defines "good academic standing" as maintaining a cumulative GPA of 2.0 or higher and achieving a GPA of at least 2.0 each semester.

A grade below "C" (2.0 on a 4.0 scale) is not considered a passing grade for the major. The course must be repeated with an earned grade of "C" or higher (a grade of C- is not acceptable). A UT student who has retaken a course may petition to have a grade excluded from UT GPA computation in accordance with the Repeating a Course and Calculating GPA Policy. BGSU students will follow BGSU policy regarding GPA calculation.

The student is responsible for maintaining professional standards of conduct and providing safe, effective care while enrolled in the program.

Probation, suspension, and dismissal policies apply to full-time and part-time students. In all matters, the Dean's decision is final.

## Academic Misconduct

Nursing students are expected to maintain high standards of behavior. Cheating, lying, stealing, failure to report, unauthorized replication of tests, and plagiarism are not tolerated and may lead to dismissal from the program. Non-adherence to testing policies and procedures results in a grade of zero for the test and possible course failure. Dismissal from the College of Nursing occurs with major violation of academic standards. See the Undergraduate Student Handbook for discussion of academic misconduct.

## Academic Probation

A pre-nursing student who fails to achieve a semester GPA of 2.0 at the end of any semester is automatically placed on probation and must meet with a nursing advisor to complete a Conditional Enrollment Form. An advising hold will be placed on the student's account for failure to meet with a nursing advisor to complete the Conditional Enrollment Form. The student is removed from probation if the subsequent semester GPA is 2.0 or higher.

A Student Admission Retention Progression (SARP) referral is completed by the faculty for students in the nursing major for unsatisfactory academic or clinical/lab performance. Adherence to faculty recommendations for improvement and achievement of performance standards by end of the semester is expected. Inability to meet clinical/lab expectations results in failure of the nursing course.

## Academic Suspension

The College of Nursing adheres to the University of Toledo Academic Policies. Students must be given a minimum of one semester on probation before being subject to suspension. A student is subject to academic suspension if he/she falls below the minimum requirements or fails to make sufficient progress toward attainment of the degree.

Undergraduate students serving a suspension will not be allowed to take any courses at the University of Toledo. After serving the suspension term, suspended students may petition for readmission to the degree program from which they were suspended. If a suspended student takes courses at another institution and wishes to petition for readmission to the University following the term of their suspension, then they must successfully petition for readmission and meet the transfer student admission requirements for the degree program in which they wish to continue their studies. UT Policy - Academic Standing/Suspension (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-01%20Academic%20standing.pdf>).

A suspended student must submit an appeal in writing for readmission to the Associate Dean of Academic Affairs in the College of Nursing. Appeals must be received at least one month prior to the beginning of the academic term.

Students suspended for a second time cannot enroll at UT for at least one year and must meet with the program director prior to re-enrollment.

## Dismissal

Administrative dismissal may occur when a student is in noncompliance with health, immunization, BCLS or background check.

A student can be dismissed for violating academic honesty standards (as described in this catalog), unsafe patient care, and unprofessional conduct (patterns of behavior that are inappropriate) identified in the National Student Nurses Association Guidelines at [www.nсна.org](http://www.nсна.org) (<http://www.nсна.org>), or American Nurses Association Code of Ethics, at [www.nursingworld.org](http://www.nursingworld.org) (<http://www.nursingworld.org>) for the Ohio Board of Nursing Rules and Law at [www.nursing.ohio.gov](http://www.nursing.ohio.gov) (<http://www.nursing.ohio.gov>).

Conviction of a misdemeanor or felony that prohibits licensure can result in dismissal. Violation of federal HIPAA standards are also grounds for dismissal.

Students dismissed are not eligible for readmission to the College of Nursing.

## College of Nursing Grading Scale

The following grading scales apply to nursing courses. The minimum acceptable grade for nursing (NURS) courses is "C". Students are required to earn a passing grade for both theory and clinical in order to pass a nursing course. Failure of either theory or clinical requires retaking the entire course.

**BSN and RN-BSN:** A (100-93), B (92-85), C (84-76), D (75-68), F (67 or below)

## Honors College

The College of Nursing offers an Honors program for eligible students as a part of the Jesup Scott Honors College limited to academically talented students. Students entering directly from high school are considered based on a review of application materials, which include a high school transcript, an application essay, leadership and/or work experience, and ACT or SAT scores. Students with an ACT composite score of 25 or higher (SAT composite of 1250 or higher) and a high school GPA of 3.5 or higher are encouraged to apply.

In order to receive the Honors medallion at graduation, Nursing students must complete all requirements of the Nursing program. Honors students complete a minimum of 27 semester hours of Honors courses, with at least 12 semester hours in the nursing upper division (3000 level and above). All Nursing Honors students must take the following JSCH courses for a total of 15 credit hours:

- HON 1010 Ideas and Society (3 credit hours),
- HON 1020 Ideas and Innovation (3 credit hours)
- HON 2010 Multicultural Toledo (3 credit hours)
- HON 3010 Community Engagement (3 credit hours)
- (HON 4950 or HON 4960) Honors Seminar (3 credit hours);
- A honors thesis or project supervised by a faculty member in the major is required

Honors students must earn a minimum overall cumulative UT GPA of 3.3 and minimum 3.3 GPA in nursing coursework to ensure good standing.

## LATIN Honors

The University of Toledo will include all course work taken at other institutions of higher education in the calculation to determine if a student will graduate with Latin honors; no student will be awarded a level of honors above that indicated by The University of Toledo cumulative GPA. The University of Toledo requires a minimum of 30 semester hours of standard letter-graded courses in the major in order to qualify for graduation with Latin honors.

## Student Responsibilities

### Plan of Study

The student is responsible for registering for correct courses in their nursing plan of study each semester and for fulfilling all degree requirements. Changes to a student's plan of study once admitted to the upper division due to course failures or leaves of absence must be approved by the program director.

### Transportation

Students are responsible for transportation to class and clinical settings for participation in course activities. Because clinical sites are throughout Northern Ohio, and Southeastern Michigan, students are encouraged to talk with others in the assigned clinical group about carpooling.

The university provides bus transportation between Main Campus and Health Science Campus. Students can obtain schedules from the university website or the Transportation Office.

## Criminal Records Check

Students are required to authorize The University of Toledo to obtain criminal record checks (i.e., BCII and FBI) and are responsible for fingerprinting expenses. Students must declare and document misdemeanor and/or felony offenses that occur prior to admission in the nursing program and/or during program progression. Convictions may result in denial of admission to the program or dismissal after matriculation. Reports must be sent directly to the Undergraduate Program office. Duplicate reports from places of employment or other sources are not acceptable as report results must be current with matriculation.

## Clinical Agency Requirements

Students must meet health and safety requirements based on agency, local, state and federal government mandates. Students are responsible for the cost of meeting these obligations. Documentation must be submitted at least six weeks before a semester begins.

## Physical Examination

"Fit and free for duty" statements are documented on the College of Nursing health form every year. The physical examination documentation cannot expire during the semester.



## Proof of Immunity

All students are required to submit antibody lab reports as proof of immunity for hepatitis B, rubella, rubeola, varicella, and mumps. Immunization does not provide the proof of immunity required by the clinical agencies. The Hepatitis B surface antibody is required 2 months after completing the series of Hepatitis B vaccine. Documentation of tetanus and pertussis immunization within the past ten years is required. Other vaccinations may be required as dictated by CDC guidelines.

## PPD

A two-step PPD is required before starting nursing courses, followed by an annual PPD. Students with a history of positive PPD must obtain annual healthcare provider documentation of "free of active disease" statement on the College of Nursing Physical and PPD form. Students with active disease must obtain medical intervention and are limited in clinical experiences according to agency policy.

## Flu Shot

An influenza vaccine is required annually.

## TRAINING

HIPAA, Safety, and Diversity training are required by the College of Nursing before clinical begins, along with an annual review of regulations and updates.

Documentation of completion of American Heart Association Basic Life Support for Healthcare Providers is required before clinical starts. Cards cannot expire during the semester.

## Insurance

Students in the College of Nursing are required to maintain healthcare insurance. UT students will have the charge for health insurance placed on their account. If the student has health insurance that is equivalent to or exceeds the health insurance offered by the University, an online waiver process may be completed. If the UT student does not complete the online waiver process within the specified deadline, the health insurance will remain on the student's account.

Upper Division Nursing Policy 3364-30-05 Student Health Insurance

## ADDITIONAL INFORMATION

Clinical agencies have the right to deny a student access to the facility when requirements are unmet. Students who fail to provide documentation of health, immunization, and BLS by established deadlines may be administratively dismissed for the semester.

Students who experience exposure or injury or an emergency healthcare situation during clinical must follow agency protocol to obtain treatment at the agency if available, but are responsible for any costs incurred. Follow-up with University Student Health Services is required.

Students who experience acute illness or injury must provide the College of Nursing with healthcare provider documentation of release to return to class and clinical. Students will be evaluated individually for ability to provide safe patient care and compliance with clinical facility regulations. Students experiencing pregnancy delivery must provide healthcare

provider approval to return/continue in clinical; clearance to return to clinical is submitted before restarting any clinical activity.

## Academic Advising

Academic advising for new, transfer and continuing students is available on the Main Campus. While ultimate responsibility for educational decisions rests with the student, advisors can assist the student to identify alternatives and potential consequences; help select courses to meet University core and college requirements; and facilitate student evaluation of academic progress.

## Transcripts and Degree Audit Reports

A transcript is a chronological list of academic courses that includes all courses attempted and grades earned. The transcript does not indicate how specific courses apply to University and College of Nursing requirements. Developmental and technical courses are not counted toward minimum credits for degrees, but may appear on transcripts. The Degree Audit Reporting System is an automated record that contains all of a student's graduation requirements and tracks that student's progress toward meeting those requirements. Degree audits are available to students upon request from the Office of Student Retention and Academic Success and online through the myUT portal Student Self-Service. Students are encouraged to keep current degree audits for their personal use and to discuss their degree audits with their academic advisors. The Degree Audit in Banner details all requirements applicable to a student's academic program and identifies requirements remaining when all registered courses are completed. Students access the transcript and Banner through myUT portal.

Official transcripts for all post high school study must be provided by the student before matriculation into the College of Nursing. Transcripts will be reviewed, with degree and courses accepted for transfer posted to the student's academic record. Students who do not provide official transcripts cannot register for nursing courses. Official transcripts are provided directly to The University of Toledo from the issuing institution; "issued to student" transcripts are not considered as official transcripts.

## Sequence of Courses

There is a prescribed sequence of courses for each program. Developmental courses may be required on the basis of placement testing and/or high school deficiencies. Students should meet with a nursing advisor to review program requirements to ensure completion in the appropriate sequence and consistent with their plan of study. Student use of Degree Audit to track progress is highly recommended. All requirements must be fulfilled as specified in the catalog for the year in which the student begins nursing courses.

## Plan of Study

Students consult with the Nursing Advisor to develop a plan of study for program completion. BSN students follow the required sequence of courses as stated in this catalog. Courses in each semester of the nursing major, for the basic BSN program, are co-requisite to one another and pre-requisite to the next semester. Therefore, students who may need to make changes to their plans of study are required to meet with the BSN program director and nursing advisor prior to taking any action. RN-BSN student enrollment is on a full-time or part-time basis, with one or more courses each semester. A plan of study is developed in consultation



with the Nursing Advisor, with a signed copy submitted to the College of Nursing Undergraduate Program office. Students are expected to progress according to their plan of study. Plan of study changes must be discussed with the nursing advisor and program director.

## GPA Recalculation for Repeated Courses

Application to the major for BSN students will include the higher education cumulative GPA without benefit of grade deletion. This means that the GPA will include the first grade earned for the course as well as the grade earned for a repeated course.

## Withdraw, Drop and Not Reported Grade Policy

Risk for loss of financial aid may occur with excessive hours of W, DR and NR grades. Students who transfer into the College of Nursing from another college at The University of Toledo retain the number of W, DR and NR grades accumulated in previous work. Failing grades as a result of academic dishonesty will remain in the student academic record.

## Academic Due Process and Appeal of Final Course Grade

The University of Toledo, College of Nursing upholds the principles of fairness and integrity and equitable application of the course syllabi, College of Nursing policies and procedures for student evaluation and the grading process for the assignment of a final grade.

The policy 3364.82-05 for academic due process is found on the University policies website: [http://www.utoledo.edu/policies/academic/college\\_of\\_nursing/pdfs/3364\\_82\\_05.pdf](http://www.utoledo.edu/policies/academic/college_of_nursing/pdfs/3364_82_05.pdf).

## Professional Licensure

The University of Toledo (UT) programs leading to licensure and/or advanced practice certification/endorsement, whether delivered online or face-to-face, satisfy the academic requirements for those credentials set forth by the State of Ohio.

Requirements for licensure and/or advanced practice certification/endorsement eligibility vary from one profession to another and from state to state. For students who wish to practice in a state other than Ohio, please contact the program director/advisor to discuss if you will need to satisfy additional requirements to practice in that state. National Council of State Boards of Nursing (<https://www.ncsbn.org/contact-bon.htm>).

Application to be a registered nurse is a separate procedure based on the state of initial licensure. Students are responsible to apply for licensure in Ohio. A verification of program completion is provided directly to the Ohio Board of Nursing after the university has cleared the student as having met all degree requirements. Students licensing out-of-state are responsible to consult with the appropriate State Board of Nursing and must supply all required paperwork to the College of Nursing for processing.

## Program Requirements

### Degree Requirements

The College of Nursing (CON) reserves the right to change any provision, regulation and requirement. Changes will be publicized through appropriate channels. These changes will be binding on the date they are approved by faculty action. Courses taken at other nursing programs may not substitute for professional courses. Only students admitted to the nursing program are allowed to take NURS courses.

### Residency Requirement

Students transferring from other institutions must earn at least 30 hours of credit at The University of Toledo; at least 30 of these must be in the nursing major. Full-time students must take the last semester, and part-time students the last 12 hours, in residence, unless alternative arrangements have been made in advance with the Baccalaureate Program Director of the College of Nursing.

### Credit Hours

Students must complete a minimum of 120 hours of course work that includes University core requirements and all required course work in the major. A minimum of 64 hours must be taken at the 2000 to 4000 level, and a minimum of 30 hours must be taken at the 3000 to 4000 level. Students are encouraged to use Degree Audit to review remaining requirements and meet with the nursing advisor before every registration to assess progress toward completion of requirements. If a student completes basic and required courses in the major in fewer than 120 hours, the student must successfully complete elective courses to meet the total of 120 hours.

### Credit Restrictions

Total earned hours shown on a student's transcript may not all be applicable to the minimum of 120 credits required for a degree. Students with entrance deficiencies in mathematics and required courses or choose to take developmental courses will need to complete additional hours. No more than two hours in physical education or recreation courses at the 1000 level will apply toward the degree. Students will not receive credit for repeated courses (taking the same course twice), whether taken at The University of Toledo or elsewhere. The college reserves the right to deny credit for any course (including SKLS courses) and blanket technical credit not applicable to the nursing program.

### University Core Curriculum Requirements

Nursing students are required to complete the University core curriculum requirements that comprise the University Core Curriculum. The courses include English composition, humanities/fine arts, social sciences, natural sciences and mathematics, and multicultural studies. Students are placed into chemistry and mathematics courses by ACT scores or placement tests in those subjects; consult with the Nursing Advisor for specific details.

### Orientation (NURS 1000)

All first-year pre-nursing students must successfully pass NURS 1000.

# Faculty

**Larissa Barclay, DNP, NP-C, PMHNP-BC, CWCN, Associate Professor**

**Susan Batten, PhD, RN, Associate Professor**

**Mary Ann Bell, PhD, MSN, RNC, Assistant Professor**

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**Collen Quinlan, PhD, MS, CNP, MSN APRN Director, Associate Professor**

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**Susan Rice, PhD, RN, CPNP, CNS, Professor**

**Angela Scardina, MSN, RN, CNP, Instructor**

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**Gregory Shannon, 8/21/2017, Assistant Professor, AAS, Owens Community College; BSN, Lourdes University; MSN, DNP, The University of Toledo**

**Katherine Sink,, 9/24/1984, Professor, BSN, Medical College of Virginia; MEd, The University of Toledo; MSN, Medical College of Ohio; PhD, University of Michigan**

**Susan Sochacki, 1/2/2003, Director of Pre-Licensure Programs, Associate Professor, BSN, The University of Toledo; MSN, Medical College of Ohio; PhD, Bowling Green State University**

**Colleen Taylor, PhD, RN, FNP-BC, Assistant Professor**

**M. Eileen Walsh, 1/5/2009, Professor, BSN, Medical College of Ohio; MSN, Case Western Reserve University; PhD, The University of Toledo**

**Marilynne Wood, 8/15/2007, Director RN-BSN Program, Professor, BSN, MSN, Medical College of Ohio; PhD, The University of Toledo**

**Dawn Woolford, MSN, RN, Instructor**

# COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

## Undergraduate Catalog

Main and Health Science Campuses  
Wolfe Hall 1227 (MC)  
419.530.2010  
Frederic and Mary Wolfe Center 155 (HSC)  
419.383.1904  
pharmacy@utoledo.edu

## Mission Statement

The mission of the College of Pharmacy and Pharmaceutical Sciences (CPPS) is to educate students to become pharmacists and pharmaceutical scientists, while advancing pharmaceutical knowledge. Guiding principles are personal integrity, respect for humanity and human diversity, and professionalism.

## Contacts

### Administration

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## Academic Departments

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### Department of Pharmacology and Experimental Therapeutics

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**Diane M. Cappelletty, Chair**  
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## Degrees/Programs Offered

The CPPS prepares students for careers in the pharmaceutical sciences and the profession of pharmacy. Those who do not seek professional licensure may work in the medical, legal and biomedical professions. Those who enter the profession of pharmacy provide direct patient care services.

The curriculum as outlined in the current catalog is subject to modifications with immediate implementation to keep pace with changing trends in pharmaceutical education and in accordance with accreditation standards. Pre-Professional and Professional division curricular requirements for the degree programs will be those listed in the catalog for the years in which the student enters the respective division. The CPPS reserves the right to change its policies and procedures at any time. These changes will be binding on the date they are approved by faculty action.

## Doctor of Pharmacy – Pharmacy Licensure Program (p. 442)

The program of study leading to pharmacy licensure is the entry-level doctor of pharmacy (Pharm.D. (p. 442)). Students seeking a degree that will lead to pharmacy licensure will need to complete two years of prerequisite course work prior to matriculation into the professional division of the CPPS. Following the completion of a core set of required courses, students will apply to the professional division. Admission to the professional division of the college is competitive.

## Pharmaceutical Sciences

The CPPS offers a four-year bachelor of science in pharmaceutical sciences (B.S.P.S.) degree to prepare students for a variety of careers in the pharmaceutical and biotechnological industries. Students seeking the degree will need to complete two years of course work prior to matriculation into the professional division of the CPPS. Following the completion of a core set of required courses, students will either progress (UT pre-professional students) or apply (transfer students) to the professional division.

- BSPS in Cosmetic Science and Formulation Design (PCOS) (p. 454)
- BSPS in Medicinal Chemistry (MBC) (p. 447)
- BSPS in Pharmaceutics (PHAR) (p. 456)
- BSPS in Pharmacology and Toxicology (PTOX) (p. 462)
- BSPS in Pharmacy Administration (PHAM) (p. 458)
- BSPS/MS in Law with Regulatory Compliance - Early Admission/Bridge Program (p. 464)
- Cosmetic Science Minor (p. 459)

## Pharmacy Graduate Degree Programs

The CPPS offers several graduate degrees in the pharmaceutical sciences – the Master of Science in Pharmaceutical Sciences degree with program options in:

- pharmacology/toxicology, industrial pharmacy and health outcomes and socioeconomic sciences;
- the Master of Science in Medicinal Chemistry degree;
- the doctor of philosophy in experimental therapeutics, and
- the doctor of philosophy in medicinal chemistry degree.

Students should contact the CPPS for admission and curricular requirements.

## Accreditation

The CPPS holds membership in the American Association of Colleges of Pharmacy, and is recognized as an institution in good standing by the Ohio State Board of Pharmacy. The Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education (ACPE).

## Admission to the College

### Non-Discrimination Policy

The University of Toledo is committed to a policy of equal opportunity in education, employment, membership and contracts, and no

differentiation will be made based on race, color, religion, sex, age, national origin, sexual orientation, veteran status or the presence of a disability. The University will take affirmative action as required by federal or state law.

### Direct-from-High School Students

The minimum criteria for Direct-from-High School students are:

- a high school grade point average (GPA) of 2.50 –OR–
- a composite ACT of 20 –OR–
- SAT 1030 (test dates March 2016 and later).

All undergraduate students in the CPPS will be considered pre-professional division students until admitted to the professional divisions of the Pharm.D. or B.S.P.S. programs. For the entry-level Pharm.D. and the four-year B.S.P.S. programs, the CPPS limits student enrollment into the professional division (third year or P1 year) in accordance with its facilities.

## Contingent Admission

Academically exceptional high school graduates may be offered contingent admission to the professional division of the Pharm.D. or the B.S.P.S. programs. Automatic admission to the P1 year of the curriculum will be contingent on successful completion of the pre-professional curriculum, while meeting specific standards.

## Early Admission

Academically exceptional first-year students who are enrolled at UT may be offered early admission to the professional division of the Pharm.D. program. Automatic admission to the P1 year will be contingent on successful completion of the pre-professional curriculum while meeting specific standards.

## Change-of-College Students

In order for a student to change from another college within The University of Toledo to the CPPS, the student must have a UT cumulative grade point average (GPA) of at least 2.7 and be in good standing at the University.

## Transfer Students

In order for a student to transfer from other Ohio universities into the pre-professional division of any of the baccalaureate programs of the CPPS, the student must have a higher education cumulative grade point average (GPA) of at least 2.7 (this is based on all letter grades attained at all institutions of higher learning and uses the point average scale of A equaling 4 points), be in good standing at the university, and be eligible to return. The student may be required to take placement tests in chemistry and/or math. Students with course work from non-Ohio institutions will be evaluated on an individual basis. The student may be asked to supply course descriptions and syllabi so that course equivalencies can be determined.

### • Pharm.D.

Transfer students who wish to apply to the professional division of the Pharm.D. program are required to submit a PharmCAS application, UT CPPS supplemental application, and meet all

application and matriculation qualifications. Please see the UT CPPS PharmCAS web directory or contact an academic adviser for more information.

#### • BSPS

Transfer students wishing to enroll in the BSPS program may be eligible to apply directly into the professional division. Contact an academic adviser for more information.

## GED

Applicants with GED scores equal to or greater than 170 for each of the four (4) subject scores will be eligible for admission into the CPPS.

## College Level Examination Program Credit (CLEP)

The CPPS grants up to a maximum of 30 semester CLEP credits. Credits earned in the natural sciences and mathematics section of the CLEP examination will count toward the degree as free electives, but do not replace the requirement for any specific course in biology, chemistry, physics or mathematics. Credits earned with other sections of the CLEP examination will count only toward meeting other core requirements.

## Credit by Exam

Refer to the University General Academic Policies for Credit by Exam policies that apply to all students.

## TOEFL Requirements

#### • Pharm.D.

All international students are required to submit an internet-based TOEFL meeting the following preferred minimum criteria prior to admission into the Pharm.D. Program:

- Preferred minimum total score of 80 iBT (Traditional Pathway), **or**
- Required minimum total score of 80 iBT (Early Admission and Contingent Admission), **and**
- Preferred minimum score of 18 in each of the four sub-categories of the iBT (reading, listening, speaking, and writing)

#### • Pre-professional & BSPS

International students entering the Pre-professional or BSPS Programs will follow The University of Toledo's TOEFL requirements.

## Entrance into the Professional Division Programs

There are many avenues to enter the Professional Division programs. Please be sure to follow the specific instructions for the program and year in which you will enter the professional division. Contact a pre-professional division advisor for guidance as needed. The only pharmacy courses a pre-professional student is permitted to take through the CPPS

are the following until final admission to the professional divisions is achieved:

Code	Title	Hours
PHPR 1000	Orientation	1
PHPR 2040	Introduction to Cosmetic Science	1
PHCL 2220	Drugs, Medicine And Society	3
PHCL 2600	Functional Anatomy And Pathophysiology I	4
PHCL 2610	Introductory Physiology	3
PHCL 2620	Functional Anatomy And Pathophysiology II	4
PHCL 2900	Pharmacology Research Introduction	1-3
MBC 2960	Undergraduate Research	1-6

## General Criteria for Progression to the Professional Division of the BSPS Program

Eligible UT or transfer students may progress directly into the professional division of the BSPS program. Students interested in declaring a major and requesting a progression review should contact the Office of Student Affairs for details.

For final progression into the professional division, the following courses (or their equivalents) must be successfully completed:

Code	Title	Hours
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance <sup>1</sup>	1
CHEM 1230	General Chemistry I	4
CHEM 1240	General Chemistry II	4
CHEM 1280	General Chemistry Lab I <sup>1</sup>	1
CHEM 1290	General Chemistry Lab II <sup>1</sup>	1
CHEM 2410	Organic Chemistry I	3
CHEM 2420	Organic Chemistry II <sup>1</sup>	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors <sup>1</sup>	1
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors <sup>1</sup>	1
MATH 1850	Single Variable Calculus I	4
or MATH 1750	Calculus For The Life Sciences With Applications I	
and MATH 1760		
PHCL 2610	Introductory Physiology	3
or EXSC 2560	Anatomy and Physiology I	
& EXSC 2570	and Human Anatomy and Physiol II	
PHYS 1750	Introduction To Physics <sup>1</sup>	4
or PHYS 2070	General Physics I	
and PHYS 2080		
ENGL 1110	College Composition I <sup>1</sup>	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse <sup>1</sup>	3

Students must also have a minimum cumulative grade point average (GPA) of 2.7. Students with a cumulative GPA  $\geq 2.5$  but  $< 2.7$  can be



reviewed by program administrators. Decisions may be made to admit, to admit conditionally, or to deny admission until the minimum GPA is achieved.

## General Criteria for Admission to the Professional Division of the Doctor of Pharmacy Program

Success as a pharmacist requires excellence in academic performance in addition to well-developed verbal and written communication skills. Therefore, the College uses several measures to evaluate these attributes in applicants. The admissions process is based on a holistic review that is in alignment with the College mission.

The Pharmacy College Aptitude Test (PCAT) provides a standardized method of assessing the applicant's skills needed for success in a pharmacy program. Academic achievement as assessed by cumulative GPA and science GPA, as defined in the College Catalog, and communication skills, as measured by the PCAT writing score and interview, are other key components evaluated in the application review process. Although each component serves a unique purpose, none of these is a sole determinant of admission and the predictive value of all components is continually evaluated.

The PCAT is required for admission to the Pharm.D. professional division, with the exception of those contingent admit students and early admission students who have met the specified requirements to the professional division.

Students are admitted to the professional divisions for the fall semester only. The number of students who receive final acceptance into the professional divisions will be limited to the space available. Because the number of applicants usually exceeds the number of spaces available, students are admitted on the basis of the following general criteria.

## Pharm.D. Program Admission

The University of Toledo utilizes The Pharmacy College Application Service (PharmCAS), a centralized application system.

Recommendations must also be submitted as a component of the PharmCAS application. The recommendations may be from professors, employers, clergy, close family friends and health professionals (pharmacist, dentist, and physician), or others. Recommendations from relatives or University of Toledo CPPS faculty or staff are not acceptable.

In addition to the PharmCAS application, applicants must also submit a supplemental application directly to The University of Toledo CPPS through the Professional Division Admissions website. There are several pathways for application to the Pharm.D. program. They are described as follows.

### Contingent Admission (0+6):

This pathway is designed for highly qualified high school seniors applying to The University of Toledo. During their second year at UT, students continuing to meet the Contingent Admission criteria will be required to submit a PharmCAS application and supplemental application.

### Eligibility for Application

To be eligible to apply through the "Contingent Admission" pathway, the following (or their equivalents) must be completed:

- High school GPA of 3.75 or higher
- ACT composite score of 29 or higher (SAT  $\geq$  1300)
- The PCAT is NOT required to apply through the Contingent Admission pathway.

### Evaluation

Each application will be evaluated on the basis of the applicant's:

- High school GPA
- ACT composite score
- Essay
- Phone Interview

### Final Admission

For final admission into the professional division, the following (or their equivalents) must be completed:

Code	Title	Hours
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1240	General Chemistry II	4
CHEM 1280	General Chemistry Lab I	1
CHEM 1290	General Chemistry Lab II	1
CHEM 2410	Organic Chemistry I	3
CHEM 2420	Organic Chemistry II	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
MATH 1850	Single Variable Calculus I	4
or MATH 1750 (Calculus I)/MATH 1760 (Calculus II)		
MATH 2640	Statistics for Applied Science	3
or MATH 2600 Introduction To Statistics		
PHCL 2610	Introductory Physiology	3
or KINE 2560 (Anatomy and Physiology I)/KINE 2570 (Anatomy and Physiology II)		
PHYS 1750	Introduction To Physics	4
or PHYS 2070 (General Physics I)/PHYS 2080 (General Physics II)		
or PHYS 2130 (Physics-Science & Engineering Majors I)/PHYS 2140 (Physics-Science & Engineering Majors II)		
ENGL 1110	College Composition I	3
One of the following:		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	

- Science AND cumulative GPAs of 3.5 or higher in pre-professional coursework at the end of the sophomore (second year) fall semester at UT

- Semester GPA of 2.0 or higher during sophomore (second year) spring and summer semesters at UT
- Must "pass" all remaining required coursework
- Must have a valid Social Security number
- Must complete the health requirements as defined by The University of Toledo CPPS

## Early Admission (1+5)

This pathway is designed for highly qualified direct-from-high school first-year UT students who did not receive Contingent Admission (did not apply or not awarded). Early Admission applicants will be required to submit a PharmCAS application and a supplemental application.

### Eligibility for Application

To be eligible to apply through the "Early Admission" pathway, the following (or their equivalents) must be completed:

- Science AND cumulative GPAs of 3.75 or higher at the end of the first year at UT
- Applicant must be a full-time student each academic semester (Fall and Spring of first college year).
- The following required science-GPA courses and corresponding labs MUST have been taken at UT during the first year as a UT student or credit earned in high school: MATH 1850 (or MATH 1750); BIOL 2170 and BIOL 2180; CHEM 1230, CHEM 1280, CHEM 1240, AND CHEM 1290, and; PHCL 2610 (OR EXSC 2560).
- The PCAT is NOT required to apply through the Early Admission pathway.

## Evaluation

Each application will be evaluated on the basis of the applicant's:

- Cumulative GPA
- Science GPA using the following courses (only first attempt included):
  - MATH 1850 (or MATH 1750)
  - BIOL 2170
  - CHEM 1230 and CHEM 1240
  - PHCL 2610 (or EXSC 2560)
- Comprehensive communication review

## Final Admission

For final admission into the professional division, the following (or their equivalents) must be completed:

Code	Title	Hours
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1240	General Chemistry II	4
CHEM 1280	General Chemistry Lab I	1
CHEM 1290	General Chemistry Lab II	1
CHEM 2410	Organic Chemistry I	3
CHEM 2420	Organic Chemistry II	3

CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
MATH 1850	Single Variable Calculus I	4
or MATH 1750 (Calculus I)/MATH 1760 (Calculus II)		
MATH 2640	Statistics for Applied Science	3
or MATH 2600 Introduction To Statistics		
PHCL 2610	Introductory Physiology	3
or KINE 2560 (Anatomy and Physiology I)/KINE 2570 (Anatomy and Physiology II)		
PHYS 1750	Introduction To Physics	4
or PHYS 2070 (General Physics I)/ PHYS 2080 (General Physics II)		
or PHYS 2130 (Physics-Science & Engineering Majors I)/PHYS 2140 (Physics-Science & Engineering Majors II)		
ENGL 1110	College Composition I	3
One of the following:		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	

- Science AND cumulative GPAs of 3.5 or higher in sophomore fall courses
- Science AND cumulative GPAs of 3.0 or higher in sophomore spring and summer courses
- Must have a valid Social Security number
- Must complete the health requirements as defined by The University of Toledo CPPS
- Earn C or higher in the following courses which must be taken at UT or credit earned in high school: CHEM 1280, CHEM 1290, CHEM 2410, CHEM 2420, CHEM 2460 and CHEM 2470; BIOL 2180; PHYS 1750 (or PHYS 2070 and PHYS 2080 or PHYS 2130 and PHYS 2140); MATH 2640 (or MATH 2600); PHCL 2610 (EXSC 2560 and EXSC 2570)

## Traditional Admission (2+4)

This pathway is designed for any college student who meets the following admission requirements.

### Eligibility for Application

To be eligible to apply through the "Traditional Admission" pathway, the following (or their equivalents) must be completed:

- \* Completed PharmCAS application
- \* Preferred PharmCAS Science and PharmCAS cumulative undergraduate GPA of 3.0 or higher
- \* Preferred PCAT score  $\geq$  40th percentile AND writing score of 2 or higher
- \* 2 Letters of Recommendation (Evaluations)
- \* UT CPPS Supplemental Application
- \* TOEFL (International Students): Preferred total score of 80 iBT or higher AND preferred score of 18 or higher in each of the 4 sub-categories: (reading, listening, speaking and writing).

## EVALUATION

Each application will be evaluated on the basis of the applicant's:

- PharmCAS Cumulative Undergraduate GPA
- PharmCAS Science GPA
- PCAT Score(s)
- Multiple Mini Interview

## Final Admission

For final admission into the professional division, the following (or their equivalents) must be completed:

Code	Title	Hours
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
CHEM 1230	General Chemistry I	4
CHEM 1240	General Chemistry II	4
CHEM 1280	General Chemistry Lab I	1
CHEM 1290	General Chemistry Lab II	1
CHEM 2410	Organic Chemistry I	3
CHEM 2420	Organic Chemistry II	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
MATH 1850	Single Variable Calculus I	4
or MATH 1750 (Calculus I)/MATH 1760 (Calculus II)		
MATH 2640	Statistics for Applied Science	3
or MATH 2600 Introduction To Statistics		
PHCL 2610	Introductory Physiology	3
or KINE 2560 (Anatomy and Physiology I)/KINE 2570 (Anatomy and Physiology II)		
PHYS 1750	Introduction To Physics	4
or PHYS 2070 (General Physics I)/ PHYS 2080 (General Physics II)		
or PHYS 2130 (Physics-Science & Engineering Majors I)/PHYS 2140 (Physics-Science & Engineering Majors II)		
ENGL 1110	College Composition I	3
Select one of the following:		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
Minimum 2.0 GPA (cumulative and semester) for the spring and, if applicable, summer semesters		
Must have a valid Social Security number		
Must complete the health requirements as defined by The University of Toledo CPPS		

## Honors Program

The CPPS offers an Honors Program for eligible students in all of its undergraduate programs as part of the Jesup Scott Honors College (JSHC). Highly qualified students entering the University in the CPPS

will be considered for entry into honors courses and honors sections of major courses offered throughout the undergraduate curriculum. Decisions regarding entry of students into the Honors College will be made after evaluation of the honors application by the JSHC. Normally, entering students with an ACT composite score of 25 and above (or SAT equivalent), coupled with a 3.50/4.00 high school GPA, will be considered for entry into honors courses. During the first two years of study, the CPPS offers courses that orient the student toward the profession of pharmacy and the pharmaceutical sciences. Many honors students take much of their honors course work (required and elective courses) during the first two years of the curriculum.

A variety of required and elective courses also are offered with honors sections in the professional division. A specific honors seminar course and an honors thesis option are offered to fulfill the requirements for graduation with the Honors College medallion. These courses also can fulfill requirements for electives within the major.

The Bachelor of Science in Pharmaceutical Sciences with the Honors College medallion is attainable by all students who complete at least 27 semester hours of honors course work with a grade of C or better and who have a minimum cumulative GPA of 3.3. CPPS students in the JSHC honors program complete the Blue Track Honors Curriculum (with the Gold Track being optional). In the Blue Track, the following three honors courses are required: 1) HON 1010 – Ideas and Society (Humanities requirement), 2) HON 2010 – Multicultural Toledo (U.S. Multicultural and Social Sciences requirement), and 3) HON 3010 – Community Engagement. Other honors credit hours can be fulfilled by coursework in any college or department (with the exception of the thesis and seminar, which must be completed in the CPPS). In addition, five to eight hours of the 27 must be taken within the honors thesis project and honors seminar. These courses are to be taken within one department: medicinal and biological chemistry, pharmacology and experimental therapeutics, or pharmacy practice. Graduation with departmental honors is also available to students who are not members of the Honors College, but who meet departmental honors requirements. These departmental honors requirements are a GPA of 3.2 or higher and completion of eight hours of honors course work in one department, including the honors thesis and seminar.

## Student Responsibilities

### Academic and Conduct Policies

The CPPS adheres to all of The University of Toledo policies and procedures. Please refer to the UT Policy web site for additional information on academic and conduct policies governing all students enrolled at the University. In any case in which University, college and/or departmental policies conflict, the most stringent policy applies, unless waived by the college. Students should consult with the college for a complete listing of all policies and procedures specifically related to the CPPS.

Refer to the *University Undergraduate Academic Policies* (<http://www.utoledo.edu/policies>) that apply to all students.

## Attendance Requirements

Students in a professional school, as responsible individuals, are expected to attend all class meetings. The maximum number of

permissible absences in a course is at the discretion of the individual faculty member. The penalty for excessive absences will be determined by the faculty member in accordance with the University's Missed Class Policy.

## Withdrawal, GPA Recalculation and Audit Policies

Refer to the University General Academic Policies for Withdrawal, GPA Recalculation and Audit policies that apply to all students. Withdrawal from an experiential course for which a final grade has already been determined will not be permitted.

## REMEDIATION POLICY

**Remediation Philosophy** - Remediation is a sequence of events, beyond the standard course curriculum, that are designed to bring underperforming students to a level of competency expected of students at the conclusion of a course. The process of remediation should provide opportunities for students to develop and demonstrate required knowledge, skills and/or attitudes through self-directed learning and purposeful interactions with faculty. Student and faculty should both be active participants in the remediation process; however remediation is a privilege that should be earned by the student through demonstrated attendance and active participation throughout the course.

### Policy

Each course syllabus in the Doctor of Pharmacy program at the University of Toledo College of Pharmacy and Pharmaceutical Sciences must include a statement (or section) that clearly states the remediation policy for the course. This policy should be developed, written and implemented by the course director.

**Option 1: No remediation.** Faculty are not required to offer remediation opportunities to students that fail a course. However a policy to that effect must be clearly stated in the syllabus. If remediation is not offered within a course, then the student will need to repeat the course the next time it is offered.

**Option 2: Remediation.** If remediation is offered to students, a policy must be included in the syllabus that clearly states the 1) qualification criteria, 2) remediation process, 3) remediation grading, and 3) maximum remediation attempts. The final grade for students who successfully remediate a course will be no higher than a "C". If the student fails the remediation assessment(s), then the student can retake the entire course at the next offering if eligible based on academic standing. Students with a grade of "C" or better are not eligible to use remediation in an attempt to improve their grade in the course.

**Numbers of courses remediated** - The number of courses remediated by an individual student is limited to 2 per semester and 4 per academic year. The instructor must inform the Associate Dean of Academic Affairs of a student's request to remediate a course.

### Procedure

**Each course director/coordinator may develop an appropriate policy for their course, but the following suggested procedures should be considered for inclusion.**

**Qualifications:** Any student who 1) demonstrated competency in some but not all areas required for passing the course and / or earned a C- or lower grade, but not an F grade; 2) completed all coursework and exams; 3) met with instructors and followed the advice of the Early Warning process (e.g. utilized AEC resources); 4) attended class regularly; 5) adhered to all academic and professional conduct codes.

**Remediation planning:** Each course director should develop and communicate to the student an individualized remediation plan that details 1) the number of times and or hours the student is required to meet with the faculty member; 2) a list of all assignments and activities the student must complete (e.g. reviewing examinations, reviewing captured lectures, summarizing lecture notes, completing extra assignments); 3) all deadlines for remediation assignments and assessments.

**Remediation assessment:** All assessments should be designed to allow the student to demonstrate competency in areas where s/he previously failed to meet required levels of knowledge, skills and/or attitudes. The assessment format can vary widely and may include a paper and pen assessment over specific areas, a cumulative evaluation, or a presentation. Although the number of assessment attempts is left to the discretion of each course director, this expectation must be specified in the syllabus.

**Remediation Timing:** Remediation is most effective if it takes place immediately after the semester has concluded. For example, if a student qualifies for remediation of a fall course, it is most effective if it takes place during the winter break (December/January). Alternatively, if a student qualifies for remediation of a spring course, it is most effective if it takes place during the 6-8 weeks after spring semester ends.

**Student Responsibility** - It is the student's responsibility to obtain their course grade, and to inform course coordinator of intent to remediate within the course policy's stated timeframe of notification.

### Pass/No Credit (P/NC) Grade Option

Refer to the University General Academic Policies for General Academic Policies that apply to all students. P/NC grading is not available for courses taught in the CPPS. In addition to courses for which P/NC grading is used exclusively, a student may elect P/NC grading for an additional seven credit hours, excluding course work in the natural sciences and calculus. Once the petition is filed, the request is irrevocable.

## Technology Requirements

Specific computer hardware/mobile devices and software are required of CPPS students and are described in the Student Handbook.

## Personal Fitness

The emotional and psychological stability of those practicing or preparing to practice in pharmacy or the pharmaceutical sciences is considered to be very important for the proper performance of professional responsibility. The faculty of the CPPS recognizes that, if a student exhibits behavior suggesting an emotional or psychological abnormality bearing a reasonable relation to that student's ability to function competently in health-care delivery systems, experiential education, and professional employment, such behavior may present a hazard not



only to the student, but also to patients, coworkers and clients. If any behavior pattern provides reason to believe that a student's psychological or emotional state may have rendered that student incompetent or unsafe, the dean of the college shall meet with that student and attempt to resolve the situation by referral to the University Health Service, University Counseling Center and/or withdrawal from the pharmacy program.

## Ethical Responsibility

The most serious offense with which pharmacy students may become involved is the misuse of and/or dependence upon dangerous drugs. The CPPS views the admitted or proven personal abuse of such drugs, their transmittal or sale to other individuals, or the use of drug documents to illegally obtain controlled or legend drugs as unprofessional conduct, which may result in dismissal from the CPPS. In addition, boards of pharmacy may revoke the internship license and/or deny licensure for various drug offenses. Drug abuse in any form and/or misuse of drug documents must be avoided.

## APPEAL PROCEDURE FOR ACADEMIC PERFORMANCE AND DEGREE PROGRESSION FOR THE CPPS

Appeal Procedure for Academic Performance and Degree Progression (Policy 3364-83-05) ([http://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364-83-05.pdf](http://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364-83-05.pdf))

### APPEAL PROCEDURE FOR ACADEMIC PERFORMANCE AND DEGREE PROGRESSION

The Academic Performance Committee (APC) reviews and administers CPPS Academic Performance Standards, as outlined in the College's Catalog. In the case of all action taken by the APC, including probation, suspension, dismissal, and progression decisions, appeal is available to the student.

Appeal is limited to academic issues based on the following:

- A claim that the Academic Performance review and ruling process was not conducted as required by the Academic Performance policy.
- A claim that the sanction imposed is excessive for the academic performance issue.
- Information has become available that was not available at the time of the original decision.

The impact of commuting or excessive work hours will not be considered as a basis for appeal.

#### 1. Appeal Process

- a. To appeal APC decisions, the student shall formally dispute the decision in writing to the Dean of the CPPS. The letter of petition must be written in adherence to the business letter format and must include: the student's name and Rocket number, phone number, current mailing address, date, semester, decision(s) in dispute, the specific issue regarding the decision(s) in dispute, and the student's statement of appeal that specifically identifies which of the three bases for appeal are being raised. A hard copy and email copy of the written request must be received by the

Office of the Dean **by 5pm of the fifth business day** following email notification of the APC decision, or any further right to appeal is waived. Email subject line must read: "Appeal: [student name]"

- b. The Pharmacy Academic Progression Appeals Committee (PAPAC) will be convened to review the matter and advise on the dispute. The PAPAC's recommendations to the Dean are advisory. The committee will consist of the following members:
  - Associate Dean for Main Campus Student Affairs and Enrollment Management
  - Associate Dean for Health Science Campus Student Affairs and Diversity
  - Associate Dean of Graduate and Research Studies
  - At least one full-time faculty member who has been directly involved in the instruction of the student, but who was not involved in the disputed APC decision.
- c. The appeal review may include a hearing with the student. The student is permitted to have a faculty or staff member or a fellow CPPS student attend the hearing as his/her advisor, however these individuals may not participate in the proceedings. Legal counsel will not be permitted. Both the student and the APC will be permitted to make a statement and present any information pertinent to the matter before the Dean and/or PAPAC.
- d. The Dean will review all applicable evidence presented by the PAPAC, the student, and the APC and any other requested information.
- e. After completing such review, the Dean may ask for a meeting with the student
- f. The Dean will provide to the student a written notification of the decision on the appeal within ten business days of the receipt of the appeal petition from the student, unless circumstances warrant additional time for review, with sufficient notice provided to the student.
- g. The decision of the Dean is final and without appeal.

## PENDENCY OF ACTION

Generally, implementation of an academic dismissal of a student from the Doctor of Pharmacy program and/or the CPPS will be deferred until all the due process hearings and time for appeals made by the student have been exhausted. Students will be allowed to continue in CPPS didactic coursework pending the ruling on appeal(s). Students **will not** be permitted to continue in experiential education on site experiences during the appeal process. Assignments/Exams may be completed but will not be scored unless the appeal is accepted. If the appeal is denied, the student will be immediately administratively removed from registered coursework.

Please note, the Dean of the CPPS or the Assistant/Associate Dean for Academic Affairs of the CPPS may impose immediate removal or restrictions on the student if the alleged academic conduct in any way concerns patient or public safety (including faculty, staff and other students).



# Student Code of Professional Conduct

## Purpose

The Student Code of Professional Conduct gives general notice of prohibited conduct and of the sanctions to be imposed if such conduct occurs. The Student Code of Professional Conduct should be read broadly, and is not designed to define misconduct in exhaustive terms. The Student Code of Professional Conduct specifies the rights and responsibilities of the students, student organizations, the college, and the rights of other parties to the procedure.

Students and student organizations are required to engage in responsible social and professional conduct that reflects credit upon the CPPS community and to model good citizenship in any community. Actions by students or student organizations, which interfere with the orderly functions of the college, or actions, which endanger the health or safety of members of the college community, will not be tolerated.

## Delegation of Authority

The dean of the CPPS or designee shall administer and implement this policy, including the promulgation of the standards of conduct, to be published and distributed as "The Student Code of Professional Conduct," with procedures and standards governing student conduct at UTCPPS. The Professional Conduct Committee is authorized to hear each matter and provide a final decision as to whether the code has been violated and a sanction if warranted. The dean of the College will assure that the sanction is implemented. You may access the CPPS Student Code of Professional Conduct by clicking this link: [https://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364\\_83\\_02.pdf](https://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364_83_02.pdf)

## Application

This policy, along with the University of Toledo "The Student Code of Conduct" (see [http://www.utoledo.edu/policies/main\\_campus/student\\_life/pdfs/3364\\_30\\_04\\_Student\\_code\\_of\\_conduct.pdf](http://www.utoledo.edu/policies/main_campus/student_life/pdfs/3364_30_04_Student_code_of_conduct.pdf)), applies to all students and student organizations of the CPPS. In areas of overlap, this policy supersedes the University of Toledo "The Student Code of Conduct".

## Licensure Requirement

A valid Ohio Intern license is required of all students entering the professional division of the Pharm.D. program. Any P1 student who does not obtain a valid Ohio intern license by December 31st of the P1 year will be withdrawn from all spring semester courses and will not be allowed to register for or take classes until a valid Ohio intern license is obtained. Depending upon the circumstances and length of time needed to resolve the issue, failure to obtain a valid Ohio intern license may result in forfeiture of the student's seat in the P1 class, necessitating reapplication to the professional division.

In addition any student in the professional division of the Pharm.D. program who does not annually renew his/her license before September 15th will be withdrawn from all courses effective immediately. Depending upon the circumstances and length of time needed to resolve the issue, failure to renew an Ohio intern license may result in forfeiture of the

student's seat in the Pharm.D. class, necessitating reapplication to the professional division.

## Academic Performance Standards

Please refer to the UT Policy web site (<http://www.utoledo.edu/policies>) for additional information on academic policies.

**The Academic Performance Standards** ([http://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364\\_83\\_03.pdf](http://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364_83_03.pdf)) **as outlined in the current catalog are subject to modifications with immediate implementation to keep pace with changing trends in pharmaceutical education and in accordance with accreditation standards.**

### Requirements for Academic Progression -- Pre-Professional Program Policies

#### 1. Good Academic Standing

- The College of Pharmacy and Pharmaceutical Sciences defines "good academic standing" for Pre-Professional students in the following manner: a minimum term and cumulative GPA of 2.00
- To hold an office in a CPPS organization or represent the CPPS, a student enrolled in the CPPS must be in "good academic standing."

#### 2. Academic Probation

- A student will be placed on Academic Probation for earning a term or cumulative GPA < 2.00
- In addition to academic probation, a student earning a term GPA < 1.00 may be subject to suspension from the CPPS and/or University for one (1) term, not including the summer terms. (See suspension below)
- Students will remain on academic probation until the cumulative GPA is raised to 2.00 or greater or qualifies for suspension.

#### 3. Suspension

- Any student who earns a term GPA < 1.00 must meet with their CPPS pre-professional academic advisor and the Associate Dean of Main Campus Student Affairs prior to the start of the next term. If a student earning a term GPA < 1.00 does not meet with their academic adviser and the Associate Dean of Main Campus Student Affairs prior to the start of the next term, the student will be suspended for a period of one (1) term, not including summer terms.
- Any student on academic probation who earns a term GPA < 2.00 will be suspended for a period of one (1) term, not including summer terms.
- In lieu of suspension from the University, a student who is suspended by CPPS policy, but remains eligible to continue at the University based on current university policy, may defer suspension as long as they agree to each of the following:
  - Register for a plan of study put forth by the academic adviser
  - Notify the academic adviser prior to dropping or adding any courses
  - Transfer to University College or another program of their choosing at The University of Toledo, whichever they become eligible to transfer to first

#### 4. Readmission from Suspension

- a. Students serving suspension have the right to petition for readmission to the CPPS. A student must request readmission via a written petition to the chair of the APC by the designated time.
- b. Any student returning from suspension will be placed on probation. While on probation, the student must earn a term GPA of 2.00 or better and a grade of D+ or better in all subsequent coursework or the student will be subject to dismissal.

#### 5. Dismissal

- a. Any student returning from suspension (and placed on probation) who earns a term GPA < 2.00 and/or a course grade of D or less, will be dismissed from the CPPS.
- b. In lieu of dismissal from the University, a student who is dismissed by CPPS policy, but remains eligible to continue at the University based on current university policy, may defer suspension as long as they agree to each of the following:
  - i. Register for a plan of study put forth by the academic adviser
  - ii. Notify the academic adviser prior to dropping or adding any courses
  - iii. Transfer to University College or another program of their choosing at The University of Toledo, whichever they become eligible to transfer to first

6. GPA recalculation for undergraduate courses will be allowed, in accordance with the policies of The University of Toledo.

#### 7. Petition for review of Suspension/Dismissal by APC

- a. A student who is suspended or dismissed may petition the APC to appeal the decision to suspend or dismiss. If the petition is accepted, the college will determine the conditions for academic progression under which the student will be permitted to continue taking classes.
- b. A student must submit the petition within one month of the date of suspension/dismissal.
- c. If a student is allowed to continue and does not meet expectations for academic progression, dismissal from the College of Pharmacy and Pharmaceutical Sciences will result.

#### 8. Appeal of Suspension or Dismissal to Dean

- a. A student may appeal a suspension or dismissal to the Dean of the CPPS. (Refer to CPPS Appeal Policy: 3364-83-05)
- b. Appeal will only be heard after a petition for review of suspension/dismissal has been submitted and denied by the APC (See #7 above)

### **Requirements for Academic Progression – Professional Division Students in the Bachelor of Science in Pharmaceutical Sciences program (Pharmacology/Toxicology, Medicinal AND BIOLOGICAL Chemistry, Cosmetic Sciences and Formulation Design, Pharmaceuticals, and Pharmacy Administration) Policies**

#### 1. Good Academic Standing

- a. The College of Pharmacy and Pharmaceutical Sciences defines “good academic standing” for professional division students in the Bachelor of Science in Pharmaceutical Sciences program

(Pharmacology/Toxicology, Medicinal Chemistry, Cosmetic Sciences and Formulation Design, Pharmaceuticals, and Pharmacy Administration) in the following manner: a minimum term and cumulative GPA of 2.00

- b. To hold an office in a CPPS organization or represent the CPPS, a student enrolled in the CPPS must be in “good academic standing.”

#### 2. Academic Probation

- a. A student will be placed on Academic Probation for the following:
  - i. Earning a semester or cumulative GPA < 2.00
  - ii. Earning a semester GPA < 1.00; this performance may lead to suspension (see section on suspension below) from the University without a preliminary probationary semester.
- b. Any student on Academic Probation for two of three consecutive semesters in attendance may be suspended (see section on suspension below) from the University.
- c. Students will remain on Academic Probation until the cumulative GPA is raised to 2.00 or greater.

#### 3. Suspension

- a. Any student on academic probation who earns a term or cum GPA of < 2.00 or grade of F may be suspended for a period of one (1) semester, not including summer semesters.
- b. Any student who earns a cumulative GPA < 1.00 may be suspended for a period of one (1) semester, not including summer semesters.

#### 4. Readmission from Suspension

- a. Students serving suspension have the right to petition for readmission to the CPPS. A student must request readmission via a written petition to the chair of the APC at least eight (8) weeks prior to the returning semester.
- b. A student returning from suspension will be placed on probation. The student must earn a term GPA of 2.00 or better and a grade of D- or better in all subsequent coursework or the student will be subject to dismissal.
- c. A student may appeal a suspension (Refer to CPPS Appeal Policy: 3364-83-05)

#### 5. Dismissal

- a. Any student returning from suspension and earning a term GPA < 2.00 and/or a course grade of F will be dismissed from the CPPS.
- b. A student may appeal a dismissal (Refer to CPPS Appeal Policy: 3364-83-05)

6. GPA recalculation for undergraduate courses will be allowed, in accordance with the policies of The University of Toledo.

### **Requirements for Academic Progression – Doctor of Pharmacy Program (Policy No. 3364-83-07)**

#### 1. Good Academic Standing

- a. The College of Pharmacy and Pharmaceutical Sciences defines “good academic standing” for students enrolled in the Doctor of Pharmacy (PharmD) Program in the following manner:
  - i. Maintaining minimum required course cumulative GPA  $\geq 2.75$

- ii. Earning grade of C or better in all required courses
- b. A grade below a C in any required course is unsatisfactory and will not be considered a passing grade for the course in the Pharm.D. curriculum (i.e., courses for which grades of less than a C are earned must be repeated).
- c. To hold an office in a CPPS organization or represent the CPPS, a student enrolled in the CPPS must be in "good academic standing."

## 2. Academic Progression\*

- a. To advance to the P2 year, the student must earn the following:
    - i. A required course cum GPA  $\geq 2.75$
    - ii. A grade of C or better in all required courses
  - b. To matriculate to the P3 year, the student must earn the following:
    - i. A required course cum GPA  $\geq 2.75$
    - ii. A grade of C or better in all required courses
  - c. To advance to the P4 (APPE) year, the student must earn the following:
    - i. A required course cum GPA  $\geq 2.75$
    - ii. A grade of C or better in all required courses
  - d. To graduate with a Doctor of Pharmacy degree from the UT-CPPS, the student must earn the following:
    - i. A required course cum GPA  $\geq 2.75$
    - ii. A grade of C or better in all required courses
- \*Students not permitted to move on to the next professional year due to failure to meet academic requirements will be allowed to repeat previous coursework in an attempt to meet the necessary requirements for advancement.

## 3. Academic Probation

The following academic performance will lead to Academic Probation:

- a. Earning a required course cum GPA  $< 2.75$
- b. Earning a grade less than a C in required course.
- c. A student will remain on probation until he/she achieves academic good standing or is no longer enrolled in the program.
- d. Failure to pass a pharmacy practice experience or dismissal from a pharmacy practice experience (for reasons other than an action detrimental to patient care and/or to the clinical service).

## 4. Dismissal

The following academic performance or circumstances will lead to dismissal from the Doctor of Pharmacy Program:

- a. Earning  $\geq 4$  grades less than a C on first attempt in required courses (P1-P3 years).
- b. Earning a required course term GPA  $< 2.00$
- c. Earning a required course cum GPA  $< 2.25$  (excluding the Fall P1 semester)
- d. Earning a grade  $< C$  in a repeated required course.
- e. Student no longer able to complete the program in the required six (6) calendar year time period from the initial enrollment semester – student's P1 Fall semester. (See Policy 3364-83-04 Time for Completion of the Doctor of Pharmacy Program)
- f. If dismissed from the Doctor of Pharmacy program, the student may continue to earn a BSPS degree if he/she has not already done

so or transfer to other Colleges/Programs within the University as eligible.

The following experiential performance may make a student eligible for dismissal:

- a. Any student on probation due to experiential performance who fails to pass a pharmacy practice experience or is dismissed from a pharmacy practice experience.

## 5. Petition for Readmission after Dismissal

- a. A student who is dismissed may petition the APC for readmission. If the petition is accepted, the college will determine the conditions under which the student will be permitted to re-enroll.
- b. A student must submit the petition within one calendar year of the date of dismissal.\*
- c. If a student is readmitted and does not meet expectation for academic progression, permanent dismissal from the College of Pharmacy and Pharmaceutical Sciences will result.

## 6. Appeal of Probation or Dismissal to Dean

- a. A student may appeal a probation or dismissal to the Dean of the CPPS. (Refer to CPPS Appeal Policy: 3364-83-05)
  - b. Appeal will only be heard after a petition for review of probation/dismissal has been submitted and denied by the APC (See #5 above)
- \*Time between dismissal and readmission will count toward "Time to completion of the PharmD Program (See Policy 3364-83-04 Time for Completion of the Doctor of Pharmacy Program)"

## 7. Pharmacy Required Course GPA calculation

- a. The pharmacy required course GPA will consist of all required professional program pharmacy core-curriculum undergraduate and post-baccalaureate coursework (see below).
- b. Required courses may not be repeated more than once.
- c. All required courses (first attempt and repeated) will be counted towards required course cumulative GPA, regardless of the University grade recalculation policy.
- d. A repeated required course grade, in which a student earned a grade of B or better on the first attempt, will not be included in the required course GPA.
- e. Neither undergraduate nor post-baccalaureate elective coursework will be counted towards pharmacy required course GPA.

## 8. Matriculation

- a. To matriculate to the post B.S.P.S. portion (P3-P4) of the Doctor of Pharmacy program, the student must earn both of the following:
  - i. A required course cum GPA  $\geq 2.75$
  - ii. A grade of C or better in all required courses
- b. Students failing to achieve these two requirements will not matriculate and must do one of the following:
  - i. Retake required courses to demonstrate an improved aptitude for the material and seek matriculation with the next year's class.
  - ii. If eligible, graduate with a Bachelor of Science in Pharmaceutical Sciences (BSPS) degree. However, doing so would prevent the student from taking/retaking additional undergraduate courses towards achieving a PharmD degree, thus ending any opportunity to further pursue a PharmD degree at The University of Toledo.

- iii. If eligible, consider transferring to one of the other five tracks (Pharmaceutics, Pharmacology/Toxicology, Pharmacy Administration, Medicinal and Biological Chemistry, or Cosmetic Sciences and Formulation Design) of the BSPS program.
- iv. If eligible, change colleges within the University of Toledo or transfer to another institution.

Code	Title	Hours
Pharmacy Required Courses (used in calculation of pharmacy required course cumulative GPA)		
*Required P1-P2 Level Courses		
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3
PHPR 3000	Pharmaceutics and Dosage Form Design	5
PHPR 3450	Pharmacy Skills Development-1	2
PHPR 3920	Introductory Pharmacy Practice Experience I	1
PHPR 3300	Commonly Prescribed Meds and Med Term 1	1
PHPR 3050	Interprofessional Approach to Patient Care	1
PHPR 3310	Introduction to Pharmacy Law	1
MBC 3552	Physiological Chemistry II Cellular Metabolism and Homeostasis	2
PHPR 3060	Introduction to Patient Care	1
PHM 3100	Cardiology I Hypertension and Hyperlipidemia	2
PHM 3120	Diabetes Endocrine	3
PHPR 3460	Pharmacy Skills Development-2	2
PHPR 3930	Introductory Pharmacy Practice Experience 2	1
MBC 3860	Microbiology for Pharmaceutical Professionals	2
PHPR 3470	Pharmacokinetics	3
PHPR 3250	Introduction to Self Care	1
PHM 4010	Immunology	3
PHM 4030	Infectious Disease	4
PHPR 4470	Applied Clinical Pharmacokinetics Primer	1
PHPR 4350	Pharmacy Skills Development - 3	2
PHPR 4920	Introductory Pharmacy Practice Experience 3	1
PHPR 4220	Medication Therapy Management	2
PHPR 4530	Evidence Based Medicine 1	3
PHPR 4300	Commonly Prescribed Meds and Med Term II	1
PHM 4100	Psychiatry and Neurology	3
PHM 4120	Pain and Substance Abuse	2
PHM 4140	Hematology	1.5
PHM 4160	Pulmonary	1.5
PHPR 4360	Pharmacy Skills Development - 4	2
PHPR 4930	Introductory Pharmacy Practice Experience 4	1
PHPR 4270	Health Systems	1.5
PHPR 4540	Evidence Based Medicine 2	2

Code	Title	Hours
Required P3-P4 Level Non-APPE Courses		
PHM 6010	Cardiology II	3
PHM 6030	Gastrointestinal	2
PHPR 6300	Fluids Electrolytes and Kidney Disease	2
PHPR 6460	Pharmacy Skills Development - 5	2
PHPR 6920	Introductory Pharmacy Practice Experience 5	1
PHPR 6220	Pharmacoeconomics and Outcomes Research	1
PHPR 6000	Drug Information Seminar	2
PHM 6100	Oncology	2
PHPR 6170	Special Populations and Topics	3
PHPR 6310	Jurisprudence and Ethics	1
PHPR 6470	Pharmacy Skills Development - 6	2
PHPR 6270	Business Aspects of Pharmacy	2
PHPR 6250	Advanced Self Care	3

**NOTE:** PharmD graduate electives are not counted toward PharmD core-curriculum courses.

## Student Academic Grievance of Individual Final Course Grades

All pre-professional division students in the college will follow the current UT undergraduate academic grievance policy. All M.S. and Ph.D. students in the college will follow the graduate student academic grievance policy.

All professional division (P1-P4) students will following the process below:

### **Professional division (P1-P4) of CPPS STUDENT ACADEMIC GRIEVANCE OF INDIVIDUAL final course grades**

To initiate resolution of final course grade grievances, the student shall formally dispute the grade in writing to the faculty member responsible for assigning the grade. The written dispute should include the student's name and Rocket number, date, course number and section, semester, the specific issue in dispute, and the student's request for resolution. The written request should be delivered (email or hard copy) within 7 days of the grade posting. The faculty member then has 7 days in which to respond in writing (email or hard copy) back to the student.

If resolution is not achieved, the student may forward the written dispute (as described above and with the response of the faculty member) to the chair of the faculty member's department. The student has 7 days in which to appeal to the department chairperson following the receipt of the faculty member response. The department chairperson then has 7 days in which to respond in writing (email or hard copy) back to the student.

If resolution is still not achieved, the student may submit the same written dispute (as outlined above and with the response of the department chairperson) to the CPPS dean. The student has 7 days in which to appeal to the dean following the receipt of the department chairperson's response. The dean then has 7 days in which to respond in writing (email or hard copy) back to the student. The decision of the dean is final and without appeal.



## Experiential Performance Standards

The experiential series allows students to gain an appreciation of the role of the pharmacist through visiting actual pharmacy practice sites and participating in direct patient care activities. Throughout the course of the experiential series each student will be required to complete a number of health and regulatory requirements. These regulatory requirements must be originally completed and kept up to date at all times in order to remain in the experiential program. These requirements may include immunizations and other certain health documentation as well as licensures, certifications and background checks.

Specific details regarding the above requirements will be provided to all students upon admission into the Pharm.D. program and throughout the experiential series. Additional requirements and expectations will be included in the experiential manual. The experiential manual will be made available to all students on an annual basis. Students are responsible for reading, understanding and adhering to all policies and procedures outlined therein.

## Good Standing

The CPPS defines "good academic standing" in the following manner:

1. For all pre-professional students, and professional division students in the Bachelor of Science in Pharmaceutical Sciences program (pharmacology/toxicology, medicinal and biological chemistry, pharmaceuticals, cosmetic science and formulation design, and pharmacy administration majors): a minimum cumulative GPA of 2.0 and a minimum GPA of 2.0 for the semester.
2. For all P1 and P2 professional division students in the Pharm.D. program: a minimum cumulative pharmacy core-curriculum GPA of 2.75.
3. For students in the post-baccalaureate portion of the Pharm.D. program: a minimum pharmacy core-curriculum cumulative GPA of 2.75.

## Time in Program Policy

To ensure provision of the most up-to-date and relevant pharmacy and pharmaceutical sciences education, all Doctor of Pharmacy degree requirements must be completed within six (6) years from the time the student first enrolls in the professional division (P1) of the Doctor of Pharmacy program. An approved leave of absence will justify an extension. The policy can be found by clicking here: [http://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364-83-04.pdf](http://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364-83-04.pdf).

## Student Grievances

### STUDENT COMPLAINTS RELATED TO PHARM D ACCREDITATION STANDARDS

Student complaints specifically related to Accreditation Council for Pharmacy Education (ACPE) standards should be submitted on the appropriate form to the CPPS Office of Student Affairs (Wolfe Hall Room 1227 or Frederic and Mary Wolfe Center, Health Education Building, Suite 155) in care of the associate dean for student affairs. Forms and a copy of the ACPE standards are available in the Office of Student Affairs and

on the college website under **Current Student Links**. Students can also find the ACPE standards at the ACPE web site. The associate dean will meet with the dean of the College to review the complaint and consult with the student complainant and individuals involved. A formal response will be issued by the dean.

If the issue is not resolved at the College level, the student complainant can submit the complaint directly to ACPE. In addition, a student may submit a complaint directly to ACPE without submission to the College. See <https://www.acpe-accredit.org/complaints/default.asp> for more information.

### PRE-PROFESSIONAL STUDENT COMPLAINTS

Pre-professional student issues or complaints regarding specific courses should follow these steps when pursuing an academic grievance:

1. **STEP 1:** The student discusses the problem with the faculty member whom the student believes has taken improper action.
2. **STEP 2:** If resolution is not achieved, the student discusses the problem with the chair of the faculty member's department.
3. **STEP 3 (optional):** If the student wishes, the student may seek informal counsel from the president of student government. (<http://www.utoledo.edu/studentaffairs/sg>)
4. **STEP 4:** If resolution is still not achieved, the student discusses the problem with the dean of the college or the college representative responsible for dealing with student academic grievances.
5. **STEP 5:** If resolution is not achieved at the college level, the student needs to file a petition for academic grievance with the chair of the Student Grievance Council.

See <http://www.utoledo.edu/offices/provost/academicgrievance/undergraduate.html> for UT academic grievance timeframe, the written petition guidelines and contact information for the current Student Grievance Council Chair.

Please refer to the UT Policy web site for additional information on academic policies: <http://www.utoledo.edu/policies/>.

### professional division (P1-P4) STUDENT COMPLAINTS

To initiate resolution of final course grade grievances, the student shall formally dispute the grade in writing to the faculty member responsible for assigning the grade. The written dispute should include the student's name and Rocket number, date, course number and section, semester, the specific issue in dispute, and the student's request for resolution. The written request should be delivered (email or hard copy) within 7 days of the grade posting. The faculty member then has 7 days in which to respond in writing (email or hard copy) back to the student.

If resolution is not achieved, the student may forward the written dispute (as described above and with the response of the faculty member) to the chair of the faculty member's department. The student has 7 days in which to appeal to the department chairperson following the receipt of the faculty member response. The department chairperson then has 7 days in which to respond in writing (email or hard copy) back to the student.

If resolution is still not achieved, the student may submit the same written dispute (as outlined above and with the response of the department chairperson) to the CPPS dean. The student has 7 days



in which to appeal to the dean following the receipt of the department chairperson's response. The dean then has 7 days in which to respond in writing (email or hard copy) back to the student. The decision of the dean is final and without appeal.

## Leave of Absence Policy

A student enrolled in the Doctor of Pharmacy program who is in good academic standing or on academic probation (excluding those students eligible for suspension or dismissal from the CPPS) may request a leave of absence (LOA) for up to 12 months. All students approved for a LOA, regardless of the type of LOA, must also request and be approved if they wish to return from the LOA.

Please go to:

[http://www.utoledo.edu/policies/academic/college\\_of\\_pharmacy/pdfs/3364-83-06.pdf](http://www.utoledo.edu/policies/academic/college_of_pharmacy/pdfs/3364-83-06.pdf) for more information on the policy. To apply for a Leave of Absence (LOA), please go here (<https://myut.utoledo.edu/channels/colleges/pharmacy/pdfs/LOA%20UTPharmD%20application.pdf>) to complete the application.

## Requirements for Undergraduate and Professional Programs of Study

The student is responsible for the correct selection of the program of study each semester and for the fulfillment of the requirements given here. Although advisors will assist wherever possible, the final responsibility rests with the student. The CPPS reserves the right to change its policies and procedures at any time. These changes will be binding on the date they are approved by faculty action. Courses taken at other colleges of pharmacy will not substitute for required professional division courses. The only pharmacy courses a pre-professional student is permitted to take through the CPPS are:

Code	Title	Hours
PHPR 1000	Orientation	1
PHPR 2040	Introduction to Cosmetic Science	1
PHCL 2220	Drugs, Medicine And Society	3
PHCL 2610	Introductory Physiology	3
PHCL 2900	Pharmacology Research Introduction	1-3
MBC 2960	Undergraduate Research	1-6

Only students admitted to the professional division will be allowed to take 3000- or 4000-level courses in the college.

## Degree Requirements

The curriculum as outlined in the current catalog is subject to modifications with immediate implementation to keep pace with changing trends in pharmaceutical education and in accordance with accreditation standards.

## Bachelor of Science in Pharmaceutical Sciences Degree Requirements

In response to the increasing demand for scientists, researchers, administrators, and professional sales representatives in the pharmaceutical fields, The University of Toledo CPPS offers the Bachelor

of Science in Pharmaceutical Sciences degree program as one of the first in Ohio. The Bachelor of Science in Pharmaceutical Sciences degree is a four-year baccalaureate program. Pharmaceutical sciences represent the collective basic sciences that underlie pharmacy. There are five majors and one minor under this degree program:

- cosmetic science and formulation design (PCOS) major and minor,
- medicinal and biological chemistry (MBC),
- pharmaceuticals (PHAR),
- pharmacology/toxicology (PTOX), and
- pharmacy administration (PHAM).

This degree program is designed for students who wish to pursue careers related to the pharmaceutical industry, pharmaceutical science and research, pharmacy administration and sales, the biomedical industry, the personal products industry, forensic science, as well as health-care administration. It also prepares students to pursue graduate studies or enter professional schools including medicine, dentistry, law and physician assistant programs.

## General Program Requirements

A minimum of 120 semester hours is required for graduation with all bachelor of science in pharmaceutical sciences non-PharmD majors.

### Double Major within the B.S.P.S. Program Requirements

- All program requirements for both majors have to be successfully fulfilled.
- Internship for both majors should be taken at different semesters and student will pay a total of 6 terms of practicum fees.
- A minimum of 144 semester hours for any dual majors is required. For MBC and PTOX dual majors, a minimum of 38 major elective hours is required.

## Pre-Professional Division Requirements

In the pre-professional division, the first two years of the Bachelor of Science in Pharmaceutical Sciences program, students will be broadly trained in the arts, humanities and social sciences – although the natural sciences will receive emphasis. The curriculum of the pre-professional division of the CPPS is similar for the Pharm.D. and the B.S.P.S. degrees.

## College of Pharmacy & Pharmaceutical Sciences (CPPS) Pre-Professional (PREP) Curriculum

### Applying to Professional Division (P1) for Fall 2018 or after

Course	Title	Hours
<b>First Term</b>		
<b>Fall 1st Year</b>		
PHPR 1000	Orientation <sup>1</sup>	1
MATH 1850 or MATH 1750 <b>and</b> MATH 1760	Single Variable Calculus I or Calculus For The Life Sciences With Applications I <b>and</b> Calculus For The Life Sciences With Applications II	4-7
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4

BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15-18
<b>Second Term</b>		
<b>Spring 1st Year</b>		
PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science	3
or MATH 2600	or Introduction To Statistics	
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I (UT Core Requirement)	3
or ENGL 1010	or College Composition 1 Co-Requisite	
UT Core Requirement (US Diversity) <sup>2</sup>		3
Hours		17
<b>Third Term</b>		
<b>Fall 2nd Year</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
or PHYS 2070	or General Physics I <i>and</i> General Physics II	
<i>and</i> PHYS 2080		
Select one of the following UT Core Requirements:		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
UT Core Requirement (Social Science) <sup>2</sup>		3
Hours		14
<b>Fourth Term</b>		
<b>Spring 2nd Year</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
UT Core Requirement (Social Science) <sup>2</sup>		3
UT Core Requirement (Humanities/Fine Arts) <sup>2</sup>		3
UT Core Requirement (Humanities/Fine Arts) <sup>2</sup>		3
UT Core Requirement (Non-US Culture) <sup>2</sup>		3
Hours		16
Total Hours		62-65

<sup>1</sup> Only offered during fall semesters.

<sup>2</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

## Bachelor of Science in Pharmaceutical Sciences Professional Division Requirements

In the professional division of the Bachelor of Science in Pharmaceutical Sciences degree program, the last two years of the program, advanced courses of study and internship in each major lead to a unique concentration in the pharmaceutical fields. Requirements can be found under General Criteria for Progression to the professional divisions of BSPS.

## Doctor of Pharmacy (Pharm D)

The program of study leading to pharmacy licensure is the entry-level doctor of pharmacy (Pharm.D. (<https://utoledo-preview.courseleaf.com/undergraduate/pharmacy-pharmaceutical-sciences/pharmacy-practice/bmps-doctor-pharmacy>)). Students seeking a degree that will lead to pharmacy licensure will need to complete two years of prerequisite course work prior to matriculation into the professional division of the CPPS. Following the completion of a core set of required courses, students will apply to the professional division. Admission to the professional division of the college is competitive.

Following admission to the professional division, the entry-level Pharm.D. program students will complete a bachelor of science in pharmaceutical sciences degree prior to more focused course work in pharmacotherapy and pharmaceutical care. Students in the entry-level Pharm.D. track who have completed the Bachelor of Science in Pharmaceutical Sciences degree at The University of Toledo are eligible to continue in the Pharm.D. program.

In order to graduate with a Pharm.D. degree, students must meet the current academic performance standards. Only students who successfully complete the Pharm.D. degree will qualify for licensure in the practice of pharmacy. A total of 129.5 semester hours is required for graduation with the Bachelor of Science in Pharmaceutical Sciences-Pharm.D. track degree. A total of 69 graduate semester hours is required for graduation with the Pharm.D. degree. The curriculum is outlined below.

## DOCTOR OF PHARMACY/PHARMD (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER) PREPROFESSIONAL

Course	Title	Hours
<b>First Term</b>		
PHPR 1000	Orientation <sup>1</sup>	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4

BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15

**Second Term**

PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science <sup>*2</sup>	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
Hours		17

**Third Term**

CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
Hours		14

**Fourth Term**

CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Non-US Diversity <sup>3</sup>		3
Hours		16
Total Hours		62

<sup>1</sup> Only offered during Fall semesters.

<sup>2</sup> Not required prior to P1 for BSPS-only applicants.

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH 1320 or MATH 1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

**Professional**

Course	Title	Hours
<b>Fifth Term</b>		
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3

PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3
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PHPR 3000	Pharmaceutics and Dosage Form Design	5
PHPR 3450	Pharmacy Skills Development-1	2
PHPR 3920	Introductory Pharmacy Practice Experience I	1
PHPR 3300	Commonly Prescribed Meds and Med Term 1	1
PHPR 3050	Interprofessional Approach to Patient Care	1
Hours		18

**Sixth Term**

PHPR 3310	Introduction to Pharmacy Law	1
MBC 3552	Physiological Chemistry II Cellular Metabolism and Homeostasis	2
PHPR 3060	Introduction to Patient Care	1
PHM 3100	Cardiology I Hypertension and Hyperlipidemia	2
PHM 3120	Diabetes Endocrine	3
PHPR 3460	Pharmacy Skills Development-2	2
PHPR 3930	Introductory Pharmacy Practice Experience 2	1
MBC 3860	Microbiology for Pharmaceutical Professionals	2
PHPR 3470	Pharmacokinetics	3
PHPR 3250	Introduction to Self Care	1
Hours		18

**Seventh Term**

PHM 4010	Immunology	3
PHM 4030	Infectious Disease	4
PHPR 4470	Applied Clinical Pharmacokinetics Primer	1
PHPR 4350	Pharmacy Skills Development - 3	2
PHPR 4920	Introductory Pharmacy Practice Experience 3	1
PHPR 4220	Medication Therapy Management	2
PHPR 4530	Evidence Based Medicine 1	3
PHPR 4300	Commonly Prescribed Meds and Med Term II	1
Hours		17

**Eighth Term**

PHM 4100	Psychiatry and Neurology	3
PHM 4120	Pain and Substance Abuse	2
PHM 4140	Hematology	1.5
PHM 4160	Pulmonary	1.5
PHPR 4360	Pharmacy Skills Development - 4	2
PHPR 4930	Introductory Pharmacy Practice Experience 4	1
PHPR 4270	Health Systems	1.5

PHPR 4540	Evidence Based Medicine 2	2
	Hours	14.5
	Total Hours	67.5

Code	Title	Hours
Preprofessional		62
Professional		67.5
Total Hours		129.5

Following admission to the professional division, the entry-level Pharm.D. program students will complete a bachelor of science in pharmaceutical sciences degree prior to more focused course work in pharmacotherapy and pharmaceutical care. Students in the entry-level Pharm.D. track who have completed the bachelor of science in pharmaceutical sciences degree at The University of Toledo and meet progression standards are eligible to continue in the Pharm.D. program.

In order to graduate with a Pharm.D. degree, students must meet the current academic performance standards. Only students who successfully complete the Pharm.D. degree will qualify for licensure in the practice of pharmacy. A total of 126.5 semester hours is required for graduation with the bachelor of science in pharmaceutical sciences-Pharm.D. track degree. A total of 69 graduate semester hours is required for graduation with the Pharm.D. degree. The Pharm. D. program is accredited by ACPE and will be revisited for reaccreditation in Fall of 2019.

#### GRADUATE PROFESSIONAL DOCTOR OF PHARMACY

Students must graduate with the BSPS Doctor of Pharmacy prior to beginning the final two years (ninth through thirteenth terms) of the Doctor of Pharmacy program.

Course	Title	Hours
<b>Ninth Term</b>		
Institutional IPPEs		
	Hours	0
<b>Tenth Term</b>		
PHM 6010	Cardiology II	3
PHM 6030	Gastrointestinal	2
PHPR 6300	Fluids Electrolytes and Kidney Disease	2
PHPR 6460	Pharmacy Skills Development - 5	2
PHPR 6920	Introductory Pharmacy Practice Experience 5	1
PHPR 6220	Pharmacoeconomics and Outcomes Research	1
PHPR 6000	Drug Information Seminar ((Fall or Spring)) <sup>2</sup>	2
Professional Elective <sup>1</sup>		4
	Hours	17
<b>Eleventh Term</b>		
PHM 6100	Oncology	2
PHPR 6170	Special Populations and Topics	3
PHPR 6310	Jurisprudence and Ethics	1
PHPR 6470	Pharmacy Skills Development - 6	2

PHPR 6270	Business Aspects of Pharmacy	2
PHPR 6250	Advanced Self Care <sup>3</sup>	3
PHPR 6000	Drug Information Seminar ((Fall or Spring)) <sup>2</sup>	-
Professional Elective <sup>1</sup>		3
	Hours	16

#### Twelfth Term

PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
	Hours	20

#### Thirteenth Term

PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
PHPR 8940	Clinical Clerkship	4
	Hours	16
	Total Hours	69

<sup>1</sup> A total of 7 credit hours of Graduate Professional Electives is required.

<sup>2</sup> This course may be taken in Fall or Spring, making the program a total of 69 hours.

<sup>3</sup> Effective Spring 2021

### Pharm.D. Graduate Professional Electives

The following is a list of recommended graduate professional electives. A total of 7 credit hours of graduate professional electives is required. Other electives may be chosen with the written approval of the CPPS Curriculum Committee. A graduate course which significantly overlaps in content with a course used to fulfill the undergraduate professional elective requirement will not count towards fulfilling the graduate professional elective requirement. Credit for courses taken outside The University of Toledo can be counted towards professional elective credit requirements if a grade of C or better is earned, but grades will not be factored into CPPS or University of Toledo GPA calculations.

Code	Title	Hours
<b>MBC</b>		
MBC 5100/7100	Ethical Conduct Research	1
MBC 5380	Medicinal And Poisonous Plants	3
MBC 5620/7620	Biochemical Techniques	2
MBC 6100/8100	Advanced Immunology	2
MBC 6190/8190	Advanced Medicinal Chemistry	4
MBC 6200/8200	Biomedical Chemistry	4
MBC 6420/6430	Protein Chemistry	4
or CHEM 6510/8510	Protein Chemistry	
MBC 6430/8430	Nucleic Acid Chemistry	4

or CHEM 6530/8530	Nucleic Acid Chemistry	
MBC 6440/8440	Enzymology	4
or CHEM 6520/8520	Enzymology	
MBC 6980	Special Topics In Biomedical Chemistry	1-5
<b>PHCL</b>		
PHCL 5730	Toxicology I	3
PHCL 5750	Toxicology II	3
PHCL 5760	Toxicokinetics	3
PHCL 5990	Problems In Pharmacology	1-6
PHCL 6600	Seminar In Pharmacology	1
<b>PHPR</b>		
PHPR 5590	Readings in Access and Cultural Competence	2
PHPR 5680	Parenteral Manufacturing	2
PHPR 5690	Dosage Form Design	3
PHPR 5710	Selected Topics In Pharmaceutical Technology	2-3
PHPR 5720	Pharmaceutical Rate Processes	3
PHPR 5810	FINANCE AND PERSONAL PLANNING FOR PHARMACISTS	2
PHPR 5870	Compounding Boot Camp	2
PHPR 5990	Problems In Pharmacy Practice	1-6
PHPR 6400	Topics in Internal Medicine	2
PHPR 6410	Leadership: Principles and Practice	2
PHPR 6530	Research Methods In Pharmacy Practice	2
PHPR 6600	Seminar In Administrative Pharmacy	1
PHPR 6670	Chemical Dependency And The Pharmacist	3
PHPR 6700	Special Topics in Diabetes Care	2
PHPR 6810	Hospital Pharmacy Administration	3
PHPR 6820	Selected Topics In Hospital Pharmacy	3
PHPR 6830	Advanced Community Pharmacy Administration	3
PHPR 6840	Selected Topics In Community Pharmacy	3
PHPR 6950	Seminar In Industrial Pharmacy	1
PHPR 6980	Special Topics	1-5
PHPR 8540	Patient Monitoring Principles	3
<b>PHM</b>		
PHM 6400	Physical and Mental Effects of Psychoactive Substances	2
<b>Additional Recommendations</b>		
BUAD 6300	Strategic Marketing And Analysis	3
BUAD 6600	Supply Chain Management	3
BUAD 6900	Strategic Management Capstone	3
COMM 6260	Business, Communication And Technology	3
COUN 6240	Diagnosis And Mental Health	4
COUN 6470/8470	Drugs And Mental Health Counseling	4
EDP 5210	Child Behavior And Development	3
EDP 5230	Adult Development	3
HEAL 5750	Obesity And Eating Disorders	3
HEAL 6530/8530	Drug Use And Misuse	3
MGMT 5110	Introduction To Management	3

PSY 6600	Behavioral Neuroscience	3
PUBH 6330	Public Health and Aging	3
SOC 5160	Health And Gender	3

#### *The University of Florida, College of Pharmacy*

PHA 5239: Legal and Org Environ of Medicines Use	3
PHA 6935: Sel Topics in Pharmacy: Pharmaceutical Crimes Practices and Procedures	3
PHA 6935: Selected Topics in Pharmacy: Veterinary Pharmacy	2
<i>Mercer College of Pharmacy</i>	
PHA 505: Community Pharmacy Ownership	2

## Pharm.D./MBA Dual Degree Program

The College of Pharmacy and Pharmaceutical Science (CPPS) and the College of Business and Innovation (COBI) have worked cooperatively to enable students in the Pharm.D. program to earn an MBA.

## Administration of the Pharm.D./MBA

The admission process for the Pharm.D./MBA will require that students apply to each program separately. More specifically, students will apply and be required to meet the admission requirements of the MBA program as administered by the COBI, and the same students will be required to apply and meet the admission requirements of the Pharm.D. program as administered by the CPPS. Pharm.D. students take the Pharmacy College Admission Test (PCAT), and that would be accepted by the MBA program in lieu of the GMAT. The COBI Graduate Student Advising Office provides advising for the MBA portion of the program. Degrees will be conferred separately with the COBI conferring the MBA, and the CPPS conferring the Pharm.D.

## MBA Admissions Procedures

For admission to the program, The University of Toledo MBA program requires a 2.7 undergraduate GPA on a 4.0 scale and a score of 450 on the Graduate Management Admissions Test (GMAT) with a minimum score of 20 in both the verbal and quantitative sections or the PCAT for those in the Pharm.D./MBA Dual Degree Program. For further admission information please refer to the COBI catalog (<http://utoledo-public.courseleaf.com/graduate/business-innovation>) or online admissions website.

## MBA Curriculum

### Integrated Curriculum

PharmD/MBA students may replace OPMT 5510 Statistics with the College of Pharmacy and Pharmaceutical Sciences PHPR 4330, PHPR 6340, or any Statistics I equivalent course.

Up to three of the College of Pharmacy and Pharmaceutical Sciences courses will serve as MBA electives. The nine credit hours of elective course work will be fulfilled by (3) AAPE rotations (12 credit hours) from the Management and Administration Track. Students in the dual degree program will earn their MBA in General Administration since the MBA electives are replaced with College of Pharmacy and Pharmaceutical Sciences courses.



Please see the COBI catalog (<http://utoledo-public.courseleaf.com/graduate/business-innovation>) for specific course information related to the MBA.

## Department of Medicinal and Biological Chemistry

Dr. Katherine Wall, Chair

The Department of Medicinal and Biological Chemistry consists of 16 faculty members with a variety of research interests ranging from design and synthesis of drugs directed toward neurotransmitter receptors to the development of novel therapeutics for cancer and AIDS. The department is equipped with state-of-the-art computer-assisted instrumentation, including facilities for organic chemical and macromolecular analysis, molecular graphics, and radiochemical imaging. These facilities are available for use by all students involved in graduate research.

## Degrees Offered

- BSPS in Medicinal Chemistry (MBC) (p. 447)

### MBC 2960 Undergraduate Research

[1-6 credit hours]

Development and pursuit of undergraduate research in Medicinal and Biological Chemistry.

**Term Offered:** Spring, Summer, Fall

### MBC 3100 Practices in Pharmaceutical Research

[1 credit hour]

Consideration of the scientific, ethical, and legal obligations expected in the conduct of academic and industrial pharmaceutical research.

**Term Offered:** Spring

### MBC 3310 Medicinal Chemistry I: Drug Action And Design

[2 credit hours]

An introductory course presenting the basic chemical principles governing the behavior of drugs and the design of new therapeutics.

**Prerequisites:** CHEM 2420 with a minimum grade of D-

**Term Offered:** Fall

### MBC 3320 Medicinal Chemistry II: Drug Design and Drug Action

[3 credit hours]

A course presenting application of basic medicinal chemistry principles in drug design and drug action, which are key to drug discovery and drug development.

**Prerequisites:** (MBC 3310 with a minimum grade of D- and MBC 3550 with a minimum grade of D-)

**Term Offered:** Spring

### MBC 3330 Techniques in Pharmaceutical and Medicinal Chemistry

[2 credit hours]

A consideration and application of analytic and chemistry techniques useful for pharmaceutical and medicinal chemistry students.

**Term Offered:** Fall

### MBC 3340 Techniques in Pharmaceutical and Medicinal Chemistry Laboratory

[1 credit hour]

A laboratory course that fosters development of analytical and chemistry techniques useful for pharmaceutical and medicinal chemistry students.

**Corequisites:** MBC 3330

**Term Offered:** Fall

### MBC 3550 Physiological Chemistry I: Structure And Function Of Biological Macromolecules

[3 credit hours]

An examination of the levels of structure of proteins, nucleic acids, other biomolecules and biomolecular assemblies.

**Term Offered:** Fall

### MBC 3552 Physiological Chemistry II Cellular Metabolism and Homeostasis

[2 credit hours]

This course is an examination of the catabolic and anabolic reactions that comprise cellular metabolism and the regulation mechanisms that operate to maintain cellular homeostasis.

**Prerequisites:** MBC 3550 with a minimum grade of D-

### MBC 3560 Physiological Chemistry II: Chemical Regulation Of Cells And Organisms

[3 credit hours]

An examination of the chemistry and regulation of metabolic processes in cells, interacting cells and tissues.

**Prerequisites:** MBC 3550 with a minimum grade of D-

**Term Offered:** Spring

### MBC 3800 Microbiology And Immunology

[3 credit hours]

A lecture course with emphasis on how the immune system protects the body against bacterial, viral and parasitic invaders. Medically important human infectious diseases are described as well as chemotherapeutic intervention.

**Prerequisites:** MBC 3550 with a minimum grade of D-

**Term Offered:** Spring

### MBC 3850 Microbiology And Immunology Laboratory

[1 credit hour]

A laboratory course that follows the course material presented in MBC 3800. Both immunology and microbiology experiments that are medically useful and clinically important will be performed.

**Corequisites:** MBC 3800

**Term Offered:** Spring

### MBC 3860 Microbiology for Pharmaceutical Professionals

[2 credit hours]

This is a lecture and laboratory course with emphasis on microorganisms that cause disease. Special attention will be paid to structures and mechanisms present in microorganisms that can be exploited to inhibit the growth and survival of these organisms in a human host.

**Prerequisites:** MBC 3550 with a minimum grade of D-

### MBC 3880 Medicinal And Biological Chemistry Laboratory

[3 credit hours]

Laboratory and lecture teaching fundamental laboratory skills in synthetic medicinal chemistry.

**Term Offered:** Spring, Fall

**MBC 4300 MEDICINAL CHEMISTRY III: INFECTIOUS DISEASE CHEMOTHERAPY**

[2 credit hours]

The chemical basis for the action of drugs and immune system products that counter infectious disease.

**Prerequisites:** MBC 3800 with a minimum grade of C

**Term Offered:** Spring

**MBC 4380 Medicinal Plants**

[3 credit hours]

A lecture/field course emphasizing medicinal and poisonous plants of this locale.

**Term Offered:** Summer

**MBC 4470 Advanced Immuno-Therapeutics**

[2 credit hours]

This course emphasizes the development of methods for immunotherapeutic intervention in cancer and autoimmune and infectious disease. The course has a seminar/discussion/student presentation format.

**Prerequisites:** MBC 4300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MBC 4710 Targeted Drug Design**

[3 credit hours]

A survey of novel macromolecular targeting approaches to drug design in important human disorders. The course has a seminar/discussion/student presentation format.

**Prerequisites:** MBC 3320 with a minimum grade of D-

**Term Offered:** Summer, Fall

**MBC 4720 Advances In Drug Design**

[3 credit hours]

A survey of novel approaches to drug design and development. The course has a seminar/discussion/student presentation format.

**Prerequisites:** MBC 3320 with a minimum grade of D-

**MBC 4780 Internship in Medicinal Chemistry**

[6-12 credit hours]

An experiential course in which students acquire practical knowledge through hands-on experience in an area of medicinal and biological chemistry by working in an academic, private or government laboratory or professional site.

**Prerequisites:** MBC 3320 with a minimum grade of D- and MBC 3560 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MBC 4850 Advanced Immunology And Tissue Culture Laboratory**

[1-10 credit hours]

Research experience in medicinally related immunology including literature investigations, tissue culture, cell sorting and sterile biotechniques and culminating with a seminar and written report.

**Term Offered:** Spring, Summer, Fall

**MBC 4870 Biomedical Chemistry Laboratory**

[1-10 credit hours]

Research experience in biomedical chemistry including literature investigations and chemical synthesis of medicinally important compounds and culminating with a seminar and written report.

**Term Offered:** Spring, Fall

**MBC 4900 Honors Seminar In Medicinal And Biological Chemistry**

[1-3 credit hours]

An examination of a specific question in the context of the primary literature in medicinal or biological chemistry.

**Term Offered:** Spring, Summer, Fall

**MBC 4910 Problems In Biomedical Chemistry**

[1-3 credit hours]

Selected study of topics in biomedical chemistry. New chemical and biochemical strategies in drug design are examined in detail.

**Term Offered:** Spring, Summer, Fall

**MBC 4950 Research In Medicinal Chemistry**

[3-8 credit hours]

Selected research and study in medicinal chemistry.

**Term Offered:** Spring, Summer, Fall

**MBC 4960 Honors Thesis In Medicinal And Biological Chemistry**

[2-5 credit hours]

An examination of a specific research question in medicinal or biological chemistry that can be answered through experimental work.

**Term Offered:** Spring, Summer, Fall

**MBC 4980 Special Topics In Drug Design**

[1-4 credit hours]

A detailed examination of new chemical and biochemical strategies in drug design.

**Prerequisites:** (MBC 3320 with a minimum grade of D- and MBC 3560 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## BSPS in Medicinal Chemistry (MBC)

Medicinal and biological chemistry is an interdisciplinary science. This major focuses on synthetic organic chemistry, biochemistry, molecular biology, biotechnology, pharmacology and pharmaceutical chemistry underlying the design, synthesis and development of drugs.

## BSPS Internship Description

All six majors in the Bachelor of Science in Pharmaceutical Sciences degree program require a real-life workplace internship available in a variety of appropriate settings at local, regional, national and international sites. Most students schedule their internships in the summer after their P1 year. Students are generally assigned to ongoing projects at the site and are evaluated on their performance by the site supervisor. A written internship paper or a technical report and/or a presentation, along with the supervisor's evaluation are submitted to the internship course instructor following completion of the experience.

## Medicinal and Biological Chemistry (MBC) Major & Master of Science (M.S.) in Medicinal Chemistry (MC) Option

The combination of BSPS and M.S. in MBC gives students the ability and choice to get two degrees in five years. Students in this program are able to complete the BSPS portion in 3.5 years by graduating in December of the P2 year.

Once the B.S.P.S. degree is awarded the student can move from provisional to accepted in the graduate program. Information on and

requirements for the M.S. portion of the B.S.P.S. MBC Major & M.S. MC option is in the CPPS Graduate Catalog in the section entitled: Master of Science in Medicinal Chemistry.

The student would begin the Master's portion in the spring semester following the B.S.P.S. MBC graduation at the end of the Fall term, and could complete the M.S. degree by the end of the spring semester of the following year. Therefore the two degrees, B.S.P.S. MBC and M.S. MC, could be accomplished in 5 calendar years.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BSPPS MEDICINAL AND BIOLOGICAL CHEMISTRY MAJOR CURRICULUM (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER)

### PREPROFESSIONAL

Course	Title	Hours
<b>First Term</b>		
PHPR 1000	Orientation	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15
<b>Second Term</b>		
PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science *2	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
Hours		17
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
Hours		14
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3

Arts/Humanities Core <sup>3</sup>	3
Arts/Humanities Core <sup>3</sup>	3
Non#US Diversity <sup>3</sup>	3
Hours	16
Total Hours	62

<sup>1</sup> Only offered during fall semesters

<sup>2</sup> Not required prior to P1 for BSPPS-only applicants

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH1320 or MATH1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

### PROFESSIONAL

Course	Title	Hours
<b>Fifth Term</b>		
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3330	Techniques in Pharmaceutical and Medicinal Chemistry	2
MBC 3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
MBC Laboratory (Recommend MBC 3880) <sup>1</sup>		3
Major Elective <sup>2</sup>		2
Hours		16
<b>Sixth Term</b>		
MBC 3100	Practices in Pharmaceutical Research	1
MBC 3320	Medicinal Chemistry II: Drug Design and Drug Action	3
MBC 3560	Physiological Chemistry II: Chemical Regulation Of Cells And Organisms	3
PHCL 3730	BSPPS Pharmacology II: Endocrine and CNS Pharmacology	3
MBC Laboratory (Recommend MBC 4870) <sup>1</sup>		3
Major Elective (Recommend MBC 3860) <sup>2</sup>		2
Hours		15
<b>Seventh Term</b>		
MBC 4710	Targeted Drug Design <sup>3</sup>	3
MBC Laboratory (Footnote 1) or Major Elective (Footnote 2) <sup>1</sup>		13

<sup>2</sup>

Free electives, if necessary	2
Hours	18
<b>Eighth Term</b>	
MBC 4780 Internship in Medicinal Chemistry <sup>4</sup>	6-12
Hours	6-12
Total Hours	55-61

<sup>1</sup> The MBC major requires that 3 semester hours of laboratory instruction be taken at the 3000 level or higher in a course taught by the MBC Department. Completion of 3 semester hours of any of the following courses will satisfy this requirement: MBC 3880, MBC 4850, MBC 4870, MBC 4880, MBC 4900, MBC 4950, or MBC 4960.

<sup>2</sup> A total of 20 hours of course work to be chosen from the MBC electives list.

<sup>3</sup> MBC 4720, Advances in Drug Design, when offered, will also fulfill the requirement.

<sup>4</sup> Internship can be taken in summer before P2 year.

All requirements listed above must be fulfilled with a minimum of 120 semester hours required for graduation.

## MBC Electives

A total of 20 hours of course work must be selected from the list of elective courses below. Other electives require approval of the MBC adviser.

Code	Title	Hours
BIOL 3010	Molecular Genetics	3
BIOL 3020	Molecular Genetics Laboratory	2
BIOL 3030	Cell Biology	3
BIOL 3040	Cell Biology Laboratory	2
BIOL 4010	Molecular Biology	3
BIOL 4030	Microbiology	3
BIOL 4050	Immunology	3
BIOL 4110	Human Genetics and Genomics	3
BIOL 4330	Parasitology	3
CHEM 3310	Analytical Chemistry	2
CHEM 3360	Analytical Chemistry Laboratory	2
CHEM 3560	Biochemistry Laboratory	2
CHEM 3610	Inorganic Chemistry I	3
CHEM 3720	Physical Chemistry For The Biosciences II	3
CHEM 3730	Physical Chemistry I	3
CHEM 3740	Physical Chemistry II	3
CHEM 3860	Advanced Laboratory I	2
CHEM 3870	Advanced Laboratory II	2
CHEM 4300	Instrumental Analysis	2
CHEM 4620	Inorganic Chemistry II	3
CHEM 4880	Advanced Laboratory III	2
CHEM 4980	Special Topics In Chemistry	2
EEES 4150	Evolution	3
EEES 4300	Field Botany	3
EEES 4450	Hazardous Waste Management	3

EEES 4510	Environmental Microbiology	3
MBC 3800	Microbiology And Immunology	3
MBC 4300	MEDICINAL CHEMISTRY III: INFECTIOUS DISEASE CHEMOTHERAPY	2
MBC 3860	Microbiology for Pharmaceutical Professionals	2
MBC 4470	Advanced Immuno-Therapeutics	2
MBC 4720	Advances In Drug Design	3
MBC 4850	Advanced Immunology And Tissue Culture Laboratory	1-10
MBC 4870	Biomedical Chemistry Laboratory	1-10
MBC 4900	Honors Seminar In Medicinal And Biological Chemistry	1-3
MBC 4910	Problems In Biomedical Chemistry	1-3
MBC 4950	Research In Medicinal Chemistry	3-8
MBC 4950	Research In Medicinal Chemistry (Honors)	3-8
MBC 4960	Honors Thesis In Medicinal And Biological Chemistry	2-5
MBC 4980	Special Topics In Drug Design	1-4
PHCL 4810	BSPS Pharmacology III: CNS and Cardiovascular Pharmacology	3
PHCL 4820	BSPS Pharmacology IV: Chemotherapeutic Agents	3
PHCL 4730	Toxicology I	3
PHCL 4750	Toxicology II	3
PHCL 4760	Toxicokinetics	3

## Department of Pharmacy Practice

Dr. Diane Cappelletty, Chair

The Department of Pharmacy Practice consists of 24 faculty members in the divisions of Pharmacy Practice, Health Outcomes and Socioeconomic Sciences, and Pharmaceutics and Industrial Pharmacy. The faculty of the department represents a diverse group of interests and activities that lead to the accomplishment of mission of the College and University in each of the division disciplines. In addition, over 300 community-based faculty assist the department in the teaching mission by providing training sites. The Department faculty practice in a variety of healthcare settings.

## Degrees Offered

- BSPS in Cosmetic Science and Formulation Design (PCOS) (p. 454)
- BSPS in Pharmaceutics (PHAR) (p. 456)
- BSPS in Pharmacy Administration (PHAM) (p. 458)
- Cosmetic Science Minor (p. 459)

### PHPR 1000 Orientation

[1 credit hour]

Lectures and small group discussions include University, Freshman Orientation, FYI subjects, plus introductory elements of Pharmacy professional culture.

**Term Offered:** Fall

**PHPR 2040 Introduction to Cosmetic Science**

[1 credit hour]

An overview of the cosmetic and personal care industry. Topics will include business factors driving the industry, legal considerations which govern the industry, marketing views and perspectives, and various jobs available within the industry for student consideration after their graduation. An individual project will be required and will be present to the entire class.

**Term Offered:** Spring, Fall**PHPR 3000 Pharmaceuticals and Dosage Form Design**

[5 credit hours]

The lectures and labs in Pharmaceuticals and Dosage Form Design have an overarching theme of drug product knowledge. Topics for the lectures and labs include drug product design, pharmaceutical calculations, and an emphasis on contemporary pharmacy compounding.

**PHPR 3010 Pharmaceutical Calculations**

[2 credit hours]

This course is intended to present the principles involved in solving any mathematical problem which may be encountered in the practice of pharmacy-logical thought processes will be used.

**Term Offered:** Fall**PHPR 3020 Pharmaceuticals I**

[3 credit hours]

A lecture introduction to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

**Corequisites:** PHPR 3010**Term Offered:** Fall**PHPR 3030 Pharmaceuticals II**

[3 credit hours]

A continuation of PHPR 3020 as a lecture to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

**Prerequisites:** PHPR 3020 with a minimum grade of D- and PHPR 3010 with a minimum grade of D-**Term Offered:** Spring**PHPR 3040 Cosmetic Raw Materials**

[2 credit hours]

Physical, chemical and cosmetic properties, function and use of the varied raw materials used in cosmetics and personal care products. Students will learn how and why these ingredients are present and how to select them for a given formulation. Topics include moisturizers, peptides, surfactants, silicones, preservatives, antioxidants, chelating agents, flavors and sweeteners, color additives, fragrances, thickeners, functional materials, active ingredients and miscellaneous ingredients.

**Prerequisites:** CHEM 1230 with a minimum grade of D- and CHEM 1240 with a minimum grade of D-**Term Offered:** Spring, Fall**PHPR 3050 Interprofessional Approach to Patient Care**

[1 credit hour]

This course has been designed to prepare all health professions students to deliberately and constructively work together with the common goal of building a safer, better patient-centered and community/population-oriented U.S. health care system. Students will be assigned to small-group interprofessional teams, and given opportunities to interact and collaborate with students from other healthcare professions.

**PHPR 3060 Introduction to Patient Care**

[1 credit hour]

This course will introduce concepts relative to the patient care process and the understanding of the pathophysiology and pharmacotherapy of disease states. The course will discuss commonly used clinical laboratory tests and how to interpret and apply their results to improve patient care, identify patient specific factors that impact medication dosing.

**Prerequisites:** MBC 3310 with a minimum grade of D- and PHCL 3700 with a minimum grade of D-**Corequisites:** PHPR 3460**Term Offered:** Spring**PHPR 3070 Pharmaceuticals and Pharmaceutical Technology I**

[4 credit hours]

Course considers the principles and thought processes involved in solving pharmacy-related mathematical problems and the theory and processes involved in the manufacture and extemporaneous compounding of dosage forms.

**Term Offered:** Fall**PHPR 3080 PPD-2**

[4 credit hours]

Further exploration of the principles, theory and processes involved in the development and preparation of parenteral, ophthalmic and other non-oral drug delivery systems.

**Term Offered:** Spring**PHPR 3100 Emulsion Science**

[1 credit hour]

Emulsion and aligned colloidal phenomena is at the core of most cosmetic and personal care formulation technology. This course will provide an overview of emulsion formulation basics including reversible and irreversible formulation changes and emulsion stabilization techniques.

**Prerequisites:** PHPR 3040 with a minimum grade of D-**PHPR 3110 Pharmaceuticals Lab I**

[1 credit hour]

A laboratory introduction to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

**Corequisites:** PHPR 3010, PHPR 3020**PHPR 3120 Pharmaceuticals Lab II**

[1 credit hour]

A laboratory course that follows PHPR 3025 that introduces principles, theory, and processes involved in the manufacture and compounding of various classes of dosage forms.

**Corequisites:** PHPR 3030**PHPR 3130 PPT-1**

[2 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of attention deficit hyperactivity disorder, sleep disorders, acid-base, fluid & electrolytic imbalances, pain and substance abuse.

**Corequisites:** MBC 3310, PHCL 3700**Term Offered:** Fall



**PHPR 3140 PPT-2**

[2 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of endocrine disorders and reproduction.

**Prerequisites:** PHPR 3130 with a minimum grade of C

**Corequisites:** MBC 3320, MBC 3560, PHCL 3720

**Term Offered:** Spring

**PHPR 3250 Introduction to Self Care**

[1 credit hour]

The course will provide an introduction to the over-the-counter marketplace and discussion of the pharmacist's patient care process. Special emphasis will be placed on how pharmacists should help patients safely and effectively treat common medical problems.

**Prerequisites:** PHPR 3450 with a minimum grade of D- and PHCL 3700 with a minimum grade of D-

**Corequisites:** PHPR 3460

**PHPR 3260 PHCAD-1**

[2 credit hours]

Description and analysis of the organization, financing and delivery of healthcare in the U.S.. Development of communication skills for pharmacists to function optimally in the system is emphasized.

**Term Offered:** Spring, Fall

**PHPR 3300 Commonly Prescribed Meds and Med Term 1**

[1 credit hour]

This course introduces students to commonly prescribed medications and medical terminology.

**PHPR 3310 Introduction to Pharmacy Law**

[1 credit hour]

The purpose of this course is to introduce students to laws that regulate the practice of pharmacy. Federal drug laws and specific state laws that regulate the filling and dispensing of prescriptions will be reviewed and applied.

**PHPR 3450 Pharmacy Skills Development-1**

[2 credit hours]

This course is designed to introduce students to the Pharmacists' Patient Care Process as it is applied to the Community Pharmacy Setting in order to prepare them for their Community Pharmacy Introductory Pharmacy Practice Experiences.

**PHPR 3460 Pharmacy Skills Development-2**

[2 credit hours]

The course will develop skills in the Pharmacists' Patient Care Process (PPCP) as they are applied to the Community Pharmacy Setting and prepare students for skill development in medication therapy management.

**Prerequisites:** PHPR 3450 with a minimum grade of D-

**PHPR 3470 Pharmacokinetics**

[3 credit hours]

This course will provide the theoretical basis and clinical application of pharmacokinetics as relates to drug dosing, absorption, distribution, biotransformation and excretion.

**PHPR 3670 Chemical Dependency and The Pharmacist**

[3 credit hours]

Overview of chemical dependency and substance abuse, with emphasis on the neuropathophysiology of dependency and the pharmacology of drugs of abuse. Also includes extensive review of the impact of chemical dependency on the healthcare professional, with a focus on the impact of pharmacists.

**Term Offered:** Summer

**PHPR 3920 Introductory Pharmacy Practice Experience I**

[1 credit hour]

First professional year course designed to enhance professional growth through an introduction to clinical skill development and direct patient care activities within institutional and community pharmacy practice settings. Prerequisite: Admission into the Pharm.D. Program.

**Term Offered:** Spring, Summer, Fall

**PHPR 3930 Introductory Pharmacy Practice Experience 2**

[1 credit hour]

First professional year course designed to enhance professional growth through an introduction to clinical skill development and direct patient care activities within institutional and community pharmacy practice settings. Prerequisite: Admission into the Pharm.D Program.

**Term Offered:** Spring

**PHPR 4050 Pharmacy Skills Development-3**

[2 credit hours]

This course will enhance skills in interpersonal communication with emphasis on application of one-to-one communication and patient counseling. Also includes the development of skills in the delivery of immunizations and medication therapy management (MTM).

**Prerequisites:** PHPR 3460 with a minimum grade of D-

**PHPR 4070 PPD-3**

[3 credit hours]

Interpersonal communication with emphasis upon application of one-to-one communication and patient counseling. Instruction in the broad dimension of professional pharmacy practice and responsibility for providing pharmaceutical care, and use of drug information resources, and provision of drug information.

**Prerequisites:** PHPR 3070 with a minimum grade of C

**Term Offered:** Fall

**PHPR 4080 PPD-4**

[3 credit hours]

Course enhances professional development to meet specific patient and health care practitioner needs. Instruction includes effective literature analysis, presentation of care plans, and pharmacy jurisprudence.

**Prerequisites:** PHPR 4070 with a minimum grade of C

**Corequisites:** PHPR 4140, PHPR 4330

**Term Offered:** Spring

**PHPR 4130 PPT-3**

[4 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of immune, renal and rheumatologic disorders and transplantation.

**Prerequisites:** PHPR 3140 with a minimum grade of C and MBC 3800 with a minimum grade of C

**Corequisites:** PHCL 4700

**Term Offered:** Fall

**PHPR 4140 PPT-4**

[4 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of immunology and infectious diseases

**Prerequisites:** MBC 3800 with a minimum grade of C

**Corequisites:** MBC 4300, PHCL 4720

**Term Offered:** Spring

**PHPR 4160 Pharmacokinetics**

[3 credit hours]

Theoretical basis and clinical application of pharmacokinetics as relates to drug dosing, absorption, distribution, biotransformation, and excretion.

**Term Offered:** Spring, Fall

**PHPR 4220 Medication Therapy Management**

[2 credit hours]

This course focuses on the various aspects of Medication Therapy Management (MTM) services and programs.

**PHPR 4270 Health Systems**

[1.5 credit hours]

This course will provide an overview of the organization, financing and delivery of healthcare in the U.S.

**PHPR 4300 Commonly Prescribed Meds and Med Term II**

[1 credit hour]

This course further develops students' knowledge of commonly prescribed medications and medical terminology.

**Prerequisites:** PHPR 3300 with a minimum grade of D-

**PHPR 4330 RESEARCH DESIGN AND DRUG LITERATURE EVALUATION I**

[2 credit hours]

Concepts of research design, statistical analysis, literature evaluation and evidence based medicine are introduced and integrated in a manner that depicts their practical relevance to pharmacy practice.

**Corequisites:** PHPR 4080

**Term Offered:** Spring

**PHPR 4350 Pharmacy Skills Development - 3**

[2 credit hours]

This course will enhance skills in interpersonal communication with emphasis on application of one-to-one communication and patient counseling. Also includes the development of skills in the delivery of immunizations and medication therapy management (MTM).

**Prerequisites:** PHPR 3460 with a minimum grade of D-

**Corequisites:** PHPR 4220

**PHPR 4360 Pharmacy Skills Development - 4**

[2 credit hours]

This course considers the principles and thought processes of the Pharmacists' Patient Care Process (PPCP) as it relates to institutional based pharmacy practice as well as the resources and critical thinking skills to evaluate and answer complex patient and population based drug information questions.

**Prerequisites:** PHPR 4350 with a minimum grade of D- and PHPR 4530 with a minimum grade of D-

**PHPR 4450 Pathophysiology And Pharmacotherapy: Renal**

[3 credit hours]

Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of renal disease states.

**PHPR 4470 Applied Clinical Pharmacokinetics Primer**

[1 credit hour]

This course is a discussion of pharmacokinetic concepts which are commonly utilized in therapeutic drug monitoring and clinical application.

**Prerequisites:** PHPR 3470 with a minimum grade of D-

**Corequisites:** PHM 4030

**PHPR 4520 PHCAD-2**

[2 credit hours]

This course is to introduce students to the administrative sciences (marketing/management, etc.) and their respective roles in the provision of pharmaceutical care.

**Prerequisites:** PHPR 3260 with a minimum grade of C

**Term Offered:** Spring

**PHPR 4530 Evidence Based Medicine 1**

[3 credit hours]

This course introduces the principles and practice of evidence based medicine (EBM) in guiding clinical decision making in pharmacy practice.

**Prerequisites:** MATH 2640 with a minimum grade of D- or MATH 2600 with a minimum grade of D-

**PHPR 4540 Evidence Based Medicine 2**

[2 credit hours]

This course expands upon the principles and practice of evidence based medicine (EBM) in guiding clinical decision making in pharmacy practice. Students will develop their formal oral presentation skills.

**Prerequisites:** PHPR 4530 with a minimum grade of D-

**Corequisites:** PHPR 4360

**PHPR 4550 Analysis Of The Pharmaceutical Environment**

[3 credit hours]

A theoretical and practical examination of the pharmaceutical environment and drug distribution system using the science of marketing as a tool for analysis.

**Term Offered:** Spring

**PHPR 4600 Seminar in Pharmacy Administration**

[1 credit hour]

This course provides a global perspective on pharmacy administration and healthcare related issues, including economic, humanistic, clinical, and other aspects of disease management. Prerequisite: Enrollment in the BSPS in Pharmacy Administration program or permission of instructor

**Term Offered:** Fall

**PHPR 4610 Pharmacoeconomics And Outcomes I**

[3 credit hours]

This course emphasizes introductory concepts, methods, and practical procedures for pharmacoeconomic analysis and outcomes research.

The student will understand and develop instruments for assessing patients' health status, quality of life, satisfaction and cost-effectiveness for pharmacoeconomic and health outcomes research. Prerequisite:

Enrollment in the BSPS in Pharmacy Administration program or

permission of instructor

**Term Offered:** Spring

**PHPR 4640 Cosmetic Science Essentials**

[3 credit hours]

The course will provide a brief overview of the basic definitions regarding cosmetics and over-the-counter/cosmetic combination products and the current FDA requirements. Topics will cover the structure and functions of skin, hair, lips, eye lashes, nails and teeth; disorders of the skin, hair and oral cavity as well as the formulation, manufacturing, safety testing and quality control issues of cosmetics and personal care preparations.

**PHPR 4680 Parenteral Manufacturing**

[2 credit hours]

The theory and technology of parenteral and ophthalmic formulation design, production, sterilization, packaging and stability.

**Prerequisites:** (PHPR 3010 with a minimum grade of D- and PHPR 3070 with a minimum grade of D- and PHPR 3080 with a minimum grade of D-)

**PHPR 4690 Dosage Form Design**

[3 credit hours]

The utilization of pharmaceutical principles and practices for the design and manufacture of modern commercial dosage forms such as tablets, aerosols, emulsions, suspensions and solutions emphasizing biopharmaceutically efficacious products.

**Prerequisites:** (PHPR 3070 with a minimum grade of D- and PHPR 3080 with a minimum grade of D- and PHPR 3010 with a minimum grade of D-)

**PHPR 4710 Selected Topics In Pharmaceutical Technology**

[3 credit hours]

Discussion, evaluation, experimentation and production of selected dosage forms. A forum for the discussion of new dosage form technology and advances.

**Prerequisites:** (PHPR 3010 with a minimum grade of D- and PHPR 3070 with a minimum grade of D-)

**Term Offered:** Fall**PHPR 4720 Pharmaceutical Rate Processes**

[3 credit hours]

A theoretical and practical application of kinetic principles applied to pharmaceutical and cosmetic systems in liquid and solid state. A mathematical treatment and development of the equations which support each reaction mechanism.

**Term Offered:** Fall**PHPR 4730 Cosmetic Science I**

[3 credit hours]

This course focuses on cosmetics and personal care products for both genders with an emphasis on ingredient selection, product design, formulation development, preparation, product testing, packaging and regulatory requirements. Topics discussed include makeup products for the lips, eyes, face and nails as well as oral care products and deodorants/antiperspirants. Guest speakers from the cosmetic and personal care industry are regularly invited to the classes.

**Prerequisites:** PHPR 3040 with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4740 Cosmetic Science Laboratory I**

[1 credit hour]

A basic laboratory course in personal care cosmetics for both men and women with emphasis on the product design, formulation development, preparation and packaging of Lipsticks, lip balms, eye shadow, eye liners, foundation make-up, theatrical make-up, rouge, face powders, etc. Laboratory activities will also consider marketing, advertisement creation for radio, TV, bill boards, newspaper and magazines as well as other activities.

**Prerequisites:** PHPR 3030 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4750 Cosmetic Science II**

[3 credit hours]

This course focuses on cosmetics and personal care products for both genders with an emphasis on ingredient selection, product design, formulation development, preparation, product testing, packaging and regulatory requirements. Topics discussed include skin cleanser, skin moisturizers, anti-acne and anti-aging products, shampoos and hair conditioners, hair styling products, hair coloring products, hair removal products, baby care products, sunscreens and sunless tanners. Guest speakers from the cosmetic and personal care industry are regularly invited to the classes.

**Prerequisites:** PHPR 4730 with a minimum grade of D- and PHPR 4740 with a minimum grade of D- and PHPR 3010 with a minimum grade of D- and PHPR 3020 with a minimum grade of D- and PHPR 3030 with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4760 Cosmetic Science Laboratory II**

[1 credit hour]

A basic course in personal care cosmetics for both men and women with emphasis on the theory, product design, formulation development, preparation and packaging of hair care and coloring, shampoos and rinses, skin care products, creams, lotions, sunscreens, oral care products including mouthwash tooth paste and powders, baby care products, etc. Consideration of marketing, ad creation for radio, TV, bill boards, newspapers and magazines will be incorporated as part of the laboratory activities.

**Prerequisites:** PHPR 4730 with a minimum grade of D- and PHPR 4740 with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4770 Advanced Drug Delivery Systems - I**

[3 credit hours]

PHPR4770: The development of drug delivery systems relies on the broad understanding of many different physiological, chemical, and biological factors. This course is designed to introduce advanced drug delivery systems for oral, ocular, transdermal and buccal delivery. The course design is based on the premise that the student desires knowledge about the latest developments in formulation and drug delivery.

**Prerequisites:** PHPR 3020 with a minimum grade of D- and PHPR 3030 with a minimum grade of D-

**PHPR 4780 Internship In Pharmacy Administration**

[3-6 credit hours]

An experiential course in which students acquire practical knowledge through hands-on experience in an area of pharmacy administration by working in an academic or non-academic (private business) environment.

**Term Offered:** Spring, Summer, Fall

**PHPR 4810 Finance and Personal Planning for Pharmacists**

[1 credit hour]

Practical topics on financial, professional, and personal situations to better prepare students to make knowledgeable decisions that affect future security and success.

**Term Offered:** Spring**PHPR 4880 Internship in Pharmaceutics**

[3-6 credit hours]

Students will acquire practical knowledge and hands-on experience in the areas of pharmacy administration or industrial pharmacy/pharmaceutics by working in the pharmaceutical industry or with health care systems.

**Term Offered:** Spring, Summer, Fall**PHPR 4890 Internship in Cosmetic Science and Formulation Design**

[3-6 credit hours]

An experiential course in which students acquire practical knowledge through hands-on experience in an area of cosmetic science by working in an academic, private or government laboratory or professional site.

**Term Offered:** Spring, Summer, Fall**PHPR 4900 Honors Seminar In Pharmacy Practice**

[1-3 credit hours]

An examination of a specific question in the context of the primary literature in pharmacy practice for advanced students.

**Term Offered:** Spring, Summer, Fall**PHPR 4910 Pharmacy Practice Problems**

[1-5 credit hours]

Selected undergraduate research projects in pharmacy practice.

**Term Offered:** Spring, Summer, Fall**PHPR 4920 Introductory Pharmacy Practice Experience 3**

[1 credit hour]

The purpose of this course is to increase students' awareness and involvement in areas related to the contemporary practice of pharmacy. Students will participate in projects that nurture their professional growth.

**Prerequisites:** PHPR 3930 with a minimum grade of C**Term Offered:** Spring, Summer, Fall**PHPR 4930 Introductory Pharmacy Practice Experience 4**

[1 credit hour]

The purpose of this course is to increase students' awareness and involvement in areas related to the contemporary practice of pharmacy. Students will participate in projects that nurture their professional growth.

**Prerequisites:** PHPR 4920 with a minimum grade of C**Term Offered:** Spring, Summer**PHPR 4960 Honors Thesis In Pharmacy Practice**

[2-5 credit hours]

An examination of a specific research question in pharmacy practice which can be answered through application of experimental work.

**Term Offered:** Spring, Summer, Fall

## BSPS in Cosmetic Science and Formulation Design (PCOS)

The Cosmetic Science and Formulation Design major is an interdisciplinary program involved with developing, formulating, producing, and testing cosmetics and personal care products. The major

places a strong emphasis on the design and formulation of personal care and beauty products, and as part of their experience, students formulate 50+ personal care and cosmetic products in the laboratory during their studies. Cosmetic science majors also study the art and business of cosmetics in various elective and required courses. Additionally, students in this major learn about regulations and how to assess products' safety, performance and quality.

## BSPS Internship Description

All six majors in the Bachelor of Science in Pharmaceutical Sciences degree program require a real-life workplace internship available in a variety of appropriate settings at local, regional, national and international sites. Most students schedule their internships in the summer after their P1 year. Students are generally assigned to ongoing projects at the site and are evaluated on their performance by the site supervisor. A written internship paper or a technical report and/or a presentation, along with the supervisor's evaluation are submitted to the internship course instructor following completion of the experience.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BSPS Cosmetic Science and Formulation Design MAJOR Curriculum (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER)

### PREPROFESSIONAL

Course	Title	Hours
<b>First Term</b>		
PHPR 1000	Orientation	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15

<b>Second Term</b>		
PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science *2	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
Hours		17

<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
Hours		14
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Non#US Diversity <sup>3</sup>		3
Hours		16
Total Hours		62

<sup>1</sup> Only offered during fall semesters

<sup>2</sup> Not required prior to P1 for BSPS-only applicants

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH1320 or MATH1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

## PROFESSIONAL

Course	Title	Hours
<b>Fifth Term</b>		
PHPR 3010	Pharmaceutical Calculations	2
PHPR 3020	Pharmaceutics I	3
PHPR 3110	Pharmaceutics Lab I	1
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
PHPR 3040	Cosmetic Raw Materials	2
PHPR 2040	Introduction to Cosmetic Science <sup>1</sup>	1
PSLS 3000	Sales Career Orientation And Management	1
Hours		16
<b>Sixth Term</b>		
PHPR 3030	Pharmaceutics II	3
PHPR 3120	Pharmaceutics Lab II	1
MBC 3560	Physiological Chemistry II: Chemical Regulation Of Cells And Organisms	3
PHPR 4730	Cosmetic Science I	3
PHPR 4740	Cosmetic Science Laboratory I	1

BUAD 3010	Principles Of Marketing	3
Hours		14

### Seventh Term

PHPR 4890	Internship in Cosmetic Science and Formulation Design <sup>2</sup>	3-6
Hours		3-6

### Eighth Term

MBC 3330	Techniques in Pharmaceutical and Medicinal Chemistry	2
MBC 3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1
PHCL 4760	Toxicokinetics	3
PHPR 4750	Cosmetic Science II	3
PHPR 4760	Cosmetic Science Laboratory II	1
PHPR 4770	Advanced Drug Delivery Systems - I	3
Hours		13

### Ninth Term

Cosmetic Science Electives <sup>3</sup>		13
MBC 3860	Microbiology for Pharmaceutical Professionals	2
Hours		15
Total Hours		61-64

<sup>1</sup> If not taken during pre-professional division.

<sup>2</sup> 3 credit hours are required, an additional 1-3 credit hours can be taken, The additional credit hours cannot be used as Cosmetic Science elective hours.

<sup>3</sup> See Cosmetic Science elective list.

## Cosmetic Science and Formulation Design Electives (must take 13 credits from the list):

A minimum of 7 credits must come from the following elective courses:

Code	Title	Hours
PHPR 4900	Honors Seminar In Pharmacy Practice	1-3
PHPR 4910	Pharmacy Practice Problems	1-5
PHPR 4960	Honors Thesis In Pharmacy Practice	2-5
CHEM 3730	Physical Chemistry I	3
CHEM 3740	Physical Chemistry II	3
ECON 4750	Health Economics	3
MBC 4380	Medicinal Plants	3
HEAL 2800	Principles Of Nutrition	3
BIOL 3030	Cell Biology	3
BIOL 3040	Cell Biology Laboratory	2
ART 1050	Foundations of 2D Design	3
PHPR 3100	Emulsion Science	1
CMPT 2410	Adobe InDesign Desktop Publishing	3
HEAL 3500	Environmental Health	3
ECON 3240	Environmental Economics	3
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2



Up to 6 credits may come from the following courses:

Code	Title	Hours
PSLS 3440	Professional Sales	3
PSLS 3450	Sales Technologies and Strategies	3
PSLS 4740	Advanced Sales	3
PSLS 3080	Purchasing And Business Relationship Management	3
PSLS 4710	Salesforce Leadership	3
MKTG 4540	Business Marketing	3
MKTG 3690	Principles Of Marketing Communications	3
MKTG 3850	Buyer Behavior And Relationship Marketing	3

Code	Title	Hours
Preprofessional		62
Professional		61

Please Note: If double-dip one of the UT Core courses, the courseload will be reduced from 123 to 120.

Total Hours 123

## BSPS COSMETIC SCIENCE AND FORMULATION DESIGN MINOR CURRICULUM

**Required core courses (4 courses totaling 9 credit hours required)**

### COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Code	Title	Hours
PHPR 2040	Introduction to Cosmetic Science (Fall)	1
PHPR 3040	Cosmetic Raw Materials (Fall)	2
PHPR 4730	Cosmetic Science I (Spring)	3
PHPR 4750	Cosmetic Science II (Fall)	3

### ELECTIVE COURSES (Select 6 credit hours)

#### COLLEGE OF NATURAL SCIENCES AND MATHEMATICS

Code	Title	Hours
CHEM 3510	Biochemistry I (Fall)	3
CHEM 3610	Inorganic Chemistry I (Spring)	3
CHEM 4720	Modern Topics in Physical Chemistry (Spring)	4
CHEM 4200	Green Chemistry (Fall)	3
CHEM 4810	Materials Science I (Fall)	4
CHEM 4820	Materials Science II (Spring)	4

#### COLLEGE OF ENGINEERING

Code	Title	Hours
CHEE 4800	Polymer Science And Engineering (Fall)	3
CHEE 4960	Senior Honors Thesis (Fall, Spring & Summer)	3
CHEE 4980	Special Topics In Chemical Engineering (Fall, Spring & Summer)	1-4
CHEE 4990	Independent Studies In Chemical Engineering (Fall, Spring & Summer)	1-4

### COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Code	Title	Hours
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY (Fall)	3
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules (Fall)	3
MBC 3560	Physiological Chemistry II: Chemical Regulation Of Cells And Organisms (Spring)	3
MBC 3330	Techniques in Pharmaceutical and Medicinal Chemistry (Fall)	2
MBC 3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory (Fall)	1
PHCL 4760	Toxicokinetics (Fall)	3

## BSPS in Pharmaceutics (PHAR)

Pharmaceutics is a multidisciplinary applied science that studies the physical and chemical attributes of drugs. It places a strong emphasis on the design and evaluation of drug delivery systems and dosage forms and also on the understanding and control of the factors influencing clinical response to drug therapy.

### BSPS Internship Description

All six majors in the Bachelor of Science in Pharmaceutical Sciences degree program require a real-life workplace internship available in a variety of appropriate settings at local, regional, national and international sites. Most students schedule their internships in the summer after their P1 year. Students are generally assigned to ongoing projects at the site and are evaluated on their performance by the site supervisor. A written internship paper or a technical report and/or a presentation, along with the supervisor's evaluation are submitted to the internship course instructor following completion of the experience.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BSPS Pharmaceutics MAJOR Curriculum (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER)

### PREPROFESSIONAL

Course	Title	Hours
<b>First Term</b>		
PHPR 1000	Orientation	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15

**Second Term**

PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science <sup>*2</sup>	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
Hours		17

**Third Term**

CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
Hours		14

**Fourth Term**

CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Non#US Diversity <sup>3</sup>		3
Hours		16
Total Hours		62

<sup>1</sup> Only offered during fall semesters

<sup>2</sup> Not required prior to P1 for BSPS-only applicants

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH1320 or MATH1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

**PROFESSIONAL**

Course	Title	Hours
<b>Fifth Term</b>		
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3

PHPR 3010	Pharmaceutical Calculations	2
PHPR 3020	Pharmaceutics I	3
PHPR 3110	Pharmaceutics Lab I	1
Major Electives		2

Hours 16

**Sixth Term**

MBC 3320	Medicinal Chemistry II: Drug Design and Drug Action	3
MBC 3560	Physiological Chemistry II: Chemical Regulation Of Cells And Organisms	3
PHCL 3730	BSPS Pharmacology II: Endocrine and CNS Pharmacology	3
PHPR 3030	Pharmaceutics II	3
PHPR 3120	Pharmaceutics Lab II	1
Major Electives <sup>1</sup>		2

Hours 15

**Seventh Term**

PHPR 4880	Internship in Pharmaceutics <sup>2</sup>	3-6
Hours		3-6

**Eighth Term**

MBC 3330	Techniques in Pharmaceutical and Medicinal Chemistry	2
MBC 3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1
PHPR 4160	Pharmacokinetics	3
PHCL 4810	BSPS Pharmacology III: CNS and Cardiovascular Pharmacology	3
PHPR 4770	Advanced Drug Delivery Systems - I	3
BUAD 2070	Business Analytics	3
CHEM 3310	Analytical Chemistry	2

Hours 17

**Ninth Term**

BUAD 3010	Principles Of Marketing	3
BUAD 3030	Managerial And Behavioral Processes In Organizations	3
BUAD 3020	Principles Of Manufacturing And Service Systems	3
CHEM 3360	Analytical Chemistry Laboratory	2
MBC 3860	Microbiology for Pharmaceutical Professionals	2

Hours 13

Total Hours 64-67

<sup>1</sup> Need 4 credit hours major electives.

<sup>2</sup> 3 credit hours are required, an additional 1-3 credit hours can be taken, The additional credit hours cannot be used as Pharmaceutics major elective hours.

All requirements listed above must be fulfilled with a minimum of 123 semester hours required for graduation.

## PHAR Electives

Other electives require approval of the PHAR major adviser.

Code	Title	Hours
PHPR 4680	Parenteral Manufacturing <sup>1</sup>	2
PHPR 4690	Dosage Form Design <sup>1</sup>	3
PHPR 4710	Selected Topics In Pharmaceutical Technology <sup>1</sup>	3
PHPR 4720	Pharmaceutical Rate Processes <sup>1</sup>	3
PHPR 4900	Honors Seminar In Pharmacy Practice	1-3
PHPR 4910	Pharmacy Practice Problems	1-5
PHPR 4960	Honors Thesis In Pharmacy Practice	2-5
PHCL 4820	BSPP Pharmacology IV: Chemotherapeutic Agents	3
BIOL 3010	Molecular Genetics	3
BIOL 3020	Molecular Genetics Laboratory	2
BIOL 4110	Human Genetics and Genomics	3
BIOL 4330	Parasitology	3
CHEM 3730	Physical Chemistry I	3
CHEM 3740	Physical Chemistry II	3
ECON 4750	Health Economics	3
MBC 4380	Medicinal Plants	3
MBC 3850	Microbiology And Immunology Laboratory	1
HEAL 2800	Principles Of Nutrition	3

<sup>1</sup> Taught every other year for those undergraduates not planning to apply to UT's industrial pharmacy graduate program.

<sup>2</sup> If required in your curriculum, it cannot be counted as an elective.

## BSPP in Pharmacy Administration (PHAM)

Pharmacy administration focuses on the corporate and managerial aspects of the pharmacy profession. Students in this major can earn a minor in business administration. They can also very easily get a minor in e-business and information technology, marketing, or professional sales, in addition to the business administration minor. With one year of additional graduate study, students can receive a master of business administration degree.

## BSPP Internship Description

All six majors in the Bachelor of Science in Pharmaceutical Sciences degree program require a real-life workplace internship available in a variety of appropriate settings at local, regional, national and international sites. Most students schedule their internships in the summer after their P1 year. Students are generally assigned to ongoing projects at the site and are evaluated on their performance by the site supervisor. A written internship paper or a technical report and/or a presentation, along with the supervisor's evaluation are submitted to the internship course instructor following completion of the experience.

## BSPP PHARMACY ADMINISTRATION MAJOR CURRICULUM (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER) PREPROFESSIONAL (Effective Fall 2016)

Course	Title	Hours
<b>First Term</b>		
PHPR 1000	Orientation <sup>1</sup>	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15
<b>Second Term</b>		
PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science * <sup>2</sup>	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
Hours		17
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
Hours		14
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Arts/Humanities Core <sup>3</sup>		3
Non#US Diversity <sup>3</sup>		3
Hours		16
Total Hours		62

<sup>1</sup> Only offered during fall semesters

<sup>2</sup> Not required prior to P1 for BSPP-only applicants

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH1320 or MATH1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

### professional (P1 classes entering Fall 2018 and after)

Course	Title	Hours
<b>Fifth Term</b>		
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3
ECON 1150	Principles Of Macroeconomics	3
BUAD 1020	Micro-Computer Applications In Business	3
	Hours	14
<b>Sixth Term</b>		
MBC 3320	Medicinal Chemistry II: Drug Design and Drug Action	3
PHCL 3730	BSPS Pharmacology II: Endocrine and CNS Pharmacology	3
PHPR 4550	Analysis Of The Pharmaceutical Environment	3
PHPR 3260	PHCAD-1	2
Major/Minor Elective <sup>1</sup>		5
	Hours	16
<b>Seventh Term</b>		
PHPR 4780	Internship In Pharmacy Administration <sup>2</sup>	3-6
	Hours	3-6
<b>Eighth Term</b>		
PHCL 4810	BSPS Pharmacology III: CNS and Cardiovascular Pharmacology	3
PHPR 4600	Seminar in Pharmacy Administration	1
BUAD 3010	Principles Of Marketing	3
BUAD 2020	Information Technology Management	3
BUAD 2040	Financial Accounting Information	3
	Hours	13
<b>Ninth Term</b>		
BUAD 2070	Business Analytics	3
BUAD 2050	Accounting For Business Decision-Making	3
EBUS 3090	Doing Business Digitally	3
BUAD 3040	Principles Of Financial Management	3

PSLS 3440	Professional Sales	3
	Hours	15
	Total Hours	61-64

<sup>1</sup> Need 5 credit hours major electives.

<sup>2</sup> 3 credit hours are required, an additional 1-3 credit hours can be taken. The additional credit hours cannot be used as major/minor elective hours.

### Pharmacy Administration Elective List

Pharmacy Administration major students will qualify for a business administration minor. For additional minor in e-business and information technology, marketing, professional sales, or other business minors and the courses that apply to the MBA curriculum, please refer to the College of Business and Innovation (COBI) catalog for a complete listing of courses toward each of the minors and the MBA program.

1. PHPR 4590 Readings in Access and cultural competence
2. PHPR 4610 Pharmacoeconomics and Outcomes Research
3. PHPR 4630 Research Methods Pharmacy administration
4. Any course used to complete a minor degree in the College of Business and Innovation

All requirements listed above must be fulfilled with a minimum of 120 semester hours required for graduation.

Pharmacy Administration major students will qualify for a business administration minor. For additional minor in international business, marketing, or professional sales please refer to the College of Business and Innovation (COBI) catalog for a complete listing of courses toward each of the minors.

## Cosmetic Science Minor

The College of Pharmacy and Pharmaceutical Sciences offers a Cosmetic Science minor. This minor is for students interested in sciences and who want to learn about beauty and personal care products. The four required lecture-based courses teach students about how the cosmetic industry works, ingredients that go into finished products, and how finished products are formulated and tested. Elective courses help individualize the minor for students.

The cosmetic science minor requires 15 credit hours. A grade of D or higher is required in all courses used to fulfill the cosmetic science minor requirements. Prerequisites for all courses must be fulfilled.

Undergraduate students majoring in chemical engineering, chemistry and the BS Pharmaceutical Sciences in pharmaceuticals, medicinal chemistry, or pharmacology/toxicology, are likely to be the most interested and qualified to complete the Cosmetic Science minor. Prerequisites for many courses in the minor include Chem 2420 Organic Chemistry II.

Interested students should fill out the minor declaration form with the College of Pharmacy and Pharmaceutical Sciences and meet with an academic advisor in the College of Pharmacy and Pharmaceutical Sciences. For questions about declaring the minor, please contact CPPS Office of Student Affairs (Main Campus Wolfe Hall 1227 or call 419.530.2010, or Health Science Campus Wolfe Center 155 or call 419.383.1904).

If students would like additional information on the educational benefits of completing the minor, please contact the following faculty:

Gabriella Baki, Ph.D. Assistant Professor College of Pharmacy and Pharmaceutical Sciences

Email: Gabriella.Baki@utoledo.edu Office: HEB114F Phone: (419) 383-1973

Code	Title	Hours
<b>A) Required courses</b>		9
PHPR 2040	Introduction to Cosmetic Science (pre-reqs: CHEM 1230 and 1240)	
PHPR 3040	Cosmetic Raw Materials (pre-reqs: CHEM 1230 and 1240)	
PHPR 4730	Cosmetic Science I (pre-req: PHPR 3040)	
PHPR 4750	Cosmetic Science II	
<b>B) Elective courses</b>		6
For College of Natural Sciences and Mathematics		
CHEM 3510	Biochemistry I	
CHEM 3610	Inorganic Chemistry I	
CHEM 4720	Modern Topics in Physical Chemistry	
CHEM 4200	Green Chemistry	
CHEM 4810	Materials Science I	
CHEM 4820	Materials Science II	
Electives for the College of Engineering		
CHEE 4800	Polymer Science And Engineering	
CHEE 4960	Senior Honors Thesis	
CHEE 4980	Special Topics In Chemical Engineering	
CHEE 4990	Independent Studies In Chemical Engineering	
For the College of Pharmacy and Pharmaceutical Sciences		
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	
MBC 3560	Physiological Chemistry II: Chemical Regulation Of Cells And Organisms	
MBC 3330	Techniques in Pharmaceutical and Medicinal Chemistry	
MBC 3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	
PHCL 4760	Toxicokinetics	

## Department of Pharmacology and Experimental Therapeutics

Dr. Frederick Williams, Chair

The Department of Pharmacology and Experimental Therapeutics consists of 12 faculty members and seeks to integrate both basic and applied research in the pharmaceutical sciences into the academic programs in order to provide students with the information they need to be successful in the challenging fields of pharmacy

and the pharmaceutical industry. The department offers degree programs in the pharmaceutical sciences at the baccalaureate and graduate level and contributes to the training of students in the Pharm.D. program. Departmental courses cover a broad range of disciplines, including pharmacology, toxicology, pharmaceuticals and epidemiology. The department's faculty have research interests in toxicology, pharmacokinetics, biopharmaceutics, neurochemistry, molecular pharmacology, gene therapy, drug metabolism and pharmacoepidemiology.

## Degrees Offered

- BSPS in Pharmacology and Toxicology (PTOX) (p. 462)
- BSPS/MS in Law with regulatory compliance-early admission-bridge program (p. 464)

### PHCL 2220 Drugs, Medicine And Society

[3 credit hours]

The course conveys a general knowledge of drugs, including how and where drugs act and the general pharmacology of specific classes of drugs, e.g., central nervous system active agents, bronchodilators, etc.

**Term Offered:** Spring

### PHCL 2600 Functional Anatomy And Pathophysiology I

[4 credit hours]

A study of functional anatomy, physiology and pathophysiology to serve as background for the understanding of the action of drugs.

**Prerequisites:** (CHEM 1240 with a minimum grade of D- and CHEM 1290 with a minimum grade of D- and BIOL 2150 with a minimum grade of D- and BIOL 2160 with a minimum grade of D- and BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D-)

**Term Offered:** Fall

### PHCL 2610 Introductory Physiology

[3 credit hours]

This class is designed to give students a thorough introduction to human physiology and prepare them for success in the Pharmacy/ Pharmaceutical Science curriculum.

**Prerequisites:** BIOL 2170 with a minimum grade of D-

**Term Offered:** Spring, Fall

### PHCL 2620 Functional Anatomy And Pathophysiology II

[4 credit hours]

A continuation of PHCL 2600.

**Prerequisites:** PHCL 2600 with a minimum grade of D-

**Term Offered:** Spring

### PHCL 2900 Pharmacology Research Introduction

[1-3 credit hours]

The course will introduce the undergraduate student to research in pharmacology. Students will work with faculty members throughout the semester to learn a variety of fundamental laboratory procedures, including record keeping, pharmacological calculations, experimental design, set-up and conduct of assays, data analysis and research presentation.

**Term Offered:** Spring, Summer, Fall



**PHCL 3700 PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY**

[3 credit hours]

An introduction to the principles of pharmacology and the pharmacology of the autonomic nervous system."

**Term Offered:** Fall**PHCL 3720 PHARMACOLOGY II: ENDOCRINE, NSAID AND CARDIOVASCULAR PHARMACOLOGY**

[2 credit hours]

The pharmacology of drugs acting upon the endocrine and reproductive systems will be discussed followed by a discussion of the non-steroidal antiinflammatory agents and the drugs used to treat hypertension and hyperlipidemia.

**Prerequisites:** PHCL 3700 with a minimum grade of C**Corequisites:** MBC 3320, PHPR 3140**Term Offered:** Spring**PHCL 3730 BSPS Pharmacology II: Endocrine and CNS Pharmacology**

[3 credit hours]

The pharmacology of drugs acting upon the endocrine and reproductive systems as well as for the management of sleep disorders, anxiety, affective illness, schizophrenia and seizure disorders.

**Prerequisites:** PHCL 3700 with a minimum grade of D-**Term Offered:** Spring**PHCL 3810 Pharmacology And Toxicology Laboratory**

[1 credit hour]

The course will teach undergraduate students current methods in pharmacology and toxicology with an emphasis on practical, hands-on experience. Students will learn a variety of techniques commonly used in the pharmaceutical and toxicology industries.

**Prerequisites:** PHCL 3700 with a minimum grade of D-**Term Offered:** Spring**PHCL 4700 Pharmacology III: Cns And Cardiovascular Pharmacology**

[2 credit hours]

The pharmacology of central nervous system active agents. Continues from PHCL 3720. Agents acting on the cardiovascular and renal systems are also discussed.

**Prerequisites:** PHCL 3700 with a minimum grade of C**Term Offered:** Fall**PHCL 4720 Pharmacology IV: Chemotherapeutic Agents**

[2 credit hours]

The pharmacology of anti-infective chemotherapeutic agents is presented. Issues such as the mechanism of antimicrobial action, disposition, resistance and problems attending the use of antimicrobial drugs will be discussed.

**Prerequisites:** (PHCL 3700 with a minimum grade of C and MBC 3800 with a minimum grade of C)**Term Offered:** Spring**PHCL 4730 Toxicology I**

[3 credit hours]

A synopsis of the basic elements of toxicology including dose-response, lethal dose-50, margin of safety, mechanisms of toxicity and nature of toxic injuries including mutagenesis, carcinogenesis, reproduction, and systemic toxicology. The toxicities of heavy metals and pesticides are also discussed.

**Corequisites:** PHCL 3700**Term Offered:** Fall**PHCL 4750 Toxicology II**

[3 credit hours]

This course provides the students with an overview of environmental toxicology, which emphasizes both air and water pollution. It also reviews the applications of different areas of toxicology, such as food toxicology emphasizing the safety standards of food and methods of evaluation of food safety, analytic toxicology and its applications in forensic toxicology and occupational toxicology. It also discusses general methods for toxicity evaluation.

**Prerequisites:** PHCL 3700 with a minimum grade of D-**Term Offered:** Spring**PHCL 4760 Toxicokinetics**

[3 credit hours]

The theory and practice of using kinetic principles to model the time course of toxic chemicals in the body and in the environment. Relation of the chemical time course to negative outcomes and application to risk assessment. Hands-on practice with kinetic analysis methods and software.

**Term Offered:** Summer, Fall**PHCL 4780 Internship in Pharmacology/Toxicology**

[6-12 credit hours]

In this experiential course, students will acquire practical knowledge through hands-on experience in the area of Pharmacology and / or Toxicology by working at an academic, private, or governmental laboratory or a professional site.

**Prerequisites:** (PHCL 3730 with a minimum grade of D- and PHCL 3810 with a minimum grade of D- and MBC 3320 with a minimum grade of D- and MBC 3560 with a minimum grade of D-)**Term Offered:** Spring, Summer, Fall**PHCL 4810 BSPS Pharmacology III: CNS and Cardiovascular Pharmacology**

[3 credit hours]

The pharmacology of central nervous system active agents and agents acting on the cardiovascular and renal systems.

**Prerequisites:** PHCL 3730 with a minimum grade of D-**Term Offered:** Fall**PHCL 4820 BSPS Pharmacology IV: Chemotherapeutic Agents**

[3 credit hours]

The pharmacology of anti-infective chemotherapeutic agents including their mechanism of antimicrobial action, disposition, resistance and issues related to use.

**Prerequisites:** PHCL 4810 with a minimum grade of D-**Term Offered:** Spring**PHCL 4900 Honors Seminar In Pharmacology**

[1-3 credit hours]

To examine a specific question in the context of the primary literature in pharmacology and be able to present that in a seminar

**Term Offered:** Spring, Summer, Fall**PHCL 4910 Problems In Pharmacology**

[1-3 credit hours]

An examination of a specific question in pharmacology which can be answered through application of experimental work.

**Term Offered:** Spring, Summer, Fall

**PHCL 4960 Honors Thesis In Pharmacology**

[2-5 credit hours]

An examination of a specific question in pharmacology which can be answered through application of experimental work, and a presentation in a thesis format.

**Term Offered:** Spring, Summer, Fall

## BSPP IN PHARMACOLOGY AND TOXICOLOGY (PTOX)

Pharmacology and toxicology are biomedical sciences that study how to develop safe, effective drugs and prevent the harmful effects of chemicals. Pharmacology focuses on the way drugs interact with various living systems, including the properties, effects and mechanisms of drug action. Toxicology focuses on the interaction of toxic compounds in the body, including exposure assessment, dose response assessment and hazard identification.

### BSPP Internship Description

All six majors in the Bachelor of Science in Pharmaceutical Sciences degree program require a real-life workplace internship available in a variety of appropriate settings at local, regional, national and international sites. Most students schedule their internships in the summer after their P1 year. Students are generally assigned to ongoing projects at the site and are evaluated on their performance by the site supervisor. A written internship paper or a technical report and/or a presentation, along with the supervisor's evaluation are submitted to the internship course instructor following completion of the experience.

#### BSPP and MSPS in Pharmacology/Toxicology (PTOX) Option

The combination of BSPP and MSPS degrees in PTOX gives students the ability and choice to elect to get two degrees in five years. Currently, BSPP students will take 3.5-4 years to graduate and MSPS students will take 2 years. Time and money savings are important for students. This combined degree will take up to 1 year off of the two degrees.

All BSPP degree requirements will remain intact. Classes that are required in BSPP that may be waived for the Master's curriculum with an achieved grade of B- or better will be:

PHCL	5700	Pharmacology I	3
PHCL	5720	Pharmacology II	3
PHCL	5730	Toxicology I	3
PHCL	6700	Pharmacology III	3

Internship must be done in the summer between P1 and P2 with an in house PTOX faculty member who will then be the mentor of the MS degree. This allows ideas and training done in the internship phase to be carried forward in the Master's degree program.

Students will start the master's degree program in the spring after graduation (9 credits). The Master's program will go through the summer (4-6 credits), following fall (10 credits) and spring (9 credits), and a 2 credit summer (if necessary) where the students will defend.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## BSPP PHARMACOLOGY/TOXICOLOGY MAJOR CURRICULUM (FOR P1 STUDENTS ENTERING IN FALL 2018 AND AFTER) PREPROFESSIONAL

Course	Title	Hours
<b>First Term</b>		
PHPR 1000	Orientation	1
MATH 1850	Single Variable Calculus I *	4
CHEM 1230	General Chemistry I *	4
CHEM 1280	General Chemistry Lab I	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
Hours		15
Total Hours		15

Course	Title	Hours
<b>Second Term</b>		
PHCL 2610	Introductory Physiology	3
MATH 2640	Statistics for Applied Science *2	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1110	College Composition I	3
Diversity of US <sup>3</sup>		3
Hours		17
Total Hours		17

Course	Title	Hours
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 1750	Introduction To Physics <sup>1</sup>	4
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Social Sciences Core <sup>3</sup>		3
Hours		14
Total Hours		14

Course	Title	Hours
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
Social Sciences Core <sup>3</sup>		3

Arts/Humanities Core <sup>3</sup>	3
Arts/Humanities Core <sup>3</sup>	3
Non-US Diversity <sup>3</sup>	3
Hours	16
Total Hours	16

<sup>1</sup> Only offered during fall semesters

<sup>2</sup> Not required prior to P1 for BSPS-only applicants

<sup>3</sup> If double-dip, PREP courseload reduced by 3 hours. Only one double dip is allowed for the UT Core requirements.

\* Students accepted into the College of Pharmacy and Pharmaceutical Sciences should be academically prepared to be placed into MATH 1850 and CHEM 1230. Students placing into a lower math level - MATH 1200, MATH1320 or MATH1750 and/or placing into a lower level chemistry - CHEM 1090 (based on students' testing scores) will require additional hours for graduation.

Students should consult their Degree Audit for coursework that fulfills elective course requirements in the General Education/Core area.

## PROFESSIONAL

Course	Title	Hours
<b>Fifth Term</b>		
MBC 3310	Medicinal Chemistry I: Drug Action And Design	2
MBC 3550	Physiological Chemistry I: Structure And Function Of Biological Macromolecules	3
PHCL 3700	PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY	3
PHCL 4730	Toxicology I	3
Major Electives (Recommend BIOL 3010, BIOL 3020 & MBC 3330) <sup>1</sup>		5-6
Hours		16-17
Total Hours		16-17

Course	Title	Hours
<b>Sixth Term</b>		
MBC 3320	Medicinal Chemistry II: Drug Design and Drug Action	3
MBC 3560	Physiological Chemistry II: Chemical Regulation Of Cells And Organisms	3
PHCL 3730	BSPS Pharmacology II: Endocrine and CNS Pharmacology	3
PHCL 3810	Pharmacology And Toxicology Laboratory <sup>2</sup>	1
PHCL 4750	Toxicology II	3
Major Elective (Recommend MBC 3100) <sup>1</sup>		1
Major Elective		3
Hours		17
Total Hours		17

Course	Title	Hours
<b>Seventh Term</b>		
MBC 4710	Targeted Drug Design	3
PHCL 4810	BSPS Pharmacology III: CNS and Cardiovascular Pharmacology	3
Major Elective <sup>1</sup>		9
Hours		15
Total Hours		15

Course	Title	Hours
<b>Eighth Term</b>		
PHCL 4780	Internship in Pharmacology/Toxicology <sup>3</sup>	6-12
Hours		6-12
Total Hours		6-12

<sup>1</sup> To be chosen from the PTOX electives list.

<sup>2</sup> Required for internship and only offered in spring.

<sup>3</sup> Internship can be taken in the summer before the P2 year.

All requirements listed above must be fulfilled with a minimum of 120 Semester hours required for graduation.

## PTOX ELECTIVES

A total of 18 hours of course work must be selected from the list of elective courses below. Other electives require approval of the PTOX adviser.

Code	Title	Hours
BIOL 3010	Molecular Genetics	3
BIOL 3020	Molecular Genetics Laboratory	2
BIOL 3030	Cell Biology	3
BIOL 3040	Cell Biology Laboratory	2
BIOL 4010	Molecular Biology	3
BIOL 4030	Microbiology	3
BIOL 4050	Immunology	3
BIOL 4110	Human Genetics and Genomics	3
BIOL 4330	Parasitology	3
CHEM 3310	Analytical Chemistry	2
CHEM 3360	Analytical Chemistry Laboratory	2
CHEM 3720	Physical Chemistry For The Biosciences II	3
CHEM 3730	Physical Chemistry I	3
CHEM 3740	Physical Chemistry II	3
CHEM 4300	Instrumental Analysis	2
CHEM 4880	Advanced Laboratory III	2
MBC 3100	Practices in Pharmaceutical Research	1
MBC 3860	Microbiology for Pharmaceutical Professionals	2
MBC 3330	Techniques in Pharmaceutical and Medicinal Chemistry	2
MBC 3340	Techniques in Pharmaceutical and Medicinal Chemistry Laboratory	1
MBC 4300	MEDICINAL CHEMISTRY III: INFECTIOUS DISEASE CHEMOTHERAPY	2

MBC 4470	Advanced Immuno-Therapeutics	2
MBC 4980	Special Topics In Drug Design	1-4
PHCL 4820	BSPS Pharmacology IV: Chemotherapeutic Agents	3
PHCL 4760	Toxicokinetics	3
PHCL 4900	Honors Seminar In Pharmacology	1-3
PHCL 4910	Problems In Pharmacology	1-3
PHCL 4960	Honors Thesis In Pharmacology	2-5

## BSPS/MS in Law with Regulatory Compliance-Early Admission-Bridge Program

This is a 4+1 combined degree program between the BSPS and the MS in Law, effective Fall 2018. BSPS students accepted into this program will carry out the requirements for their BSPS degree, take their internship in the summer between Junior and Senior years, and be eligible to take up to 9 credit hours of graduate level courses in the MS in Law program where the student can concentrate on regulatory compliance of chemicals, drug and health products.

Application to this early admission/bridge program is made in the summer between Junior and Senior years, to be eligible to take graduate courses in the senior year. It requires 1) a preferred 3.2 cumulative GPA; 2) permission of the chair of the department where student's major is in; 3) a letter of interest to the CPPS program coordinator; 4) a completed graduate admission application; 5) at least 2 letter(s) of recommendation from faculty members

The three courses that students choose to take during their senior year can come from the courses listed below:

LAWM 5000-Law and the Legal System

LAWT 6600-Compliance Education

LAWT 6600-Compliance Skills: Auditing, Investigating, and Reporting

LAWT 6600-Privacy and Data Security

It is the joint responsibility of the faculty and administrators in Bachelors of Science in Pharmaceutical Science and Master's in Law program to supervise students admitted to the early admission/bridge program, to ensure that the limit of nine hours taken as an undergraduate is strictly enforced, and to request that the College of Graduate Studies change their matriculation from Undergraduate to Graduate when they meet all undergraduate degree requirements.

## Faculty

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**Amit K. Tiwari**, 2015, Assistant Professor, B. Pharm, Ram-Eesh Institute; M.S., Ph.D., St. John's University

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**Donald B. White**, 1995, Professor, B.S., University of California - Los Angeles; M.S., Ph.D., University of California - Irvine

**Frederick E. Williams**, 2002, Associate Professor, Department Vice-Chair, B.S., University of Michigan; M.H.S., Grand Valley State University; Ph.D., Medical College of Ohio

## Department of Pharmacy Practice

**Sarah Aldrich**, 2018, Clinical Assistant Professor, Lecturer, Pharm.D., Ohio Northern University

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**Bryan M. Bishop**, 2015, Assistant Professor, B.S. Pharm., Pharm.D., The University of Toledo; RPh., BCPS

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**Mary C. Borovicka**, 2002, Associate Professor and Director of Advanced Professional Continuing Education, B.S. Pharm., Pharm.D., The University of Toledo; R.Ph., BCPS, BCPP

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**Varun A. Vaidya**, 2009, Associate Professor, B.S. Pharm., Bharati Vidyapeeth College of Pharmacy; Ph.D., University of Tennessee

# JESUP SCOTT HONORS COLLEGE

MacKinnon Hall 2000  
419.530.6030  
Honors@utoledo.edu (Honors@Utoledo.edu)

## Mission Statement

The Jesup Scott Honors College offers enhanced academic and experiential opportunities to highly motivated and talented students in all of the undergraduate colleges at The University of Toledo. The Honors College provides a nurturing and challenging higher education experience within a small-group learning and discussion-based environment that is conducive to growth and discovery in an atmosphere of intellectual and cultural diversity.

## Contacts

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## Office of Competitive Fellowships

Competitive Fellowships are open to all students and faculty at UToledo.  
Competitive Fellowships office: Scott Hall 0125  
Competitive Fellowships website: <http://www.utoledo.edu/honors/competitive-fellowships/>  
E-mail: [Competitivefellowships@utoledo.edu](mailto:Competitivefellowships@utoledo.edu)  
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## Office of Competitive Fellowships Mission Statement

The University of Toledo's Office of Competitive Fellowships is committed to guiding both students and faculty through the rigorous process of applying for prestigious scholarly experiences. Opportunities are available in all fields and disciplines.

## STUDENT SUPPORT

The University of Toledo aims to actively support students in a variety of opportunities for scholarly experiences. We invite you to explore awards for which you may be eligible and connect with us for support. We are here to help guide you through the application process.

Examples of awards that our office will help with include:

- Boren Scholarship
- Critical Language Scholarship
- Fulbright Scholarship
- Gates Cambridge Scholarship
- Benjamin A. Gilman Scholarship
- Barry Goldwater Scholarship
- National Oceanic and Atmospheric Administration Ernest F. Hollings Scholarship
- James Madison Scholarship
- Marshall Scholarship
- George J. Mitchell Scholarship
- National Defense Science and Engineering Graduate Fellowship
- National Science Foundation Scholarship
- Charles B. Rangel International Affairs Fellowship
- Rhodes Scholarship
- Tillman Scholarship
- Harry S. Truman Scholarship
- Morris Udall Scholarship

## SUPPORT FOR FACULTY

The University of Toledo's faculty are world-class experts, scholars, and researchers. Our office is committed to connecting them with prestigious nationally competitive awards and fellowships to recognize their work and enrich their pursuits. Faculty are encouraged to contact us regarding opportunities and criteria for fellowships and research abroad.

Examples of awards that our office will help with include:

- **Fulbright Scholar:** For those interested in research abroad.
- **Guggenheim Fellowships:** For those in the arts and sciences interested in assisting research and artistic creation.

- **National Endowment for the Humanities (NEH):** For those seeking funding to support research, education, preservation, and public programs in the humanities.
- **Sloan Research Fellowships:** For tenure-track (or equivalent) science faculty seeking recognition and support for their research.

## Office for Undergraduate Research Contact

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## Success Coaches

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## Admission Requirements

### Direct from High School Student:

- High school GPA and ACT test score indicative of a well-prepared student, which should meet the *minimum* of BOTH a **3.5 high school GPA and a 25 ACT (or SAT equivalent of 1200) test score** for standard admission to the Honors College.
- Academic credentials should be combined with a significant high school leadership and/or work experience that indicates a high

level of motivation and performance that could translate into high academic performance at the university.

- Students apply to the Jesup Scott Honors College after filling out the general UToledo application, indicating interest there in the Honors College, and receiving acceptance to the university. Students then must complete the supplemental Honors College application form, including submission of a short essay and a summary of extracurricular activities, leadership and work experience, received awards, *et cetera*.
- Applicants to the Honors College with credentials that fall below the standard minimum criteria stipulated above may be subject to an alternative evaluation that seeks information about extenuating circumstances which may have shaped their high school GPA and test scores.

### Current UToledo Student:

- Applicants must possess a cumulative college GPA of at least a 3.3.
- Applicants must have completed their first semester of UToledo coursework but possess no more than 60 credit hours.
- Applicants must contact the Assistant Director of Student Services (419.530.6180) to obtain and fill out the Honors College application form for current students.

## Academic Policies

Students are subject to the general regulations that apply to all students enrolled in The University of Toledo. Refer to the **UT Policy website** (<http://www.utoledo.edu/policies>) for academic policies that apply to all students. (<http://www.utoledo.edu/policies/>)

LIST OF UNDERGRADUATE ACADEMIC POLICIES found at the above web address.

3364-71-01\_Academic Standing  
3364-71-02\_Enrollment status: full time, part time, and audit  
3364-71-03\_Class Rank  
3364-71-04 Academic dishonesty  
3364-71-05 Academic Grievance  
3364-71-06 Academic forgiveness  
3364-71-07 Repeating a course and calculating GPA  
3364-71-08 Adding and/or dropping a Course  
3364-71-09 Dual Degrees  
3364-71-10 Residency requirement for a degree  
3364-71-11 Grades and grading  
3364-71-12 Priority registration  
3364-71-13 Graduation with honors distinction; Dean's list; President's list  
3364-71-14 Missed class policy  
3364-71-15 Confidentiality of student records (FERPA)  
3364-71-16 Administrative adjustment for extenuating circumstances  
3364-71-17 Credit for prior learning  
3364-71-18 Veteran and service members support and assistance  
3364-71-19 Posthumous degree awards  
3364-71-20 International baccalaureate diploma  
3364-71-21 Diploma replacement  
3364-71-22 Semester academic calendar and academic year  
3364-71-23 Academic credit hour

## Honors College Policies

**Honors Warning/Ineligibility Policy:** This policy is designed to enforce the expectations that the JSHC holds for its Honors students, establishing criteria for being in good Honors standing relative to a student's UToledo cumulative GPA. The policy outlines steps that will be taken in response to students with grades that threaten their ability to earn College Honors by the time of graduation.

## Jesup Scott Honors College Program

In order to graduate with the Honors College medallion, a student must:

- Complete all requirements for an approved degree program within the degree-granting college of his or her major.
- Complete a minimum of 33 semester hours of Honors courses (or 27 semester hours for students entering UT in Fall 2018 and later).  
Honors courses are of two kinds:
  - those offered by the Honors College and
  - those offered by various departments and degree-granting colleges.
- Of the 33 (or 27) hours required, three semester hours of Ideas and Society (HON 1010) must be completed by all Honors College students.
- Depending on the student's degree-granting college, entering term at UT (before Fall 2018 or after), and chosen curricular track (see below), the remaining Honors hours may include:
  - a. HON 1020 (Innovation and Society)
  - b. HON 2010 (Multicultural Toledo) or HON 2020 (Multicultural Literatures: The North American Experience) or HON 2030 (Multicultural Literatures: The Non-European World).
  - c. One or two Honors upper-division courses, including HON 3010 (Community Engagement) and/or interdisciplinary seminars offered through the Honors College (HON 4950 and HON 4960).
  - d. Honors sections of general education courses.
  - e. Honors sections of courses offered in the student's major.
  - f. Non-Honors courses contracted with the course instructor for Honors credit through use of an Honors Learning Contract (<https://www.utoledo.edu/honors/learning-contracts.html>).
- Earn a minimum overall UT GPA of 3.3 (a major GPA higher than a 3.3 may be required by the department and a higher cumulative GPA may be required by the student's degree-granting college or department).
- Complete an Honors thesis or capstone project.
- Complete any additional requirements for Honors set by the major department or college of the major.

\* For a definitive listing of the JSHC requirements by degree-granting college and entering term at UT, see the tables at the bottom of this page. For students subject to the new Honors curriculum (who enter UT in Fall 2018 or later), a selection should be made between two curricular tracks offered by their degree-granting college. The "Blue track" is designed for students in pre-professional programs with less flexibility for taking HON core courses whereas the "Gold track" is designed for students interested in and able to take a more traditional, liberal arts Honors curriculum.

Students pursuing the "Gold track" must also satisfy the "Blue track" requirements for their degree-granting college.

## Honors College Learning Contracts

Through an Honors Learning Contract (<http://www.utoledo.edu/honors/learning-contracts.html>), an instructor and a student agree on a more intensive and extensive exploration of course material in a non-Honors course. By successfully fulfilling the agreement (and other requirements) spelled out in the Honors Learning Contract, the student receives Honors credit for the course. This is marked on the student's transcript as such after the completion of the semester when the Honors College is notified by the course instructor of the satisfactory completion of the Contract by the student.

## Jesup Scott Honors College Diploma Requirements by Degree-Granting College

### Old Curriculum (For Pre-Fall 2018 Admits)

	A&L	BUS	ENG	HHS	JHCOINSM	NUR	PHM	UC
Ideas and Society & Innovation and Society <sup>1</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicultural Literatures <sup>2</sup>	One	One	None	One	One	One	None	One
Honors Seminars <sup>3</sup>	Two	One	None	Two	Two	Two	One	None
Total Honors Hours	33	33	33	33	33	33	33	33
Thesis or Capstone Project	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Minimum Cumulative GPA	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Departmental Honors Required	Yes	Yes	Yes	No	No	Yes	Yes	N/A

<sup>1</sup> HON 1010, HON 1020

<sup>2</sup> HON 2020, HON 2030

<sup>3</sup> HON 4950, HON 4960

A&L: College of Arts & Letters

BUS: College of Business and Innovation

ENG: College of Engineering

HHS: College of Health and Human Services

JHCOE: Judith Herb College of Education

NSM: College of Natural Sciences and Mathematics

NURS: College of Nursing

PHM: College of Pharmacy and Pharmaceutical Sciences

UC: University College

### New Curriculum (for Fall 2018 and later Admits) - BLUE TRACK

	A&L	BUS	ENG	HHS	JHCOINSM	NUR	PHM	UC
Ideas and Society	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Innovation and Society	Option	Option	Option	Option	Option	Only Gold	Option	Optional
Multicultural Courses <sup>1</sup>	Choose One	Need 2010	Need 2010	Need 2010	Need 2010	Choose One Gold	Need 2010	Choose One

Upper-level Courses <sup>2</sup>	Choos One	Need 3010	Need 3010	Need 3010	Need 3010	Choos Only One	Need Gold	Need 3010	Choose One
Total Honors Hours	27	27	27	27	27	27	Only Gold	27	27
Thesis or Capstone Project	Yes	Yes	Yes	Yes	Yes	Yes	Only Gold	Yes	Yes
Minimum Cumulative GPA	3.3	3.3	3.3	3.3	3.3	3.3	Only Gold	3.3	3.3
Additional Requirements by College/Dept.	Yes (Dept. Hon.)	Yes (Dept. Hon.)	Yes (Dept. Hon.)	Yes (Dept. Hon.)	No	Yes (Dept. Hon.)	Only Gold (Dept. Hon.)	Yes (Dept. Hon.)	Yes (Dept. Hon.)

<sup>1</sup> HON 2010, HON 2020, HON 2030

<sup>2</sup> HON 3010, HON 4950, HON 4960

### New Curriculum (for Fall 2018 and later Admits) - GOLD TRACK

	A&L	BUS	ENG	HHS	JHCOINSM	NUR	PHM	UC
Ideas and Society	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Innovation and Society	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multicultural Courses <sup>1</sup>	Choos One	Need 2010	Need 2010	Need 2010	Need 2010	Choos One	Need 2010	Choose One
Upper-level Courses <sup>2</sup>	Choos Two	3010 & Semin	3010 & Semin	3010 & Semin	3010 & Semin	Choos Two	3010 & Semin	Choose Two
Total Honors Hours	27	27	27	27	27	27	27	27
Thesis or Capstone Project	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Minimum Cumulative GPA	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Additional Requirements by College/Dept.	Yes (Dept. Hon.)	Yes (Dept. Hon.)	Yes (Dept. Hon.)	Yes (Dept. Hon.)	No	Yes (Dept. Hon.)	Yes (Dept. Hon.)	Yes (Dept. Hon.)

<sup>1</sup> HON 2010, HON 2020, HON 2030

<sup>2</sup> HON 3010, HON 4950, HON 4960

## Jesup Scott Honors College Courses

### HON 1010 Ideas and Society

[3 credit hours]

Through a process of critical examination, analytical thought, and intellectual exchange, students engage in study of ideas in society during different time periods and across different cultural contexts and intellectual disciplines. Drawing upon primary and secondary sources using multiple humanities discourses, students analyze and evaluate and respond to diverse populations and perspectives. From this synthesis, students gain ability to apply understanding of ideas in contemporary society as well as ideas in their fields of study.

**Term Offered:** Spring, Fall

Core Arts & Humanities

### HON 1020 Innovation and Society

[3 credit hours]

In this interdisciplinary course, students will analyze and critique various processes of innovation in society with an emphasis on its impact on human society. Students will gain the ability to evaluate course concepts against competing approaches and solutions in society, as well as in their own fields of study.

**Term Offered:** Spring, Fall

Core Arts & Humanities

### HON 2010 Multicultural Toledo

[3 credit hours]

Multicultural Toledo is an interdisciplinary investigation into the multicultural, historical and socio-economic development of the greater Toledo area and the ways that different community groups respond to, and shape, this transformation. Topics may include: ethnicity, race, gender, gender orientation, socioeconomic class, religion, national origin, dis/ability, and age within the Toledo community. The course features multiple site visits to community organizations.

**Term Offered:** Spring, Fall

Core Social Sciences, Multicultural US Diversity

### HON 2020 Multicultural Literatures: The North American Experience-Honors-WAC

[3 credit hours]

This reading, writing and discussion course examines selected literatures of the North American experience: for example, texts by African American, Arab American, Asian American, Hispanic or Native American authors.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

### HON 2030 Multicultural Literatures: The Non-European World-Honors-WAC

[3 credit hours]

This reading, writing and discussion course examines selected non-European literatures.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

### HON 2990 Independent Study

[1-5 credit hours]

Supervised independent study.

**Term Offered:** Spring, Summer, Fall

### HON 3010 Community Engagement

[3 credit hours]

This research intensive, interdisciplinary course is designed to provide students with experience in effective community engagement through work on a local issue or problem in a mentored, multidisciplinary team. Class will focus on developing practical skills, identifying best practices, and exploring potential solutions for complex problems. The course culminates in a grant proposal that can be adopted or adapted by our community partners. Class time consists of short instructional presentations, group work, and class discussions.

**Term Offered:** Spring, Fall



**HON 4950 Honors Seminar**

[3 credit hours]

These interdisciplinary seminars are organized around a variety of subjects and intellectual concerns.

**Term Offered:** Fall

**HON 4960 Honors Seminar**

[3 credit hours]

These interdisciplinary seminars are organized around a variety of subjects and intellectual concerns.

**Term Offered:** Spring

**HON 4990 Independent Study**

[1-5 credit hours]

Supervised independent study.

**Term Offered:** Spring, Fall

## Office of Undergraduate Research (OUR-UT)

OUR-UToledo programs are open to all undergraduate students at UToledo.

OUR-UToledo office: MacKinnon Hall 2000E

OUR-UToledo website: <http://www.utoledo.edu/honors/undergradresearch/index.html>

E-mail: [Undergradresearch@utoledo.edu](mailto:Undergradresearch@utoledo.edu)  
([undergradresearch@utoledo.edu](mailto:undergradresearch@utoledo.edu))

**Jonathan Bossenbroek, Ph.D.**

Director, Office of Competitive Fellowships and Undergraduate Research

Phone: 419.530.2983

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## OUR-UToledo Mission Statement

The Office of Undergraduate Research provides meaningful research opportunities for all UToledo undergraduate students. We accomplish this mission by being a resource for faculty members to increase undergraduate involvement in their research, and by aiding in the integration of a research component to existing courses and/or development of new research-intensive courses.

## Primary Objectives of OUR-UToledo

- Be a focal point for research opportunities for undergraduates.
- Be an advocate for increased funding of undergraduate research at UToledo.
- Showcase research accomplishments of UToledo undergraduates.
- Be a resource for faculty members to increase undergraduate involvement in their research.
- Be a resource for the community and local industries to increase their involvement in undergraduate research.

- Aid in the integration of a research component to existing courses and/or development of new research-intensive courses.
- Coordinate undergraduate research involvement with the other offices at UToledo including: the Office of Research, the Jesup Scott Honors College, Career Services, the various degree-granting colleges, and the various departments and/or academic programs.

**Research programs** overseen by OUR-UToledo that provide funding to undergraduate students include:

- Academic Year Research Program (AYRP)
- First-Year Summer Research Experience (FYSRE)
- Research Travel Grant Program
- Student Achievement in Research and Scholarship (STARS) Program
- Undergraduate Summer Research and Creative Activity Program (USRCAP)
- Work-Study Research Program (WSRP)

**Courses** associated with the Office of Undergraduate Research include:

**UGR 2980 Issues in Research and Scholarship**

[1 credit hour]

Seminar series addressing various issues that can arise in research, scholarship, and creative activities, including: safe laboratory practices, regulatory compliance issues, and ethics issues.

**Term Offered:** Summer

**UGR 4910 Undergraduate Research Experience**

[0 credit hours]

Undergraduate students will participate in directed research, scholarship, or creative activities with faculty mentors.

**Term Offered:** Spring, Summer, Fall

## Faculty

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# JUDITH HERB COLLEGE OF EDUCATION

## Undergraduate Catalog

Main Campus  
3100 Gillham Hall  
419.530.2495  
JHCOE-StuSvcs@Utoledo.edu  
JHCOEDeansOffice@utoledo.edu

## Mission

The mission of the Judith Herb College of Education is to prepare educators, instructional leaders, and scholars who are capable of constructing and sustaining effective learning environments through the development and practice of innovative educational theories and pedagogical approaches.

## Vision

Shaping the future of education for an ever-changing world.

## Accreditation

The Judith Herb College of Education is fully accredited by the Council for Accreditation of Educator Preparation (CAEP). This accreditation status is effective between fall 2016 and fall of 2023. The next on-site visit will take place in spring 2023.

Additionally, all licensure programs are approved by the Ohio Department of Higher Education.

## Academic Policies

The Judith Herb College of Education adheres to all of The University of Toledo policies and procedures. Please refer to the General Section (<http://utoledo-public.courseleaf.com/general-section>) of this catalog for academic policies governing all students enrolled at the University. In any case where University, college, departmental and/or program policies conflict, the most stringent policy applies. Students should consult with their program for a complete list of all policies and procedures specifically related to their program.

## GPA Recalculation for Repeated Courses

Student who have retaken a course and earned a higher grade may petition to have the first grade excluded from grade point average. Credit will only be awarded once for repeated courses. If a grade has been deleted that grade will not be used in determining the UT grade point average. However, all grades, including those for repeated courses, will be included in the determination of eligibility for graduation honors, fellowships, or other distinctions awarded on the basis of GPA. No more than a total of 12 semester hours of course work will be deleted. Students who have had their GPAs recomputed under the Academic Forgiveness Policy are not eligible for grade deletions. Specific programs within the college may have more rigorous requirements for grade deletions of major or related courses.

## Withdrawal Policy (W Grades)

The number of credit hours of W is limited to 22 hours for all undergraduate students in degree programs in the Judith Herb College of Education. Once a student has accumulated 22 hours of W, further withdrawals will be counted as F's in computation of the student's GPA for the purposes of probation or suspension. In addition, students risk the loss of financial aid if they accumulate excessive hours of W.

## Academic Probation and Suspension

Students with a cumulative GPA of less than 2.0 are automatically placed on probation until a cumulative GPA of 2.0 is achieved. While on probation, it is recommended students enroll for 12 or fewer credit hours. Students on probation must see an adviser.

Academic suspension means the student is prohibited from registering at The University of Toledo for a period of at least one semester. A student is subject to academic suspension if his or her GPA continues to fall below the minimum of 2.0 or if he or she fails to make sufficient progress toward attainment of the degree by accumulating excess W grades. Students may remove Incompletes while under suspension. Refer to the UT Policy web site (<http://www.utoledo.edu/policies>) for additional information on academic suspension.

## Dismissal

Dismissed students are not eligible for readmission to the Judith Herb College of Education. A student may be dismissed for:

- Failing to meet the conditions of readmission after suspension from the Judith Herb College of Education.
- Demonstrating patterns of behavior that are inappropriate for students preparing for educational roles or for failing to meet the morals standard as defined by the state of Ohio.

Regulations for probation, suspension and dismissal apply to both full-time and part-time students. In all matters, the dean's decision is final.

## Academic Honesty

Refer to the UT Policy web site (<http://www.utoledo.edu/policies>) for further information on Academic Honesty.

## Academic Grievance

Students have the responsibility and right to call to the attention of a professor any course grade believed to be in error. The college grievance procedure must be initiated within 60 days of the posting of the final grade. Academic grievances must follow the procedure described below:

- The student meets with the professor to attempt to resolve the problem.
- If meeting with the professor does not resolve the problem, the student must discuss the problem with the department chair of the faculty member who issued the grade. The chair attempts to resolve the problem, but may not unilaterally change the grade.
- If meeting with the chair does not resolve the issue, the student will forward the appeal in writing to the associate dean of the Judith Herb College of Education. The student must meet with the associate dean

to review and discuss the problem, but a decision will not be rendered here.

- If the student wishes to continue the appeal, the written appeal will be submitted to the academic affairs committee.
- The academic affairs committee will appoint an appeals subcommittee that will collect all data related to the appeal, in writing, and will interview the student and/or instructor, if necessary, to make a recommendation to the dean.
- The appeals subcommittee will inform the chair of the college council of the recommendation.
- The dean will make the final decision and will be responsible for informing all appropriate parties.
- If the student wishes to continue the appeal, he/she must forward the appropriate information relative to the problem to the Student Grievance Council. Information on this process may be found in The University of Toledo Student Handbook. Note: If the grievance occurs during the fall or summer semester, a grievance petition must be filed with the chair of the Student Grievance Council no later than the last day of classes in the next semester. If the grievance occurs during the spring semester, the grievance petition must be filed with the chair of the Student Grievance Council no later than the last day of classes in the final summer session.

## Student Responsibilities

Students are responsible to complete the following:

- All first-year students must see an adviser each semester; all Judith Herb College of Education students are strongly encouraged to see a faculty or academic adviser at least once a year.
- Readmit students are responsible for degree requirements in effect at the time of readmission.
- Students are responsible for fulfilling all degree requirements.
- Students are encouraged to meet with their academic advisers as needed for assistance.
- Students must contact the Office of Student Services to schedule an advising appointment.

## Academic Program Requirements

The program descriptions provide a general outline of each teacher education program. Program degree audits are available online and provide specific individual course requirements and options for each major. Students should use the audit to keep a record of completion of the respective program requirements.

## Admission Policies

To be admitted to the Judith Herb College of Education at The University of Toledo, direct-from-high-school students need a minimum cumulative high school grade point average (GPA) of 2.7 or an ACT of 21.

Students not qualifying for admission to the Judith Herb College of Education will be admitted to The University of Toledo's Exploratory Studies program which is part of the University College. Students who want to transfer from University College must earn 12 hours of college-level work with a minimum cumulative GPA of 2.3.

## Selective/Limited Admission

Students who are eligible for initial admission to the college are not guaranteed admission to the professional education program in the junior year. All licensure programs have specific additional requirements for admission to professional education.

## Requirements for Students with an Associate's Degree

Students holding associate's degrees from accredited colleges are encouraged to enroll in the College. Students may earn a bachelor's degree upon completion of two or more additional years of full-time study; see the adviser in the major to determine a plan of study. The following regulations apply:

1. Students must complete the equivalent of the specified University core.
2. In all baccalaureate programs, a minimum of 64 hours must be taken at the 2000 to 4000 levels; of these a minimum of 32 hours must be taken at the 3000 and 4000 levels. Coursework from other institutions is accepted at the level at which the course was taught at that institution.

## Admission with Transfer Credit from Another Institution

Students with satisfactory academic records wishing to transfer into the Judith Herb College of Education must meet the minimum entrance requirements of The University of Toledo. After submission of official transcripts from all colleges/universities attended and acceptance by the College, transfer courses are evaluated. The evaluation process must be completed before the end of the first term of attendance.

Number of credit hours and minimum required GPA for transfer students:

Number of Credit Hours Transferred	Minimum Required GPA
Less than 30	2.3 overall
30-59	2.5 overall
60 or more	2.7 overall and 2.7 in student's major

## Readmission of Former Students

Undergraduate students who discontinue course work for a period of at least one academic year (not including summer) must request readmission to the University. If students have taken any course work at another institution during the time they have been away from the University (other than transient status), they must complete a new application in the Office of Undergraduate Admission and meet transfer admission requirements.

**Students who have not taken course work for more than 12 months must comply with the college requirements at the time of readmission.** When seeking readmission, students whose grade point average (GPA) is below 2.0 can only be readmitted on approval of the associate dean. Students with a GPA of 2.0 or higher may seek readmission in the college office.

## Change of College

Students in good standing (minimum cumulative GPA of 2.0) who wish to change from another college within The University of Toledo to the Judith Herb College of Education should make an appointment with a college adviser in the Office of Student Services (call 419.530.2495) to discuss the transfer and have academic records reviewed. All program requirements, including University core, must be fulfilled as specified in the catalog for the year in which the student enters the College. All undergraduate hours attempted and earned at the University of Toledo, as well as the GPA, will transfer.

## Honors Program

The Honors Program in the Judith Herb College of Education provides opportunities for challenging and individualized study for undergraduate students of unusually high ability, motivation and initiative. For admission requirements, see Admission to the University Honors Program in the General Section (<http://utoledo-public.courseleaf.com/general-section>) of this catalog.

## Contacts

### Administration

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## Academic Departments

### Department of Curriculum and Instruction

Vacant, chair  
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### Department of Early Childhood Education, Higher Education, and Special Education

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## Department of Educational Foundations and Leadership

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edward.janak@utoledo.edu

## Degree Requirements

### Education

Students from the Judith Herb College of Education must complete a minimum of 120-128 undergraduate credit hours of course work for degrees in Education with licensure. The exact number of hours is determined by the program. Students completing degree programs in teacher education must attain a minimum overall higher education GPA of 2.7, as well as maintain the same average in their teaching major and professional education courses prior to enrolling in internship/student teaching. The cumulative average includes all grades for credits earned, plus grades of IN and F and those acquired in repeated courses at The University of Toledo and at other institutions that the student attended. Degrees in Education without license require a minimum of 120 undergraduate credit hours of course work. Students may qualify for a second bachelor's degree in the College by completing a minimum of 32 credit hours of additional residence course work and by satisfying the applicable bachelor's degree requirements and state requirements.

## University Core Curriculum

Students earning bachelor's or associate's degrees in all University colleges and programs are required to complete the University Core Curriculum. Those courses are distributed in the areas of English composition, mathematics, humanities/fine arts, social sciences, natural sciences (with lab) and multicultural studies (see the General Section (<http://utoledo-public.courseleaf.com/general-section>) of this catalog for details). Some colleges and programs require courses in these areas over and above those required to fulfill University core requirements. The student's academic department or college office should be contacted for specific details.

## Residence Requirement

Students transferring from other institutions must earn at least 32 credit hours in the Judith Herb College of Education at The University of Toledo to be eligible for graduation and/or teacher licensure.

Junior- and senior-level courses in Professional Education must be completed in residence for students completing teacher education programs.

## Application for Graduation

See the UT Policy web site (<http://www.utoledo.edu/policies>) for additional information.

## Degrees/Programs Offered

The following undergraduate programs are open to students seeking teacher licensure:



## Early Childhood Education (Degree)

- BE in Early Childhood Education (Pre K-5) (p. 499)

Ages 3-10/grades PreK-5 for children who are typically developing, at-risk and gifted, and who have mild/moderate educational needs.

## Special Education – Intervention Specialist (Degree)

- BE in Special Education Intervention Specialist (p. 515)

Mild/Moderate Special Needs: Ages 5-21/grades K-12

Moderate/Intensive Special Needs: Ages 5-21/grades K-12

## Middle Childhood Education (Degree)

- BE in Middle Childhood Education (4-9) (p. 500)

Ages 8-14/grades 4-9 with two of the following concentrations:

- Reading and Language Arts
- Mathematics
- Science
- Social Studies

## Adolescence to Young Adult Education (Degree)

- BE in Adolescent and Young Adult Education (p. 488)

Ages 12-21/grades 7-12 in each of the following areas:

- Integrated Language Arts
- Integrated Mathematics
- Integrated Social Studies
- Science (five options)

## Multiage Education (Degree)

- BE in Multi-Age Education (Pre K-12) (p. 506)

Ages 3-21/grades PreK-12 in each of the following areas:

- Visual Arts
- Music
- Foreign Languages (French, German and Spanish)

The following undergraduate program is open to students not seeking teacher licensure, degree without licensure.

## Early Childhood Education (degree without licensure)

- Early Childhood Education Fast Track (p. 519): Bachelor's degree completion program for student who already have an Associates degree in Early Childhood Education. Ages 0-5, preschool children who are typically developing, at-risk and gifted, and who have mild/moderate educational needs.

This interdisciplinary academic minor is open to students in all degree programs:

## Peace Studies

- Peace Studies (p. 477) (minor)

## Department of Educational Studies

Dr. Edward Janak, chair

Gillham Hall Room 5000C

(419) 530-4114

edward.janak@utoledo.edu

## Degrees offered

- Peace Studies (p. 477)

### PJS 1000 Introduction to Peace and Justice Studies

[3 credit hours]

This survey course provides an overview to fundamental peace knowledge: theories of peace, ethics, violence, conflict and change in the context of historical and 21st century issues and events.

**Term Offered:** Spring, Fall

Core Social Sciences

### PJS 2000 Nonviolence and Conflict Transformation Theory and Practice

[3 credit hours]

This course provides an overview of theories and principles of nonviolence, ethics of conflict, and conflict transformation; it engages students in the application of practical methods and skills of peacebuilding through the lenses of these theories and principles.

Core Arts & Humanities

### PJS 2500 Peace Education Facilitating Learning for Change in Schools and Beyond

[3 credit hours]

The purpose of this course is to introduce the basic concepts, theories, and approaches to peace education. The course explores the theories of peace education, including pedagogical approaches to peace-learning for formal, informal, and non-formal learning settings. The course also introduces the substantive areas of peace education.

**Prerequisites:** PJS 1000 with a minimum grade of D- and PJS 2000 with a minimum grade of D-

**Term Offered:** Spring, Fall

### PJS 3000 Peace Lab Issues and Practices in Peace

[3 credit hours]

Peace Lab is an experiential, issue-focused laboratory that introduces students to practical skills of research or program design for applied peacebuilding in a variety of settings. The project developed by the student is informed by and demonstrates understanding of their core peace studies knowledge. Students present their projects to the public in a scholarly fair/ conference organized by the course.

**Prerequisites:** PJS 1000 with a minimum grade of D- and PJS 2000 with a minimum grade of D- and PJS 2500 with a minimum grade of D-

**PJS 4000 Senior Capstone Seminar**

[3 credit hours]

The Capstone Seminar provides the opportunity for the student to develop a formal, independent study culminating in a written discourse that advances our understanding of peace studies or a formal, independent project applying principles of peace studies to analyze a particular problem and culminating in a written discourse. The course builds on the work projects formulated in the Peace Lab (PJS 3000).

**Prerequisites:** PJS 1000 with a minimum grade of D- and PJS 2000 with a minimum grade of D- and PJS 2500 with a minimum grade of D- and PJS 3000 with a minimum grade of D-

## Peace Studies

### Minor

Peace Studies is an interdisciplinary academic minor concerned with inquiry and scholarship regarding reduction and elimination of violence and the establishment of conditions for the possibility of peace and justice to flourish at all levels of human organizations.

Code	Title	Hours
<b>Core Courses</b>		
PJS 1000	Introduction to Peace and Justice Studies	3
PJS 2000	Nonviolence and Conflict Transformation Theory and Practice	3
PJS 2500	Peace Education Facilitating Learning for Change in Schools and Beyond	3
PJS 3000	Peace Lab Issues and Practices in Peace	3
<b>Elective Courses</b>		
Select six credits <sup>1</sup>		6
Total Hours		18

<sup>1</sup> Electives are available in disciplines and programs across campus including: art, communications, disability studies, economics, environmental studies, foundations of education, legal specialties, philosophy, religious studies, sociology/anthropology, and women's & gender studies.

## Department of Teacher Education

Jenny Denyer, interim chair

### Degrees Offered

- BE in Adolescent and Young Adult Education (p. 488)
- BE in Early Childhood Education (Pre K-5) (p. 499)
- BE in Middle Childhood Education (4-9) (p. 500)
- BE in Multi-Age Education (Pre K-12) (p. 506)
- BE in Special Education Intervention Specialist (p. 515)
- Career and Technical Education Non-Degree (Licensure Only) (p. 517)

**CI 3400 Foundations of Literacy**

[3 credit hours]

An introduction to contemporary literacy instruction to (a) develop a deep understanding of the central role literacy plays in education, (b) understand the theoretical and evidence-based foundations of reading and writing processes and instruction and, (c) develop awareness, understanding, respect, and a valuing of differences in our society as they relate to literacy instruction. Issues related specifically to the needs of English Language Learners and learners with dyslexia introduced.

**Term Offered:** Spring, Summer, Fall

**CI 3430 Phonics And Word Identification For Early Childhood Education**

[3 credit hours]

Phonological and morphological underpinnings of English spelling, reading disabilities such as dyslexia, sound awareness in spoken language examined. Instructional approaches for assessing and teaching phonics, word recognition, and vocabulary introduced. Extensive use of case study data included.

**Prerequisites:** CI 3400 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CI 3440 Phonics And Word Identification For Middle Childhood Education**

[3 credit hours]

Phonological and morphological underpinnings of English spelling, reading disabilities such as dyslexia, sound awareness in spoken language examined. Instructional approaches for assessing and teaching phonics, word recognition, and vocabulary introduced. Extensive use of case study data included.

**Prerequisites:** CI 3400 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CI 3460 Literacy And Reading Development For Young Children**

[3 credit hours]

An examination of professional standards for literacy/language arts with specific attention to diverse learners preK through grade 3. Developmentally-appropriate classroom design and methods including Readers' and Writers' Workshop, Guided Reading, Interactive Read Alouds, Interactive Writing, and Integrated Inquiry. Attention to instructional and cognitive strategies as well as reading-writing connections and oral language development.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4050 Teaching Methods in Middle Grades English Language Arts**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle grades English Language Arts.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4320 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

**CI 4060 Teaching Methods in Middle Grades Mathematics**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle mathematics.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4320 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

**CI 4070 Teaching Methods in Middle Grades Science**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle grades science.

**Prerequisites:** CI 4190 with a minimum grade of D- and CI 4680 with a minimum grade of D- and Upper Division with a score of 1 and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

**CI 4080 Teaching Methods in Middle Grades Social Studies**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle grades social studies.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4720 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

**CI 4110 Developing Instruction for Middle Grades 4-5 Literacy and Social Studies**

[3 credit hours]

A course in pedagogy and content for pre-service teachers currently working on Ohio's Early Childhood PK-3 licensure program and licensed teachers who have completed Ohio's Early Childhood PK-3 licensure program and are seeking to extend their license to be eligible to teach all content in grades four and five. The course will focus on the English language arts and social studies as outlined in the Ohio Academic Content Standards.

**Term Offered:** Spring, Fall

**CI 4120 Developing Instruction in Mathematics and Science for Grades 4-5**

[3 credit hours]

A course in pedagogy and content for pre-service teachers currently working on Ohio's Early Childhood PK-3 licensure program and licensed teachers who have completed Ohio's Early Childhood PK-3 licensure program and are seeking to extend their license to be eligible to teach all content in grades four and five. The course will focus on mathematics and science as outlined in the Ohio Academic Content Standards.

**Term Offered:** Spring, Fall

**CI 4140 Teaching Methods For Foreign Languages**

[3 credit hours]

Consideration of current theory and practice in teaching foreign languages in elementary and secondary schools. Focus on planning instruction, materials selection and methods for teaching communication skills and culture.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Fall

**CI 4150 Methods of Teaching AYA English Language Arts**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching English Language Arts at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4320 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4160 Methods of Teaching AYA Mathematics**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching mathematics at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4550 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4170 Methods of Teaching AYA Science**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching science at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4680 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4180 Methods of Teaching AYA Social Studies**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching social studies at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4720 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4190 Practicum I**

[3 credit hours]

Teacher candidates will be immersed in a classroom studying the student as a learner of content and the classroom as community. Teacher candidate will co-teach lessons and independently teach two or more lessons.

**Prerequisites:** (CI 4320 (may be taken concurrently) or CI 4680 (may be taken concurrently) or CI 4720 (may be taken concurrently) or CI 4550 (may be taken concurrently)) and Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4210 Advanced Teaching Methods in Middle Grades English Language Arts**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle grades English language arts.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4050 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4220 Advanced Teaching Methods in Middle Grades Mathematics**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle mathematics.

**Prerequisites:** CI 4060 with a minimum grade of C and CI 4290 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4230 Advanced Teaching Methods in Middle Grades Science**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle science.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4070 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4240 Advanced Teaching Methods in Middle Grades Social Studies**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle grades social studies.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4080 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4250 Advanced Methods of Teaching AYA English Language Arts**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary English language arts.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4150 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4260 Advanced Methods of Teaching AYA Mathematics**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary mathematics.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4160 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4270 Advanced Methods of Teaching AYA Science**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary science.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4170 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4280 Advanced Methods of Teaching AYA Social Studies**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary social studies.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4180 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4290 Practicum II**

[3 credit hours]

Teacher candidates will continue field placement studying the role of the teacher and community in learning as well as a variety of students. Teacher candidate will co-teach lessons and independently teach two small units of study.

**Prerequisites:** CI 4190 with a minimum grade of C and Upper Division with a score of 1 and (CI 4050 (may be taken concurrently) or CI 4060 (may be taken concurrently) or CI 4070 (may be taken concurrently) or CI 4080 (may be taken concurrently) or CI 4150 (may be taken concurrently) or CI 4160 (may be taken concurrently) or CI 4170 (may be taken concurrently) or CI 4180 (may be taken concurrently))

**Term Offered:** Spring

**CI 4300 Literature For Children**

[3 credit hours]

Emphasis on all genres of literature for children, including poetry, traditional literature, fantasy, realistic fiction, biography and other information books, particularly for early childhood and middle grades learners. Instructional strategies for engaging learners with children's literature and ways of increasing home-school connections through use of children's literature also introduced.

**Term Offered:** Spring

**CI 4320 Literature For Young Adults**

[3 credit hours]

Survey of literature materials written for the junior and senior high school student. Emphasis is placed on all genres, literary elements and the use of literature across the curriculum.

**Prerequisites:** Upper Division with a score of 1 and CI 4190 (may be taken concurrently)

**Term Offered:** Spring, Fall

**CI 4390 Practicum III**

[3 credit hours]

Candidate will be placed in their student teaching site(s) and focus on developing and teaching instructional unit(s) in their licensure area(s) with a focus on the role of assessment throughout the planning-teaching-reflection process.

**Prerequisites:** CI 4290 with a minimum grade of C and Upper Division with a score of 1 and (CI 4210 (may be taken concurrently) or CI 4220 (may be taken concurrently) or CI 4230 (may be taken concurrently) or CI 4240 (may be taken concurrently) or CI 4250 (may be taken concurrently) or CI 4260 (may be taken concurrently) or CI 4270 (may be taken concurrently) or CI 4280 (may be taken concurrently))

**Term Offered:** Fall

**CI 4400 Reading In Middle Grades**

[3 credit hours]

Using various genres of literature, students focus on instructional approaches across the curriculum for supporting middle grades students to become literate in multiple subject domains. Teaching methods to support comprehension of text-based content-area materials and writing across the curriculum emphasized. Attention to instructional and cognitive strategies as well as reading-writing connections and oral language development.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4430 Issues In Second Language Teaching**

[3 credit hours]

A critical study of teaching foreign languages and English as a second language in secondary schools including current curriculum, materials, teaching strategies and evaluation.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring

**CI 4470 Literacy Assessment and Remediation**

[3 credit hours]

Examine current literacy practices in assessment and remediation. Emphasis on knowledge and skill needed to diagnose and assess students in reading and writing by working with an at-risk learner in a public school setting. Apply word identification, comprehension, fluency, vocabulary and writing instructional strategies for supporting readers in an experiential learning environment.

**Prerequisites:** CI 3430 with a minimum grade of D- or CI 3440 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CI 4490 Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach**

[3 credit hours]

Study of the integration of reading comprehension, writing, oral language and word skill development in content reading. Attention will be given to instructional methods as well as assessment practices.

**Term Offered:** Spring, Summer, Fall

**CI 4510 Mathematics For The Young Child**

[3 credit hours]

Development of mathematical understanding in young children, appropriate learning and assessment experiences and analysis of curriculum. Mathematical focus on place value, number sense, geometry, measurement, algebra, data analysis and probability.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4550 Teaching Problem Solving In Mathematics**

[3 credit hours]

Focuses on the art of problem solving and its implementation in the classroom. Basic problem solving strategies are developed; materials and methods for their integration in mathematics teaching are provided.

**Prerequisites:** Upper Division with a score of 1 and CI 4190 (may be taken concurrently)

**Term Offered:** Fall

**CI 4640 Environmental Education**

[3 credit hours]

An experiential course for those interested in developing their knowledge and expertise in Environmental Education. Participants will develop a personal response to current environmental issues and learn how to help others do the same. Participants include teachers, naturalists, environmental science professionals and anyone interested in environmental education. The course will take a practical approach to the NAEE standards for environmental and conservation education as well as the NGSS and relevant Common Core State Standards.

**CI 4680 The Nature of Science**

[3 credit hours]

This course focuses on nature of science education as to teaching science and is designed for pre-service teachers.

**Prerequisites:** CI 4190 (may be taken concurrently) and Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4720 Best Practices for Teaching Social Studies**

[3 credit hours]

An introduction to lesson planning, pedagogy, and how these principles relate to the Social Studies classroom.

**Prerequisites:** Upper Division with a score of 1 and CI 4190 (may be taken concurrently)

**Term Offered:** Spring, Fall

**CI 4730 Seminar Managing the English Language Arts Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in English language arts education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** CI 4390 with a minimum grade of C and CI 4250 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4740 Seminar: Managing the Mathematics Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in mathematics education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4260 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4760 Seminar: Managing the Science Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in science education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** CI 4390 with a minimum grade of C and CI 4270 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring



**CI 4790 Seminar: Managing the Social Studies Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in Social Studies education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** Upper Division with a score of 1 and CI 4390 with a minimum grade of C and CI 4280 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4900 Student Teaching Seminar**

[2-4 credit hours]

Focuses reflectivity on common experiences in Student Teaching. Attention to resume preparation, portfolio use, job interviews.

**CI 4930 Internship/Student Teaching**

[6-12 credit hours]

Full-time supervised classroom teaching for 8-15 weeks.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4950 Workshop In Curriculum And Instruction**

[1-5 credit hours]

Workshops developed around topics of interest and concern for pre-service and in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.

**Term Offered:** Spring, Summer

**CI 4980 Special Topics In Curriculum And Instruction**

[1-5 credit hours]

Topics of interest and concern to preservice, inservice and non-degree teachers within school districts and community agencies. The course may be included in an undergraduate degree program.

**Term Offered:** Spring, Summer, Fall

**CI 4990 Undergraduate Independent Study In Curriculum And Instruction**

[1-5 credit hours]

Provides student the opportunity to work individually on professional problems under the direction of faculty in Curriculum and Instruction.

**Term Offered:** Spring, Summer, Fall

**CIEC 3200 Early Childhood Education: Philosophy And Practice**

[3 credit hours]

The course emphasizes the role, attitude and characteristics of the effective teacher of young children.

**Term Offered:** Spring, Summer, Fall

**CIEC 3250 Public Policy And Advocacy Issues In Early Childhood**

[2 credit hours]

Designed to heighten an awareness about the effect of public policy on young children, their educational opportunities and their parents and sensitize students to advocacy and its many manifestations.

**CIEC 3310 Curriculum And Methods For Preschool Education**

[4 credit hours]

In-depth study of curriculum development, designing learning environments and anti-bias procedures for preschool children. Students will plan and implement learning activities in field placement.

**CIEC 3320 Play And Learning**

[3 credit hours]

A study of the young child's play and its relationship to learning. Students will design activities and a socio-dramatic play kit to facilitate play in assigned early childhood settings.

**CIEC 3350 Child, Family & Public Policy In Early Childhood**

[3 credit hours]

This course is designed to establish awareness of public policy issues and advocacy techniques, knowledge of family systems, effective home/school communication and collaborative procedures.

**Term Offered:** Spring, Summer, Fall

**CIEC 3380 Field Experience: Socio-Cultural Dimensions Of Education**

[3 credit hours]

This course is designed to explore the socio-cultural context of the school, family and community as important influences in learning. Students will be assigned to work with a family, gather data and information about their field sites and attend IEP and IFSP conferences.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CIEC 3600 Creating Effective Learning Environments**

[9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in ECE and explores foundational principles and research in curricula for children from infancy to age 5.

**Corequisites:** CIEC 3610

**Term Offered:** Spring, Summer, Fall

**CIEC 3610 Field: Creating Effective Learning Environments**

[7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments for young children. This field experience is part of the non-licensure "Fast-Track" ECE program.

**Corequisites:** CIEC 3600

**Term Offered:** Spring, Summer, Fall

**CIEC 3700 Early Literacy, Language, and Social Studies**

[9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in Early Childhood Education and provides an integrated study of social studies and literacy development and instructional practices in early childhood education.

**Prerequisites:** CIEC 3600 with a minimum grade of C and CIEC 3610 with a minimum grade of C

**Corequisites:** CIEC 3710

**Term Offered:** Spring

**CIEC 3710 Field Early Literacy, Language and Social Studies**

[7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments and activities related to the learning of the literacy and social studies for young children. This field experience is part of the non-licensure "Fast-Track" ECE program.

**Prerequisites:** CIEC 3600 with a minimum grade of C and CIEC 3610 with a minimum grade of C

**Corequisites:** CIEC 3700

**Term Offered:** Spring

**CIEC 3900 Ece Linking Seminar III**

[1 credit hour]

A culminating reading and discussion seminar that continues and intensifies the activities of earlier seminars (CIEC 1900 and 2900). Emphasis will be on transforming the content of the Humanities, Sciences and Social Sciences into appropriate Early Childhood curriculum.

**CIEC 4070 Effective Teaching Practices, Pre-K To 3rd Grade**

[3 credit hours]

This course is designed to apply characteristics of best practice to curriculum development and implementation with adherence to the national and state curriculum standards as they apply to children, age 3 to 8, with diverse educational needs.

**Prerequisites:** Upper Division with a score of 1 and CIEC 3200 with a minimum grade of C and CIEC 4340 with a minimum grade of C

**Term Offered:** Spring, Fall

**CIEC 4150 Setting The Stage For Early Childhood Learning: Inspirations From Reggio Emilia**

[3 credit hours]

This course will explore Reggio's philosophy of early childhood education and the numerous ways that children explore the "hundred languages." Reggio uses these languages (art, clay, wire, sculpture, light, shadow, etc.) as a way to help children represent their world and what they know about it.

**Term Offered:** Spring, Summer

**CIEC 4340 Infant/Toddler Curriculum**

[3 credit hours]

Sequential development of the young child from birth to 3 years. Taken in conjunction with placement in early childhood setting, permitting opportunities to participate in the caregiving of infants/toddlers.

**Term Offered:** Spring, Summer, Fall

**CIEC 4460 Science Methods For Early Childhood Education**

[3 credit hours]

This course is designed to help teachers of science in grades Pre-Kindergarten through third to understand the concepts, ideas and applications of science in the real world. Students will learn how scientific thinking involves collecting data, analyzing data, making decisions and taking action based on those decisions. Students will learn how to plan effective science experience for young children that cause them to explore environments and act upon their discoveries. Students will learn how to assess the scientific thinking of young children appropriately, using formal and informal strategies.

**Prerequisites:** CIEC 4480 (may be taken concurrently) with a minimum grade of C

**Corequisites:** CIEC 3380

**Term Offered:** Spring, Fall

**CIEC 4480 Field Experience: Cohort I**

[3 credit hours]

This course aligns with all Cohort I coursework in the undergraduate Early Childhood Teacher Licensure Program.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CIEC 4550 Teaching Methods For Early Childhood Social Studies**

[3 credit hours]

In depth study of methods and materials for teaching social studies from pre-school to third grade. Implementation of early childhood curriculum with the context of current technology and the development of critical thinking skills.

**Prerequisites:** (CIEC 3200 with a minimum grade of C and EDP 3210 with a minimum grade of C)

**Term Offered:** Spring, Fall

**CIEC 4600 Supporting ECE Science and Mathematics**

[9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in Early Childhood Education and explores the study of math and science teaching practices in preschool education (ages birth to five).

**Prerequisites:** CIEC 3700 with a minimum grade of C and CIEC 3710 with a minimum grade of C

**Corequisites:** CIEC 4610

**Term Offered:** Fall

**CIEC 4610 Field Supporting ECE Science and Mathematics**

[7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments and activities related to the learning of mathematics and science for young children (infants, toddlers, or preschoolers). This field experience is part of the non-licensure "Fast-Track" ECE program.

**Prerequisites:** CIEC 3700 with a minimum grade of C and CIEC 3710 with a minimum grade of C

**Corequisites:** CIEC 4600

**Term Offered:** Fall

**CIEC 4750 Developmental Assessment In Early Childhood**

[3 credit hours]

This course focuses on methods of assessment in early childhood classrooms. Issues covered include methods of observation, interpreting formal assessment results and using information gained from assessment to plan curriculum.

**Term Offered:** Spring, Fall

**CIEC 4770 Practicum: Primary Grades**

[3 credit hours]

Practicum experience in primary grade settings (grades K-3) where students will observe, plan, implement and evaluate activities.

**Term Offered:** Spring, Fall

**CIEC 4900 Internship/Student Teaching Seminar**

[3 credit hours]

A seminar designed to reflect on the student teaching experience and to enhance the student teacher's final preparation for employment.

Professional issues, ethical behavior, resume and interview techniques and other processes and professional entry concerns. For early childhood student teachers.

**Prerequisites:** Upper Division with a score of 1

**Corequisites:** CIEC 4930

**Term Offered:** Spring, Fall

**CIEC 4930 Internship/Student Teaching**

[8-16 credit hours]

Planned experience in public school classrooms under direction of University supervisor. Observation of teaching of experienced teacher; gradual acceptance of full responsibility by student teacher for planning, instruction, evaluation and related duties.

**Prerequisites:** Upper Division with a score of 1

**Corequisites:** CIEC 4900

**Term Offered:** Spring, Fall

**CIEC 4950 Workshop I Early Childhood Education**

[1-5 credit hours]

Workshop developed around topics of interest and concern for pre-service and in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.

**CIEC 4980 Special Topics In Early Childhood Education**

[1-5 credit hours]

Topics of interest and concern to preservice, inservice and non-degree teachers within districts and community agencies served by the Center for Educational Development. May be included in an undergraduate degree program.

**Term Offered:** Spring

**CIEC 4990 Undergraduate Independent Study In Early Childhood Education**

[1-5 credit hours]

Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of the Early Childhood faculty.

**Term Offered:** Spring, Fall

**CTE 4010 Teaching Occupational Skills**

[3 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. This course addresses multiple topics critical to workforce education as they apply to the laboratory environment. Students are provided classroom and clinical experiences designed to assist the beginning teacher with basic laboratory instructional techniques and management strategies that integrate academic, occupational and employability skills in a contextual framework.

**Term Offered:** Summer

**CTE 4020 Occupational Safety & Liability**

[3 credit hours]

This course is required for the Adult Education, Career Based Intervention, and Work-Site Teacher/Coordinator endorsements. Occupational health and safety hazards applicable to school, business, and industry, will be examined. Utilizing clinical and classroom experiences students will investigate: the rationale for safety training; strategies to minimize exposure and prevent injuries; specific topics, such as ergonomics, blood borne pathogens, air quality, sound, hazardous materials, back safety, substance abuse, violence in the workplace, etc.

**Term Offered:** Summer

**CTE 4030 Teaching Occupational Knowledge**

[3 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. Designed as a co-requisite in the professional education series, this course addresses multiple topics critical to workforce education as they apply to the classroom environment. Students are provided classroom and clinical experiences designed to assist the beginning teacher with basic classroom instructional techniques and management strategies that integrate academic, occupational and employability skills in a contextual framework.

**Term Offered:** Summer

**CTE 4050 Methods Of Teaching Career And Technical Education I**

[2 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career- Technical Licenses. The pedagogical and management skills introduced in CTE 4010 are integrated in a contextual framework utilizing an actual laboratory situation. Learning styles; laboratory planning, instruction, technology, and management; integrated academics; performance assessment; safety and liability issues; employability and SCANS skills; community partnerships; school-based and work-site learning; etc. are the basis for student research, reflection, and inquiry

**Term Offered:** Fall

**CTE 4070 Methods Of Teaching Career And Technical Education II**

[2 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. The pedagogical and management skills introduced in CTE 4030 are integrated in a contextual framework utilizing an actual classroom setting. Organizing curriculum; instructional planning, management, delivery and technology; learning theory; behavior management; motivation; integrated academics; authentic assessment; career-technical student organizations; etc. are the basis for student research, reflection, and inquiry.

**Term Offered:** Spring

**CTE 4110 Seminar for CTE Teachers**

[3 credit hours]

The career-technical education teacher is an occupational professional who possesses the pedagogical knowledge and reflective decision making skills necessary to enter the teaching profession at multiple levels. In order to prepare individuals as career-technical instructors, components of the licensure program were developed and approved by the State Board of Education, to promote high professional standards to provide quality classroom teachers. The components are: a clear mission; operational goals; specific competencies of an assessment system.

**Term Offered:** Spring

**CTE 4140 Cooperative Education**

[2 credit hours]

This course is required for the Career Based Intervention. The course is designed to present the basic fundamentals of establishing and operating a cooperative occupational program. Students investigate and develop operational procedures to address: student selection; assessing the quality of potential training stations; student placement; school-based learning; critical issues related to work-based learning; minor labor laws; partnering with parents, business, and labor; connecting activities; record keeping; evaluation techniques; etc.

**Term Offered:** Summer, Fall**CTE 4160 Curriculum Development & Teaching Co-Operative Education**

[3 credit hours]

This course is required for the Career Based Intervention. Designed as a study of cooperative education curriculum and instructional methods, the course includes the coordination of school-based instruction with on-the-job work-based experience. Learning styles of diverse students; instructional planning and delivery; classroom management; integrated academics; authentic assessment; safety and liability issues; employability and SCANS skills; community partnerships; school-based and work-site learning; etc. are the basis for student research, reflection, and inquiry.

**Term Offered:** Summer**CTE 4900 Curriculum Construction**

[3 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. A planned field experience will be completed in public school classrooms under the direction of university facilitated induction teams. The university faculty member, on-site teacher mentor, and local administrator will collaborate to assure the novice teacher maximizes his/her potential as an individual and member of an educational team. Students are provided a contextual framework to integrate theory and practice.

**Term Offered:** Fall**CTE 4930 Supervised Teaching**

[3-8 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. A planned field experience will be completed in public school classrooms under the direction of university facilitated induction teams. The university faculty member, on-site teacher mentor, and local administrator will collaborate to assure the novice teacher maximizes his/her potential as an individual and member of an educational team. Students are provided a contextual framework to integrate theory and practice.

**Term Offered:** Spring, Fall**CTE 4980 Problems In Career And Technical Education**

[1-5 credit hours]

A course developed around topics of interest and concern to inservice teachers. Stresses solution and resolution of educational problems occurring within selected districts.

**Term Offered:** Spring, Summer, Fall**CTE 4990 Individual Study In Career And Technical Education For Undergraduate Students**

[1-3 credit hours]

Individual study is designed to provide the opportunity to work individually on professional problems under the direction of the faculty in career and technical education.

**Term Offered:** Spring, Summer, Fall**GIFT 4100 Educating Young Talented And Gifted Children**

[3 credit hours]

Examination of major topics about the development of talents and gifts with an emphasis on developmentally appropriate practices with young children.

**Prerequisites:** CIEC 3200 with a minimum grade of D- and CIEC 4340 with a minimum grade of D-

**Term Offered:** Spring, Fall**SPED 2010 Practicum In Special Education**

[3 credit hours]

Lecture and fieldwork, consisting of a minimum of 15 clock hours as assistant in each of two placements for persons with disabilities (total of 30 hours)

**SPED 2040 Perspectives In The Field Of Exceptionalities**

[3 credit hours]

Synthesis of the cross-categorical components required of special education. Issues addressed: causes and characteristics for disabling conditions and issues related to persons with disabilities, i.e., identification, intervention strategies, educational settings. Role of professionals in the field of special education.

**Term Offered:** Spring, Summer, Fall**SPED 2900 Early Seminar Special Education**

[1-5 credit hours]

Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of Special Education will be the focus.

**SPED 2910 Cultural Diversity And Disabilities**

[1 credit hour]

This is a linking seminar with the urban studies or public administration dual majors. The purpose is to integrate the two majors. Students will learn the relation of cultural diversity and special education. Theoretical as well as pragmatic positions will be discussed.

**SPED 2990 Independent Study In Special Education**

[1-5 credit hours]

Designed to provide the student with the opportunity to explore special interests through individual study.

**SPED 3130 Linguistic Analysis**

[3 credit hours]

Identification and evaluation of language usage. Course focuses upon development of competence for the analysis of semantic and syntactic components of language. Some pragmatic analysis is included. Lab required.

**Term Offered:** Spring, Fall**SPED 3350 Child, Family, Public Policy**

[3 credit hours]

**SPED 3380 Field Experience: Specialized Childhood Dimensions of Education**

[2 credit hours]

**SPED 3670 American Sign Language I**

[3 credit hours]

Principles of manual communication. Course builds an expressive and receptive vocabulary of at least 1,000 signs in American Sign Language (ASL) and Pidgin Signed English. Ten hours of lab required.

**Term Offered:** Summer, Fall

**SPED 3680 American Sign Language II And Basics Of Interpreting**

[3 credit hours]

Emphasis on fluency development in manual communication. Study of various models of interpreting and transliterating processes.

**Prerequisites:** SPED 3670 with a minimum grade of D-

**Term Offered:** Spring, Summer

**SPED 3690 American Sign Language III**

[4 credit hours]

American Sign Language III is designed to continue the development of proficiency in using the language and understanding the culture of the Deaf. Student will gain knowledge and skill in applying approximately 900 additional vocabulary words. Students will advance in the complexity of sentence structure and grammatical structures including classifiers, specifier, verb modulations and aspects, special referencing, pluralizations and the importance of facial expressions.

**Prerequisites:** SPED 3680 with a minimum grade of D-

**Term Offered:** Summer, Fall

**SPED 3700 American Sign Language IV**

[4 credit hours]

American Sign Language IV is designed to continue the development of proficiency in using the language and understanding the culture of the Deaf. Student will gain knowledge and skill in applying approximately 900 additional vocabulary words.

**Prerequisites:** (SPED 3670 with a minimum grade of C and SPED 3680 with a minimum grade of C and SPED 3690 with a minimum grade of C)

**Term Offered:** Spring, Summer

**SPED 3850 Braille I**

[3 credit hours]

Basic course in both reading and writing literary Braille; practical application of this medium to teaching.

**SPED 3860 Braille II And Other Media For The Blind And Visually Impaired**

[3 credit hours]

Covered in this course will be reading and writing and advanced literary Braille, nemeth code and other nee

**SPED 4010 Atypical Development In Early Childhood: Implications For Development**

[3 credit hours]

Factors that contribute to atypical development in early childhood, appropriate intervention models and implications of delay on young children's development.

**SPED 4030 Educating Students With Disabilities In The Middle Grades**

[3 credit hours]

Focus on the teacher's role in middle age grade classrooms in the development and modification of environment curriculum and instruction to enable students with disabilities to be educated within an inclusive educational environment. Course must be taken concurrently with CI 4200.

**Prerequisites:** Upper Division with a score of 1

**SPED 4060 Specialized Intervention In Infancy And Early Childhood**

[3 credit hours]

Atypical infant, toddler and early childhood development examined. Intervention strategies in home, school and specialized environments, which are family-centered and developmentally appropriate, will be addressed. Forty (40) clock hour practicum required.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Fall

**SPED 4070 Curriculum Models and Intervention Strategies in Early Childhood Special Education**

[3 credit hours]

Atypical infant, toddler and early childhood development will be examined. Specialized intervention techniques, their research and practice base and appropriate curriculum models will be explored.

**Prerequisites:** CIEC 3200 with a minimum grade of D-

**SPED 4080 Curriculum Adaptations & Strategies In Early Childhood Education**

[3 credit hours]

Curriculum models and intervention strategies which facilitate the cognitive, academic, social, language, self-help and lay skills of children with disabilities in preschool and primary grades will be examined.

**Prerequisites:** Upper Division with a score of 1 and CIEC 3200 with a minimum grade of D- and CIEC 4340 with a minimum grade of D-

**Term Offered:** Spring, Fall

**SPED 4100 Field Practicum With Students With Mild/Moderate Educational Needs**

[3-4 credit hours]

This course must be taken with SPED 4110 or SPED 4370. The purpose is to implement strategies and techniques for teaching students with mild and moderate educational needs. Students will have the opportunity to work in educational settings with experienced teachers. One hundred twenty hours of required field.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4110 Curriculum And Methodology For Students With Moderate Educational Needs**

[3 credit hours]

This course focuses on community-referenced functional curricula approaches to teaching students with moderate educational needs. Topics include inclusionary activities, community-based instruction, social skills.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4120 Curriculum And Methodology For Students With Intensive Educational Needs**

[3 credit hours]

Examination of appropriate curriculum models, instructional strategies and adaptations, and related behavior problems for students with intensive educational needs. A transdisciplinary team approach is explored.

**Prerequisites:** SPED 4110 with a minimum grade of D- and SPED 4240 with a minimum grade of D-

**Corequisites:** SPED 4100

**Term Offered:** Spring



**SPED 4170 Working With Adults With Disabilities In Community Setting**  
[3 credit hours]

An in-depth study of strategies for linking youth and adults with disabilities to avenues leading to productive and fulfilling employment and community living. Special emphasis will be on supported/customized employment and the development of successful business partnerships to create jobs and careers for youth and adults with disabilities.

**Term Offered:** Fall

**SPED 4210 AAC for Young Children with Disabilities**  
[3 credit hours]

This course will provide an overview of alternative or augmentative modes of communication for children who are unable to meet their daily communication needs through natural modes such as speech, gestures or handwriting.

**Prerequisites:** CIEC 3200 with a minimum grade of D-

**Term Offered:** Summer

**SPED 4220 Diagnostic And Prescriptive Teaching Students With Disabilities**  
[4 credit hours]

Exploration of the development of visual, auditory and tactile-kinesthetic learning modalities and implications for social and academic learning with curricular consideration for math and language arts. Field experience required.

**SPED 4230 Field Practicum For Diagnostic And Prescriptive Teaching**  
[2 credit hours]

Provides opportunities for field experience to use and refine the teaching of basic skills presented in SPED 4220. Eighty hours of field required. Must be taken concurrently with SPED 4220.

**SPED 4240 Teaching Phonics, Contextual Reading And Writing To Learners With Special Needs**  
[3 credit hours]

Methods for teaching reading and writing to diverse learners. Emphasis on individualized and small-group approach using structured, explicit phonics in a balanced literacy program.

**Corequisites:** SPED 4100

**Term Offered:** Summer, Fall

**SPED 4250 Teaching Career And Vocational Skills To Youths With Disabilities**  
[3 credit hours]

This course is designed to teach the prospective teacher the necessary skills to enhance transition from school to adult life for students with special needs. The course will cover several issues in the area of transition, including best practices, interagency collaboration, as well as application in developing a transition plan and summary of performance for young adults with disabilities.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Fall

**SPED 4260 Family And Professional Partnership In Special Education**  
[3 credit hours]

Effective parent and professional partnerships will be explored. Interpersonal communication skills, legal issues, effective models for home-school communication, and differences in culture, values and family expectations will be discussed.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Summer, Fall

**SPED 4270 Team Models and Community Networking**  
[3 credit hours]

This course will focus on the skills, knowledge and ethical practices essential to the provision of effective service coordination and teaming for early intervention and early childhood special education.

**Prerequisites:** CIEC 3200 with a minimum grade of D-

**Term Offered:** Spring

**SPED 4310 Learning And Behavior Problems Of Children**  
[4 credit hours]

The purpose of this course is to present causes and characteristics of learning and behavioral problems. Emphasis of course: (a)theoretical models and considerations, (b)techniques of instruction and (3) the IEP.

**SPED 4320 Field Practicum For Learning And Behavior Problems**  
[1 credit hour]

Provides opportunities to use, refine and implement strategies for working with persons with specific learning disabilities presented in SPED 4310. Forty hours of field required. Taken concurrently with SPED 4310.

**SPED 4330 Child Study Institute: Ebd**  
[1 credit hour]

Provides educational settings for preservice teachers to practice effective behavioral/academic managing of children and youth experiencing emotional stress/trauma. Thirty hours of field required.

**SPED 4340 Effective Management Of Students With Special Needs In Educational Settings**  
[3 credit hours]

Techniques for managing student behavior. Topics include analyzing environments and problems, implementing and evaluating interventions, data collection and analysis, and handling aggression and noncompliance. Case-backed approach. Integrated field component required.

**Prerequisites:** Upper Division with a score of 1 and SPED 4110 with a minimum grade of D- and SPED 4240 with a minimum grade of D-

**Corequisites:** SPED 4100

**Term Offered:** Spring

**SPED 4350 Advanced Methods In Learning Disabilities**  
[3 credit hours]

An in-depth study of instructional methods and strategies for persons with learning disabilities. The focus will be on organization, study skills and self-advocacy strategies.

**SPED 4360 Clinical Practice In Specific Learning Disabilities**  
[1 credit hour]

Provides students with supervised practice in developing and implementing learning strategies and study skills for persons with learning problems. Required 15 hours instructional practice with weekly meetings with supervisors/instructors.

**SPED 4370 Curriculum And Methods For Students With Mild Educational Needs**  
[3 credit hours]

Study of causes and characteristics of mild disorders. Discussion will be on theoretical considerations as well as intervention approaches pertinent to the school and clinic setting. Taken concurrently with SPED 4100 and SPED 4110.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring

**SPED 4450 Methods of Teaching Students With Emotional Disturbance**  
[3 credit hours]

This course provides evaluation and application techniques of research-based methodologies for teaching students with emotional disturbance in school-based settings within the least restrictive environment.

**Prerequisites:** SPED 4340 with a minimum grade of D-

**Term Offered:** Fall

**SPED 4480 Integrated Field Experience: Best Practice**  
[5 credit hours]

**SPED 4510 Instruction Of Students With Physical And Other Health Impairments**

[3 credit hours]

Appropriate curriculum models, learning objectives and teaching strategies for students with physical or health impairing conditions are examined. Modification of materials, assessment options and alternative response modes will be discussed.

**SPED 4600 Professional Reflective Seminar**  
[3 credit hours]

This seminar is taken concurrently with student teaching/internship. Students will evaluate their behavior in relation to the classroom environment. The students will develop alternative strategies in the educational setting.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4620 Linguistic Diversity Issues In Speech-Language Pathology**  
[1 credit hour]

Explores the relationship of disorders of communication with the concept of community language as it impacts language development in children.

**SPED 4630 Collaboration For The Speech-Language Pathologist**  
[1 credit hour]

Develops an understanding of the roles and expertise of the professionals; enhances skills which benefit the communicatively disordered client by contributing to diagnostic and intervention terms.

**Prerequisites:** Upper Division with a score of 1

**SPED 4700 Meet Needs Young Children Disabilities**  
[9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in Early Childhood Education and focuses on knowledge and skills that general early childhood teachers must have to work with young children between the ages of birth to 5 years who have disabilities.

**Prerequisites:** CIEC 4600 with a minimum grade of D- and CIEC 4610 with a minimum grade of D-

**Corequisites:** SPED 4710

**Term Offered:** Spring

**SPED 4710 Field Meet Needs Young Children Disabilities**  
[7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments and activities for young children with special needs (infants, toddlers, or preschoolers). This field experience is part of the non-licensure "Fast-Track" ECE program.

**Prerequisites:** CIEC 4600 with a minimum grade of D- and CIEC 4610 with a minimum grade of D-

**Corequisites:** SPED 4700

**Term Offered:** Spring

**SPED 4800 Introduction to Vision Impairment and Blindness**  
[3 credit hours]

This course covers the anatomy and physiology of the eye, visual impairments and their implication for learning, working and independent living, as well as general issues and concepts related to blindness, the blind and the visually impaired.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D- and Upper Division with a score of 1

**SPED 4810 Implications Of Low Vision**  
[3 credit hours]

This course covers low vision conditions as well as instruction of persons with low vision. Advantages and disadvantages of specialized equipment are discussed alongside strategies for instruction. Rehearsal with the equipment is required.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D-

**Term Offered:** Summer

**SPED 4820 Introduction to Research in Vision**  
[3-5 credit hours]

Exposes undergraduate vision students to basic research skills and enables them to conduct research in areas of interests.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D-

**SPED 4830 Assessment in Vision**  
[3-5 credit hours]

Covers general assessment in special education but emphasizes assessment vision. This emphasis allows students to critique and administer vision assessment tools.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D-

**SPED 4870 Education Of The Blind And Visually Impaired**  
[3 credit hours]

The course focuses on methods of instruction of the blind and visually impaired in different settings; cultural diversity, instruction of the blind with additional disabilities, and various types of assessments and methodologies for curriculum adaptation are addressed.

**Prerequisites:** SPED 2910 with a minimum grade of D- and SPED 2040 with a minimum grade of D-

**SPED 4880 Independence Skills and Technologies for the Blind and Visually Impaired**  
[3 credit hours]

This course focuses on the general independence of persons who are blind or visually impaired. Covered are skills and strategies for independent living, adaptive technology, and orientation and mobility skills for the blind and visually impaired.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D- and Upper Division with a score of 1

**Term Offered:** Summer

**SPED 4900 Seminar In Special Education**  
[1-5 credit hours]

Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of Special Education will be the focus.

**Term Offered:** Spring, Summer, Fall

**SPED 4910 Directed Research In Special Education**

[1-5 credit hours]

Directed research provides students the opportunity to explore specific topics and develop individual research with a faculty member. Current questions in the area of Special Education will be the focus.

**SPED 4920 Readings In Special Education**

[1-5 credit hours]

Individual Readings is designed to provide students with opportunities to examine literature related to specific issues. The student works under the direction of staff in the Department of Special Education Services.

**SPED 4930 Student Teaching In Special Education**

[4-12 credit hours]

Planned field experience in public school classrooms under the direction of University supervisors. Full responsibility for the classroom is expected by the end of the student teaching experience.

**Prerequisites:** Upper Division with a score of 1**Term Offered:** Spring, Fall**SPED 4940 Internship/Externship In Special Education**

[4-12 credit hours]

Provides advanced undergraduate students with supervised practicum experiences at off-campus site, including schools, hospitals, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.

**Prerequisites:** Upper Division with a score of 1**SPED 4980 Special Topics In Special Education**

[1-5 credit hours]

An advanced course for undergraduate majors in special education or majors in related fields covering an important area of special education. Student may repeat this course under different section numbers.

**Term Offered:** Spring, Summer, Fall**SPED 4990 Independent Study - Special Education**

[1-5 credit hours]

Individual study provides students with opportunities to work individually on issues under the direction of department of Special Education Services faculty. The student meets with instructor without formal classes.

**Term Offered:** Spring, Summer, Fall

## BE in Adolescent and Young Adult Education

The adolescent program prepares students to teach junior high and high school students, grades 7-12, in a single academic/content area: (a) integrated language arts, (b) integrated mathematics, (c) integrated social studies, or (d) one of the science options.

### Integrated Mathematics

Code	Title	Hours
<b>University Core and General Education</b>		
Select University Core and General Education courses		36-42
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3

SPED 2040	Perspectives In The Field Of Exceptionalities	3
EDP 3200	Applied Psychology For Teachers	3
<b>Professional Education</b>		
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4550	Teaching Problem Solving In Mathematics	3
CI 4190	Practicum I	3
CI 4160	Methods of Teaching AYA Mathematics	3
CI 4290	Practicum II	3
CI 4260	Advanced Methods of Teaching AYA Mathematics	3
CI 4930	Internship/Student Teaching	9
CI 4390	Practicum III	3
CI 4740	Seminar: Managing the Mathematics Classroom	3
RESM 4200	Classroom Assessment	3
TSOC 3000	Schooling And Democratic Society	3
<b>Mathematics Content</b>		
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
MATH 1890	Elementary Linear Algebra	3
MATH 2190	Foundations of Mathematics	3
MATH 2850	Elementary Multivariable Calculus	4
MATH 3320	Introduction To Abstract Algebra	3
MATH 3440	Fundamentals Of Modern Geometry I	3
MATH 3450	Fundamentals Of Modern Geometry II	3
MATH 3510	History Of Mathematics	3
MATH 3610	Statistical Methods I	3
MATH 4380	Discrete Structures And Analysis Of Algorithms	3
MATH 4680	Introduction To Theory Of Probability	3
3/4000 elective		3
4000 elective		3
Total Hours		132-138

## Science

Students should choose one from the five listed.

Code	Title	Hours
<b>University Core and General Education</b>		
Select University Core and General Education courses		36-42
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
EDP 3200	Applied Psychology For Teachers	3
<b>Professional Education</b>		
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3

CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
RESM 4200	Classroom Assessment	3
CI 4170	Methods of Teaching AYA Science	3
CI 4290	Practicum II	3
CI 4270	Advanced Methods of Teaching AYA Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
CI 4930	Internship/Student Teaching	9
CI 4760	Seminar: Managing the Science Classroom	3
Total Hours		87-93

## Integrated Science Option

Code	Title	Hours
<b>Core Science</b>		
Select all six areas		
<i>Life Science Core</i>		
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1
EEES 3050	General Ecology	3
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
<i>Chemistry Core</i>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
CHEM 2410	Organic Chemistry I	3
<i>Physics Core</i>		
PHYS 1910	Frontiers Of Physics And Astronomy	3
PHYS 2070	General Physics I	5
PHYS 2080	General Physics II	5
<i>Earth and Space Science Core</i>		
ASTR 2010	Solar System Astronomy	3
EEES 2100	Fundamentals Of Geology	4
EEES 1020	Introductory Geology Laboratory	1
GEPL 4540	Weather And Climate	3
<i>Science and Mathematics Core</i>		
EEES 2010	Introduction To Environmental Studies	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
MATH 2600	Introduction To Statistics	3
<b>Advanced Science</b>		
Select one of the four areas:		10-16
<i>Advanced Life Science</i>		
BIOL 3010	Molecular Genetics	

BIOL 3030	Cell Biology	
BIOL 3040	Cell Biology Laboratory or BIOL 3020 Molecular Genetics Laboratory	
EEES 3060	General Ecology Laboratory	
EEES 4150	Evolution	
<i>Advanced Chemistry</i>		
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	
CHEM 2420	Organic Chemistry II	
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	
CHEM 3860	Advanced Laboratory I	
CHEM 3710	Physical Chemistry For The Biosciences I	
<i>Advanced Physics</i>		
PHYS 2100	Physics With Calculus	2
PHYS 3180	Intermediate Laboratory	
PHYS 3310	Modern Physics I	
PHYS 3610	Optics And Lasers	
<i>Advanced Earth and Space Science</i>		
ASTR 2020	Stars, Galaxies, And The Universe	
ASTR 2050	Elementary Astronomy Laboratory	
ASTR 2340	New Frontiers In Astronomy	
EEES 2400	Oceanography And Water Resources	
EEES 3100	Surficial Processes	
EEES 2230	Earth History: Historical Geology and Paleontology	
Total Hours		76-82

## Life Science Option

Code	Title	Hours
<b>Core and Advanced Life Science</b>		
BIOL/EEES 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL/EEES 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
BIOL 3010	Molecular Genetics	3
BIOL 3030	Cell Biology	3
BIOL 3040	Cell Biology Laboratory or BIOL 3020 Molecular Genetics Laboratory	2
EEES 3050	General Ecology	3
EEES 3060	General Ecology Laboratory	1
EEES 4150	Evolution	3
<b>Science and Mathematics Core</b>		
EEES 2010	Introduction To Environmental Studies	3
MATH 1750	Calculus For The Life Sciences With Applications I	4
MATH 1760	Calculus For The Life Sciences With Applications II	3
MATH 2600	Introduction To Statistics	3
<b>Supporting Life Science</b>		
CHEM 1230	General Chemistry I	4

CHEM 1280	General Chemistry Lab I	1
CHEM 1240	General Chemistry II	4
EEES 2100	Fundamentals Of Geology	4
GEPL 4540	Weather And Climate	3
PHYS 1320	Jurassic Physics	3

**Second Core Areas**

Select one of the following three areas: 4-13

*Chemistry (Recommended)*

Select 4 hours of the following:

CHEM 1230	General Chemistry I
CHEM 1280	General Chemistry Lab I
CHEM 1240	General Chemistry II
CHEM 1290	General Chemistry Lab II
CHEM 2410	Organic Chemistry I

*Physics*

Select 13 hours of the following:

MATH 1830/1840	Calculus I For Mathematicians, Scientists And Educators
PHYS 1910	Frontiers Of Physics And Astronomy
PHYS 2070	General Physics I
PHYS 2080	General Physics II

*Earth and Space Science*

Select 4 hours of the following:

ASTR 2010	Solar System Astronomy
EEES 2100	Fundamentals Of Geology
EEES 1020	Introductory Geology Laboratory
GEPL 4540	Weather And Climate

Total Hours 61-70

**Earth and Space Science Option**

Code	Title	Hours
<b>Core and Advanced Earth Space Science</b>		
ASTR 2010	Solar System Astronomy	3
EEES 2100	Fundamentals Of Geology	4
EEES 1020	Introductory Geology Laboratory	1
GEPL 4540	Weather And Climate	3
ASTR 2020	Stars, Galaxies, And The Universe	3
ASTR 2050	Elementary Astronomy Laboratory	1
ASTR 2340	New Frontiers In Astronomy	3
EEES 2400	Oceanography And Water Resources	3
EEES 3100	Surficial Processes	3
EEES 2230	Earth History: Historical Geology and Paleontology	3
<b>Science and Mathematics Core</b>		
EEES 2010	Introduction To Environmental Studies	3
MATH 1750	Calculus For The Life Sciences With Applications I	4
MATH 1760	Calculus For The Life Sciences With Applications II	3
MATH 2600	Introduction To Statistics	3
<b>Supporting Earth and Space Science</b>		
EEES 2150	Biodiversity	4
CHEM 1230	General Chemistry I	4

CHEM 1280	General Chemistry Lab I	1
PHYS 1320	Jurassic Physics	3

**Second Core Area**

Select one of three areas: 8-13

*Chemistry (Recommended)*

CHEM 1240	General Chemistry II
CHEM 1290	General Chemistry Lab II
CHEM 2410	Organic Chemistry I

*Physics*

MATH 1830/1840	Calculus I For Mathematicians, Scientists And Educators
PHYS 1910	Frontiers Of Physics And Astronomy
PHYS 2070	General Physics I
PHYS 2080	General Physics II

*Life Science*

EEES 2160	Biodiversity Laboratory
EEES 3050	General Ecology
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance

Total Hours 60-65

**Chemistry Option**

Code	Title	Hours
<b>Core and Advanced Chemistry</b>		
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
CHEM 3710	Physical Chemistry For The Biosciences I	3
CHEM 3860	Advanced Laboratory I	2
<b>Science and Mathematics Core</b>		
EEES 2010	Introduction To Environmental Studies	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
MATH 2600	Introduction To Statistics	3
<b>Supporting Chemistry</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
EEES 2100	Fundamentals Of Geology	4
PHYS 2070	General Physics I	5
PHYS 2080	General Physics II	5
<b>Second Core Area</b>		



Select one of three areas: 7-17

**Physics**

Recommended

PHYS 1910 Frontiers Of Physics And Astronomy

PHYS 2070 General Physics I

PHYS 2080 General Physics II

**Earth and Space Science**

EEES 1020 Introductory Geology Laboratory

ASTR 2010 Solar System Astronomy

GEPL 4540 Weather And Climate

**Life Science**

EEES 3050 General Ecology

BIOL 2180 Fundamentals of Life Science Laboratory:  
Biomolecules, Cells, and InheritanceBIOL/EEES 2150 Fundamentals Of Life Science: Diversity Of Life,  
Evolution And AdaptationBIOL/EEES 2160 Fundamentals Of Life Science Laboratory: Diversity  
Of Life, Evolution And Adaptation

Total Hours 62-72

**Physics Option**

Code	Title	Hours
<b>Core and Advanced Physics</b>		
PHYS 1910	Frontiers Of Physics And Astronomy	3
PHYS 2070	General Physics I	5
PHYS 2080	General Physics II	5
PHYS 3180	Intermediate Laboratory	3
PHYS 3310	Modern Physics I	3
PHYS 2100	Physics With Calculus	2
PHYS 3610	Optics And Lasers	3
<b>Science and Mathematics Core</b>		
EEES 2010	Introduction To Environmental Studies	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
MATH 2600	Introduction To Statistics	3
<b>Supporting Physics</b>		
ASTR 2010	Solar System Astronomy	3
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
CHEM 1230	General Chemistry I	4
GEPL 4540	Weather And Climate	3
<b>Second Core Area</b>		
Select one of three areas:		5-9
<b>Earth and Space Science</b>		
EEES 2100	Fundamentals Of Geology	
EEES 1020	Introductory Geology Laboratory	
<b>Chemistry</b>		
CHEM 1280	General Chemistry Lab I	

**Science and Mathematics Core**

EEES 2010 Introduction To Environmental Studies 3

MATH 1830 Calculus I For Mathematicians, Scientists And Educators 4

MATH 1840 Calculus II For Mathematicians, Scientists And Educators 4

MATH 2600 Introduction To Statistics 3

**Supporting Physics**

ASTR 2010 Solar System Astronomy 3

BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance 4

CHEM 1230 General Chemistry I 4

GEPL 4540 Weather And Climate 3

**Second Core Area**

Select one of three areas: 5-9

**Earth and Space Science**

EEES 2100 Fundamentals Of Geology

EEES 1020 Introductory Geology Laboratory

**Chemistry**

CHEM 1280 General Chemistry Lab I

CHEM 1240 General Chemistry II

CHEM 1290 General Chemistry Lab II

CHEM 2410 Organic Chemistry I

**Life Science**BIOL/EEES 2150 Fundamentals Of Life Science: Diversity Of Life,  
Evolution And AdaptationBIOL/EEES 2160 Fundamentals Of Life Science Laboratory: Diversity  
Of Life, Evolution And AdaptationBIOL 2180 Fundamentals of Life Science Laboratory:  
Biomolecules, Cells, and Inheritance

EEES 3050 General Ecology

Total Hours 57-61

**Integrated Language Arts**

Code	Title	Hours
<b>University Core and General Education</b>		36-42
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
EDP 3200	Applied Psychology For Teachers	3
<b>Professional Education</b>		
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4320	Literature For Young Adults	3
CI 4190	Practicum I	3
RESM 4200	Classroom Assessment	3
CI 4150	Methods of Teaching AYA English Language Arts	3
CI 4290	Practicum II	3
CI 4250	Advanced Methods of Teaching AYA English Language Arts	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
CI 4930	Internship/Student Teaching	9
CI 4730	Seminar Managing the English Language Arts Classroom	3
<b>Language Arts Content</b>		
ENGL 2010	Advanced Composition	3
ENGL 3600	American Literary Traditions	3
ENGL 3610	British Literary Traditions	3
ENGL 3150	Linguistic Principles	3
ENGL 3770	World Literature And Cultures	3
ENGL 3790	Foundations Of Literary Study	3
ENGL 3810	Shakespeare I	3
ENGL 4090	Current Writing Theory	3
Select one of the following:		3
ENGL 3010	Creative Writing	
ENGL 3050	Persuasive Writing	

**Pre-Professional Education**

EDU 1700 Introduction to Education 3

ETPT 2020 Technology And Multimedia In Educational Environments 3

SPED 2040 Perspectives In The Field Of Exceptionalities 3

EDP 3200 Applied Psychology For Teachers 3

**Professional Education**

CI 4490 Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach 3

CI 4320 Literature For Young Adults 3

CI 4190 Practicum I 3

RESM 4200 Classroom Assessment 3

CI 4150 Methods of Teaching AYA English Language Arts 3

CI 4290 Practicum II 3

CI 4250 Advanced Methods of Teaching AYA English Language Arts 3

CI 4390 Practicum III 3

TSOC 3000 Schooling And Democratic Society 3

CI 4930 Internship/Student Teaching 9

CI 4730 Seminar Managing the English Language Arts Classroom 3

**Language Arts Content**

ENGL 2010 Advanced Composition 3

ENGL 3600 American Literary Traditions 3

ENGL 3610 British Literary Traditions 3

ENGL 3150 Linguistic Principles 3

ENGL 3770 World Literature And Cultures 3

ENGL 3790 Foundations Of Literary Study 3

ENGL 3810 Shakespeare I 3

ENGL 4090 Current Writing Theory 3

Select one of the following: 3

ENGL 3010 Creative Writing

ENGL 3050 Persuasive Writing

ENGL 4030	Writing Workshop In Nonfictional Prose	
ENGL 4070	Writing Workshop In Poetry	
ENGL 4080	Writing Workshop In Fiction	
Select one of the following:		3-4
COMM 2100	News Writing for Media	
COMM 2150	Digital Publishing	
COMM 2600	Public Presentations	
COMM 3610	Speech Writing	
COMM 3830	Basic Principles Of Debate And Forensics	3
COMM 4110	High School Publications	3
Select one of the following:		3
ENGL 4650	African American Writers Before The 20th Century	
ENGL 4660	African American Literature In The 20th Century	
ENGL 4690	Native American Literature And Culture	
Total Hours		126-133

## Integrated Social Studies

Code	Title	Hours
<b>University Core and General Education</b>		36-42
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
EDP 3200	Applied Psychology For Teachers	3
<b>Professional Education</b>		
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4720	Best Practices for Teaching Social Studies	3
CI 4190	Practicum I	3
RESM 4200	Classroom Assessment	3
CI 4180	Methods of Teaching AYA Social Studies	3
CI 4290	Practicum II	3
CI 4280	Advanced Methods of Teaching AYA Social Studies	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
CI 4930	Internship/Student Teaching	9
CI 4790	Seminar: Managing the Social Studies Classroom	3
<b>Social Studies Content</b>		
HIST 2000	Methods Seminar	4
<i>U.S. History</i>		
HIST 2010	America To 1865	3
HIST 2020	America From 1865	3
<i>World History</i>		
HIST 1050	World History To 1500	3
HIST 1060	World History From 1500	3
Select two of the following:		6
HIST 3310	Ethnic America	

HIST 3250	African-American History To 1865	
HIST 3260	African-American History From 1865	
HIST 3290	Ohio History	
HIST 3330	Western American Indians	
HIST 3480	American Labor And Working Class History	
HIST 3600	Women In American History	
<i>Non-U.S. History</i>		
Select two of the following:		6
HIST 1070	The Contemporary World	
HIST 2040	Ancient Near East	
HIST 3210	Modern Latin America	
HIST 3540	History Of The Middle East From 600 To 1500	
HIST 3550	History Of The Middle East Since 1500	
HIST 4010	Greek History	
HIST 4020	Roman History	
HIST 4470	People And Politics In Mexico	
HIST 4720	Modern Chinese History	
HIST 4740	Modern Japanese History	
ARTH 3250	Topics In Asian Art	
ARTH 3300	African Art	

### Social Sciences Core

ANTH 2800	Cultural Anthropology	3
ECON 1010	Introduction To Economic Issues	3
ECON 1150	Principles Of Macroeconomics	3
GEPL 2010	Fundamentals Of Geography	3
GEPL 4040	Geography Education Strategies	3
PSC 1200	American National Government	3
PSC 2300	Principles Of State And Local Government	3
PSC 2700	Principles Of International Relations	3
PSY 1010	Principles Of Psychology	3
SOC 4580	Science, Technology, And Social Change	3
SOC 4800	Social Change in Developing Nations	3
Total Hours		148-154

### Integrated Mathematics

Below is a sample plan of study. Consult your degree audit for your program requirements

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
University Core		3
University Core		3
University Core		3
Hours		17

**Second Term**

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
EDU 1700	Introduction to Education	3
MATH 2190	Foundations of Mathematics	3
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
Foreign Language		4
Hours		17

**Third Term**

MATH 3440	Fundamentals Of Modern Geometry I	3
MATH 3610	Statistical Methods I	3
MATH 3510	History Of Mathematics	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
EDP 3200	Applied Psychology For Teachers	3
Hours		18

**Fourth Term**

MATH 2850	Elementary Multivariable Calculus	4
MATH 3450	Fundamentals Of Modern Geometry II	3
MATH 1890	Elementary Linear Algebra	3
MATH 3320	Introduction To Abstract Algebra	3
University Core		3
Lab		1
Hours		17

**Fifth Term**

CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4550	Teaching Problem Solving In Mathematics	3
CI 4190	Practicum I	3
MATH 4380	Discrete Structures And Analysis Of Algorithms	3
University Core		3
Hours		15

**Sixth Term**

RESM 4200	Classroom Assessment	3
CI 4160	Methods of Teaching AYA Mathematics	3
CI 4290	Practicum II	3
University Core		3
CI 3400	Foundations of Literacy	3
MATH elective		3
Hours		18

**Seventh Term**

CI 4260	Advanced Methods of Teaching AYA Mathematics	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3

MATH 4680	Introduction To Theory Of Probability	3
4000 MATH elective		3
Hours		15

**Eighth Term**

CI 4740	Seminar: Managing the Mathematics Classroom	3
CI 4930	Internship/Student Teaching	9
University Core		3
Hours		15
Total Hours		132

**Science****Integrated Science Option**

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
PHYS 1910	Frontiers Of Physics And Astronomy	3
EDU 1700	Introduction to Education	3
EDU 1000	Orientation To Education	1
Hours		16

**Second Term**

BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
PHYS 1340	The Nature Of Science	3
EEES 1020	Introductory Geology Laboratory	1
Foreign Language		4
Hours		17

**Third Term**

CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
PHYS 2070	General Physics I	5
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1110	College Composition I	3
Hours		16

**Fourth Term**

CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
PHYS 2080	General Physics II	5

SPED 2040	Perspectives In The Field Of Exceptionalities	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Hours		16
<b>Fifth Term</b>		
EEES 3050	General Ecology	3
EEES 3060	General Ecology Laboratory	1
BIOL 3010	Molecular Genetics	3
CHEM 2410	Organic Chemistry I	3
GEPL 4540	Weather And Climate	3
MATH 2600	Introduction To Statistics	3
Hours		16
<b>Sixth Term</b>		
BIOL 3030	Cell Biology	3
BIOL 3040	Cell Biology Laboratory	2
EEES 2100	Fundamentals Of Geology	4
EDP 3200	Applied Psychology For Teachers	3
University Core		3
Hours		15
<b>Seventh Term</b>		
EEES 2010	Introduction To Environmental Studies	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
University Core		3
Hours		15
<b>Eighth Term</b>		
EEES 4150	Evolution	3
ASTR 2010	Solar System Astronomy	3
RESM 4200	Classroom Assessment	3
CI 4170	Methods of Teaching AYA Science	3
CI 4290	Practicum II	3
University Core		
Hours		15
<b>Ninth Term</b>		
CI 4270	Advanced Methods of Teaching AYA Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
University Core		3
University Core		3
Hours		15
<b>Tenth Term</b>		
CI 4760	Seminar: Managing the Science Classroom	3

CI 4930	Internship/Student Teaching	9
Hours		12
Total Hours		153

## Life Science Option

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
BIOL 2150	Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation	4
BIOL 2160	Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation	1
MATH 1750	Calculus For The Life Sciences With Applications I	4
EDU 1700	Introduction to Education	3
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
BIOL 2180	Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance	1
EEES 1020	Introductory Geology Laboratory	1
MATH 1760	Calculus For The Life Sciences With Applications II	3
PHYS 1320	Jurassic Physics	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
Hours		18
<b>Third Term</b>		
BIOL 3010	Molecular Genetics	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
EEES 3050	General Ecology	3
EEES 3060	General Ecology Laboratory	1
SPED 2040	Perspectives In The Field Of Exceptionalities	3
EDP 3200	Applied Psychology For Teachers	3
Hours		18
<b>Fourth Term</b>		
BIOL 3030	Cell Biology	3
BIOL 3040	Cell Biology Laboratory	2
CHEM 1240	General Chemistry II	4
EEES 2100	Fundamentals Of Geology	4
Foreign Language		4
Hours		17

**Fifth Term**

EEES 2010	Introduction To Environmental Studies	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
University Core		3
University Core		3
Hours		18

**Sixth Term**

EEES 4150	Evolution	3
ASTR 2010	Solar System Astronomy	3
RESM 4200	Classroom Assessment	3
CI 4170	Methods of Teaching AYA Science	3
CI 4290	Practicum II	3
University Core		3
Hours		18

**Seventh Term**

GEPL 4540	Weather And Climate	3
MATH 2600	Introduction To Statistics	3
CI 4270	Advanced Methods of Teaching AYA Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
University Core		3
Hours		18

**Eighth Term**

CI 4760	Seminar: Managing the Science Classroom	3
CI 4930	Internship/Student Teaching	9
University Core		3
Hours		15
Total Hours		138

**Earth and Space Science Option**

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
EEES 1020	Introductory Geology Laboratory	1
EEES 2100	Fundamentals Of Geology	4
MATH 1750	Calculus For The Life Sciences With Applications I	4
EDU 1700	Introduction to Education	3
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
ASTR 2020	Stars, Galaxies, And The Universe	3
ASTR 2050	Elementary Astronomy Laboratory	1

PHYS 1320	Jurassic Physics	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1760	Calculus For The Life Sciences With Applications II	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
Hours		16

**Third Term**

EEES 2010	Introduction To Environmental Studies	3
EEES 2150	Biodiversity	4
ASTR 2010	Solar System Astronomy	3
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Hours		18

**Fourth Term**

EEES 2400	Oceanography And Water Resources	3
ASTR 2340	New Frontiers In Astronomy	3
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
EDP 3200	Applied Psychology For Teachers	3
Foreign Language		4
Hours		18

**Fifth Term**

EEES 3100	Surficial Processes	3
CHEM 2410	Organic Chemistry I	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
University Core		3
Hours		18

**Sixth Term**

EEES 2230	Earth History: Historical Geology and Paleontology	3
RESM 4200	Classroom Assessment	3
CI 4170	Methods of Teaching AYA Science	3
CI 4290	Practicum II	3
University Core		3
University Core		3
Hours		18

**Seventh Term**

GEPL 4540	Weather And Climate	3
MATH 2600	Introduction To Statistics	3
CI 4270	Advanced Methods of Teaching AYA Science	3
CI 4390	Practicum III	3



TSOC 3000	Schooling And Democratic Society	3
University Core		3
Hours		18
<b>Eighth Term</b>		
CI 4760	Seminar: Managing the Science Classroom	3
CI 4930	Internship/Student Teaching	9
University Core		3
Hours		15
Total Hours		137

## Chemistry Option

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
CHEM 1230	General Chemistry I	4
CHEM 1280	General Chemistry Lab I	1
PHYS 1910	Frontiers Of Physics And Astronomy	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
ENGL 1110	College Composition I	3
Hours		16
<b>Second Term</b>		
CHEM 1240	General Chemistry II	4
CHEM 1290	General Chemistry Lab II	1
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
ETPT 2020	Technology And Multimedia In Educational Environments	3
EDU 1700	Introduction to Education	3
Hours		18
<b>Third Term</b>		
CHEM 2410	Organic Chemistry I	3
CHEM 2460	Organic Chemistry Laboratory I for Non-Majors	1
PHYS 2070	General Physics I	5
EEES 2010	Introduction To Environmental Studies	3
University Core		3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Hours		18
<b>Fourth Term</b>		
CHEM 2420	Organic Chemistry II	3
CHEM 2470	Organic Chemistry Laboratory II for Non-Majors	1
PHYS 2080	General Physics II	5
EDP 3200	Applied Psychology For Teachers	3

University Core		3
University Core		3
Hours		18
<b>Fifth Term</b>		
CHEM 3710	Physical Chemistry For The Biosciences I	3
CHEM 3860	Advanced Laboratory I	2
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
Foreign Language		4
Hours		18

<b>Sixth Term</b>		
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
RESM 4200	Classroom Assessment	3
CI 4170	Methods of Teaching AYA Science	3
CI 4290	Practicum II	3
University Core		3
Hours		16

<b>Seventh Term</b>		
EEES 2100	Fundamentals Of Geology	4
MATH 2600	Introduction To Statistics	3
CI 4270	Advanced Methods of Teaching AYA Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
Hours		16

<b>Eighth Term</b>		
CI 4760	Seminar: Managing the Science Classroom	3
CI 4930	Internship/Student Teaching	9
University Core		3
Hours		15
Total Hours		135

## Physics Option

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
PHYS 1910	Frontiers Of Physics And Astronomy	3
CHEM 1230	General Chemistry I	4
PHYS 2070	General Physics I	5
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
Hours		17

**Second Term**

MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
PHYS 2080	General Physics II	5
EDU 1700	Introduction to Education	3
University Core		3
University Core		3
Hours		18

**Third Term**

EEES 2010	Introduction To Environmental Studies	3
PHYS 2100	Physics With Calculus	2
BIOL 2170	Fundamentals of Life Science: Biomolecules, Cells, and Inheritance	4
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1110	College Composition I	3
EDP 3200	Applied Psychology For Teachers	3
Hours		18

**Fourth Term**

PHYS 3180	Intermediate Laboratory	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
PHYS 3310	Modern Physics I	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
University Core		3
University Core		3
Hours		18

**Fifth Term**

PHYS 3610	Optics And Lasers	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
Foreign Language		4
Hours		16

**Sixth Term**

MATH 2600	Introduction To Statistics	3
GEPL 4540	Weather And Climate	3
RESM 4200	Classroom Assessment	3
CI 4170	Methods of Teaching AYA Science	3
CI 4290	Practicum II	3
Hours		15

**Seventh Term**

ASTR 2010	Solar System Astronomy	3
EEES 2100	Fundamentals Of Geology	4
EEES 1020	Introductory Geology Laboratory	1
CI 4270	Advanced Methods of Teaching AYA Science	3

CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
Hours		17

**Eighth Term**

CI 4760	Seminar: Managing the Science Classroom	3
CI 4930	Internship/Student Teaching	9
University Core		3
Hours		15
Total Hours		134

## Integrated Language Arts

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
EDU 1000	Orientation To Education	1
University Core		3
University Core		3
University Core		3
Hours		16

**Second Term**

ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
University Core		3
University Core		3
Lab		1
Hours		16

**Third Term**

ENGL 3790	Foundations Of Literary Study	3
ENGL 2010	Advanced Composition	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Foreign Language		4
COMM 2100	News Writing for Media	4
Hours		17

**Fourth Term**

ENGL 3810	Shakespeare I	3
ENGL 4090	Current Writing Theory	3
ENGL 3150	Linguistic Principles	3
COMM 3830	Basic Principles Of Debate And Forensics	3
EDP 3200	Applied Psychology For Teachers	3
Hours		15

**Fifth Term**

ENGL 3600	American Literary Traditions	3
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ENGL 3010	Creative Writing	3
4000 Level English Elective		3
CI 4320	Literature For Young Adults	3
CI 4190	Practicum I	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
	Hours	18
<b>Sixth Term</b>		
ENGL 3610	British Literary Traditions	3
ENGL 3770	World Literature And Cultures	3
RESM 4200	Classroom Assessment	3
CI 4150	Methods of Teaching AYA English Language Arts	3
CI 4290	Practicum II	3
4000 Level English Elective		3
	Hours	18
<b>Seventh Term</b>		
CI 4250	Advanced Methods of Teaching AYA English Language Arts	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
University Core		3
COMM 4110	High School Publications	3
	Hours	15
<b>Eighth Term</b>		
CI 4730	Seminar Managing the English Language Arts Classroom	3
CI 4930	Internship/Student Teaching	9
University Core		3
	Hours	15
	Total Hours	130

## Integrated Social Studies

Below is a sample plan of study. Consult your degree audit for your program requirements.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
Foreign Language		4
University Core		3
	Hours	17
<b>Second Term</b>		
EDU 1700	Introduction to Education	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3

HIST 2010	America To 1865	3
HIST 1050	World History To 1500	3
ANTH 2800	Cultural Anthropology	3
	Hours	15
<b>Third Term</b>		
SPED 2040	Perspectives In The Field Of Exceptionalities	3
HIST 2000	Methods Seminar	4
HIST 2020	America From 1865	3
HIST 1060	World History From 1500	3
ECON 1010	Introduction To Economic Issues	3
University Core		3
	Hours	19
<b>Fourth Term</b>		
EDP 3200	Applied Psychology For Teachers	3
U.S. HIST elective		3
NON U.S. HIST elective		3
ECON 1150	Principles Of Macroeconomics	3
GEPL 2010	Fundamentals Of Geography	3
PSC 1200	American National Government	3
	Hours	18
<b>Fifth Term</b>		
CI 4720	Best Practices for Teaching Social Studies	3
CI 4190	Practicum I	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
U.S. HIST elective		3
NON U.S. HIST elective		3
PSC 2300	Principles Of State And Local Government	3
	Hours	18
<b>Sixth Term</b>		
RESM 4200	Classroom Assessment	3
CI 4180	Methods of Teaching AYA Social Studies	3
CI 4290	Practicum II	3
GEPL 4040	Geography Education Strategies	3
PSC 2700	Principles Of International Relations	3
PSY 1010	Principles Of Psychology	3
	Hours	18
<b>Seventh Term</b>		
CI 4280	Advanced Methods of Teaching AYA Social Studies	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
SOC 4580	Science, Technology, And Social Change	3
SOC 4800	Social Change in Developing Nations	3
Lab		1
	Hours	16
<b>Eighth Term</b>		
CI 4930	Internship/Student Teaching	9

CI 4790	Seminar: Managing the Social Studies Classroom	3
University Core		3
Hours		15
Total Hours		136

## BE in Early Childhood Education (Pre K-5)

The early childhood education programs prepare students to work with children who are typically developing, at-risk, gifted and mild-moderate special needs infants, toddlers, preschoolers, kindergartners and primary students in a variety of settings (ages 3-10/grades PreK-5).

Code	Title	Hours
<b>University Core and General Education</b>		
Select a minimum of 36-42 hours		36
<b>Pre-Professional Education</b> <sup>1</sup>		
AED 2100	Art Education for the Pre-Primary and Primary Child	3
CI 3400	Foundations of Literacy	3
CI 3430	Phonics And Word Identification For Early Childhood Education	3
CIEC 3200	Early Childhood Education: Philosophy And Practice	3
CIEC 3350	Child, Family & Public Policy In Early Childhood	3
CIEC 4340	Infant/Toddler Curriculum	3
EDP 3200	Applied Psychology For Teachers	3
EDP 3210	Child Development For Early Childhood Educators	3
EDP 4210	Child Behavior And Development	3
EDU 1000	Orientation To Education	1
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
TSOC 2000	Diversity In Contemporary Society	3
<b>Cohort Semesters</b> <sup>2</sup>		
<i>Cohort I</i>		
CIEC 4070	Effective Teaching Practices, Pre-K To 3rd Grade	3
CIEC 4480	Field Experience: Cohort I	3
GIFT 4100	Educating Young Talented And Gifted Children	3
SPED 4080	Curriculum Adaptations & Strategies In Early Childhood Education	3
<i>Cohort II</i>		
CIEC 4460	Science Methods For Early Childhood Education	3
CI 4510	Mathematics For The Young Child	3
CIEC 3380	Field Experience: Socio-Cultural Dimensions Of Education	3
CIEC 4750	Developmental Assessment In Early Childhood	3
CI 3460	Literacy And Reading Development For Young Children	3

<i>Cohort III</i>		
CIEC 4550	Teaching Methods For Early Childhood Social Studies	3
CIEC 4770	Practicum: Primary Grades	3
CI 4110	Developing Instruction for Middle Grades 4-5 Literacy and Social Studies	3
CI 4120	Developing Instruction in Mathematics and Science for Grades 4-5	3
CI 4470	Literacy Assessment and Remediation	3
<i>Cohort IV</i>		
CIEC 4930	Internship/Student Teaching	8-16
CIEC 4900	Internship/Student Teaching Seminar	3
Total Hours		129-137

<sup>1</sup> Must be completed prior to making application for professional standing. See advisor for sequencing.

<sup>2</sup> (final four semesters in the program)  
Professional standing required. Students must register for all courses listed under each cohort semester. See advisor for sequencing of courses.

## Reminders

A background check must be completed during CIEC 3200 in order to take CIEC 4340. Mastery of reading, writing and math (ACT/SAT/ Praxis) should be completed while enrolled in CIEC 4340, to be ready for admission to professional education. A minimum 2.7 GPA must be achieved before admission to professional education. Please see your academic advisor prior to applying for professional education. **Ohio Assessment for Educators (OAE) should be taken during Cohort III and must be successfully completed to be recommended for licensure.**

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Bachelor of Education - Early Childhood Education (PK-3 License)

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1210	Mathematics For Education Majors I	3
Social Sciences Core		3
Natural Science Core		3
Multi-Cultural Non-Western Core		3
Hours		16
<b>Second Term</b>		
EDU 1700	Introduction to Education	3
MATH 1220	Mathematics For Education Majors II	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
TSOC 2000	Diversity In Contemporary Society	3

EDP 3200	Applied Psychology For Teachers	3
Hours		15
<b>Third Term</b>		
MUS 2200	Music Theory For The Non-Major	3
CIEC 3200	Early Childhood Education: Philosophy And Practice	3
CIEC 4340	Infant/Toddler Curriculum	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
CI 3430	Phonics And Word Identification For Early Childhood Education	3
EDP 3210	Child Development For Early Childhood Educators	3
Hours		18
<b>Fourth Term</b>		
AED 2100	Art Education for the Pre-Primary and Primary Child	3
CI 3400	Foundations of Literacy	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
CIEC 3350	Child, Family & Public Policy In Early Childhood	3
EDP 4210	Child Behavior And Development	3
SPECIAL CONSIDERATION: Students must be accepted into Professional Education; Acceptance requires the completion of 48 hours with min 2.7 GPA, mastery of reading, writing, and math skill as documented by acceptable scores on ACT, SAT, or Praxis Core Academic Skills for Educators tests		
Hours		15
<b>Fifth Term</b>		
Cohort 1		
CIEC 4070	Effective Teaching Practices, Pre-K To 3rd Grade	3
CIEC 4480	Field Experience: Cohort I	3
GIFT 4100	Educating Young Talented And Gifted Children	3
SPED 4080	Curriculum Adaptations & Strategies In Early Childhood Education	3
Humanities Core		3
Natural Science Core		3
Natural Science Lab		1
Hours		19
<b>Sixth Term</b>		
Cohort 2		
CIEC 4460	Science Methods For Early Childhood Education	3
CI 4510	Mathematics For The Young Child	3
CIEC 3380	Field Experience: Socio-Cultural Dimensions Of Education	3
CIEC 4750	Developmental Assessment In Early Childhood	3

CI 3460	Literacy And Reading Development For Young Children	3
Social Science Core		3
Hours		18
<b>Seventh Term</b>		
Cohort 3		
CIEC 4550	Teaching Methods For Early Childhood Social Studies	3
CI 4110	Developing Instruction for Middle Grades 4-5 Literacy and Social Studies	3
CIEC 4770	Practicum: Primary Grades	3
CI 4120	Developing Instruction in Mathematics and Science for Grades 4-5	3
CI 4470	Literacy Assessment and Remediation	3
Core General Elective		3
Hours		18
<b>Eighth Term</b>		
Cohort 4		
CIEC 4930	Internship/Student Teaching	12
CIEC 4900	Internship/Student Teaching Seminar	3
Hours		15
Total Hours		134

## BE in Middle Childhood Education (4-9)

The middle childhood education program prepares students to teach elementary middle grade, middle school, and junior high students in **two** licensure/content areas to be chosen from the following: (a) reading and language arts, (b) mathematics, (c) social studies, and (d) science (ages 8-14/grades 4-9).

Code	Title	Hours
<b>University Core and General Education</b>		36-42
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
CI 3400	Foundations of Literacy	3
CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
<b>Professional Education</b>		
CI 4400	Reading In Middle Grades	3
CI 4190	Practicum I	3
RESM 4200	Classroom Assessment	3
CI 4290	Practicum II	3
CI 4470	Literacy Assessment and Remediation	3
CI 4390	Practicum III	3



TSOC 3000	Schooling And Democratic Society	3
CI 4930	Internship/Student Teaching	12

**Areas of Study**

Select two of the following areas of study:	24
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*Language Arts*

CI 4320	Literature For Young Adults
CI 4050	Teaching Methods in Middle Grades English Language Arts
CI 4210	Advanced Teaching Methods in Middle Grades English Language Arts
CI 4730	Seminar Managing the English Language Arts Classroom

*Mathematics*

CI 4550	Teaching Problem Solving In Mathematics
CI 4060	Teaching Methods in Middle Grades Mathematics
CI 4220	Advanced Teaching Methods in Middle Grades Mathematics
CI 4740	Seminar: Managing the Mathematics Classroom

*Science*

CI 4680	The Nature of Science
CI 4070	Teaching Methods in Middle Grades Science
CI 4230	Advanced Teaching Methods in Middle Grades Science
CI 4760	Seminar: Managing the Science Classroom

*Social Studies*

CI 4720	Best Practices for Teaching Social Studies
CI 4080	Teaching Methods in Middle Grades Social Studies
CI 4240	Advanced Teaching Methods in Middle Grades Social Studies
CI 4790	Seminar: Managing the Social Studies Classroom

**Licensure Areas**

Select two of the following areas:	<sup>1</sup> 20-24
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*Mathematics*

MATH 1830	Calculus I For Mathematicians, Scientists And Educators
MATH 1840	Calculus II For Mathematicians, Scientists And Educators
MATH 2600	Introduction To Statistics
MATH 2620	Discrete Probability
MATH 3440	Fundamentals Of Modern Geometry I
MATH 1890	Elementary Linear Algebra

*Reading and Language Arts*

ENGL 3150	Linguistic Principles
ENGL 2730	Reading Poetry
ENGL 2720	Reading Drama
ENGL 3600	American Literary Traditions
ENGL 3790	Foundations Of Literary Study
ENGL 4090	Current Writing Theory
CI 4300	Literature For Children

*Science*

Life Science:

EEES 2150	Biodiversity
EEES 2160	Biodiversity Laboratory
Chemistry:	
CHEM 1100	Chemistry And Society
Physics:	
NASC 1100	Our Physical World
NASC 1110	Physical World Laboratory
Earth/Space Science:	
ASTR 1010	Survey Of Astronomy
EEES 1010	Physical Geology
EEES 1020	Introductory Geology Laboratory
GEPL 4540	Weather And Climate
Social Studies:	
Related content area	
ECON 1010	Introduction To Economic Issues
PSC 1200	American National Government
PSC 1710	Current International Problems
GEPL 3050	Geography Of U.s. And Canada
U.S. History:	
HIST 2010	America To 1865
HIST 2020	America From 1865
World History:	
HIST 1050	World History To 1500
HIST 1060	World History From 1500

Total Hours	131-141
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<sup>1</sup> Students will concentrate in two licensure areas and will complete course work in each area.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Middle Childhood Education Social Studies/Science

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
University Core		3
ECON 1010	Introduction To Economic Issues	3
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1
Hours		18
<b>Second Term</b>		
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3

SPED 2040	Perspectives In The Field Of Exceptionalities	3
PSC 1200	American National Government	3
PSC 1710	Current International Problems	3
ASTR 1010	Survey Of Astronomy	3
Hours		18

**Third Term**

EDU 1700	Introduction to Education	3
GEPL 3050	Geography Of U.s. And Canada	3
HIST 2010	America To 1865	3
GEPL 4540	Weather And Climate	3
EEES 1010	Physical Geology	3
EEES 1020	Introductory Geology Laboratory	1
Hours		16

**Fourth Term**

CI 3400	Foundations of Literacy	3
CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
HIST 2020	America From 1865	3
CHEM 1100	Chemistry And Society	3
Hours		15

**Fifth Term**

CI 4400	Reading In Middle Grades	3
CI 4720	Best Practices for Teaching Social Studies	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
HIST 1050	World History To 1500	3
NASC 1100	Our Physical World	3
NASC 1110	Physical World Laboratory	1
Hours		19

**Sixth Term**

RESM 4200	Classroom Assessment	3
CI 4080	Teaching Methods in Middle Grades Social Studies	3
CI 4070	Teaching Methods in Middle Grades Science	3
CI 4290	Practicum II	3
HIST 1060	World History From 1500	3
Hours		15

**Seventh Term**

CI 4470	Literacy Assessment and Remediation	3
CI 4240	Advanced Teaching Methods in Middle Grades Social Studies	3
CI 4230	Advanced Teaching Methods in Middle Grades Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
Hours		15

**Eighth Term**

CI 4930	Internship/Student Teaching	9
CI 4790	Seminar: Managing the Social Studies Classroom	3
CI 4760	Seminar: Managing the Science Classroom	3
Hours		15
Total Hours		131

## Middle Childhood Education Mathematics/Social Studies

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
ECON 1010	Introduction To Economic Issues	3
PSC 1200	American National Government	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
Hours		17

**Second Term**

SPED 2040	Perspectives In The Field Of Exceptionalities	3
University Core		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
PSC 1710	Current International Problems	3
GEPL 3050	Geography Of U.s. And Canada	3
Hours		19

**Third Term**

EDU 1700	Introduction to Education	3
University Core		3
MATH 2600	Introduction To Statistics	3
HIST 2010	America To 1865	3
HIST 2020	America From 1865	3
CI 3400	Foundations of Literacy	3
Hours		18

**Fourth Term**

CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
MATH 2620	Discrete Probability	3
MATH 1890	Elementary Linear Algebra	3
HIST 1050	World History To 1500	3
Lab		1
Hours		16

**Fifth Term**

CI 4400	Reading In Middle Grades	3
CI 4550	Teaching Problem Solving In Mathematics	3
CI 4720	Best Practices for Teaching Social Studies	3
CI 4190	Practicum I	3
University Core		3
MATH 3440	Fundamentals Of Modern Geometry I	3
Hours		18

**Sixth Term**

RESM 4200	Classroom Assessment	3
CI 4060	Teaching Methods in Middle Grades Mathematics	3
CI 4080	Teaching Methods in Middle Grades Social Studies	3
CI 4290	Practicum II	3
HIST 1060	World History From 1500	3
Hours		15

**Seventh Term**

CI 4470	Literacy Assessment and Remediation	3
CI 4220	Advanced Teaching Methods in Middle Grades Mathematics	3
CI 4240	Advanced Teaching Methods in Middle Grades Social Studies	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
Hours		15

**Eighth Term**

CI 4930	Internship/Student Teaching	9
CI 4740	Seminar: Managing the Mathematics Classroom	3
CI 4790	Seminar: Managing the Social Studies Classroom	3
Hours		15
Total Hours		133

## Middle Childhood Education Mathematics/Reading and Language Arts

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
University Core		4
University Core		3
Hours		15

**Second Term**

ETPT 2020	Technology And Multimedia In Educational Environments	3
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ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
University Core		3
Lab		1
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
Hours		17

**Third Term**

EDU 1700	Introduction to Education	3
University Core		3
ENGL 3150	Linguistic Principles	3
ENGL 3600	American Literary Traditions	3
MATH 2600	Introduction To Statistics	3
MATH 3440	Fundamentals Of Modern Geometry I	3
Hours		18

**Fourth Term**

CI 3400	Foundations of Literacy	3
CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
ENGL 2730	Reading Poetry	3
ENGL 2720	Reading Drama	3
MATH 2620	Discrete Probability	3
Hours		18

**Fifth Term**

CI 4400	Reading In Middle Grades	3
CI 4550	Teaching Problem Solving In Mathematics	3
CI 4320	Literature For Young Adults	3
CI 4190	Practicum I	3
ENGL 3790	Foundations Of Literary Study	3
MATH 1890	Elementary Linear Algebra	3
Hours		18

**Sixth Term**

RESM 4200	Classroom Assessment	3
CI 4060	Teaching Methods in Middle Grades Mathematics	3
CI 4050	Teaching Methods in Middle Grades English Language Arts	3
CI 4290	Practicum II	3
ENGL 4090	Current Writing Theory	3
CI 4300	Literature For Children	3
Hours		18

**Seventh Term**

CI 4470	Literacy Assessment and Remediation	3
CI 4220	Advanced Teaching Methods in Middle Grades Mathematics	3
CI 4210	Advanced Teaching Methods in Middle Grades English Language Arts	3

CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
University Core		3
Hours		18
<b>Eighth Term</b>		
CI 4930	Internship/Student Teaching	9
CI 4740	Seminar: Managing the Mathematics Classroom	3
CI 4730	Seminar Managing the English Language Arts Classroom	3
Hours		15
Total Hours		137

## Middle Childhood Education Mathematics/Science

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
University Core		3
MATH 1830	Calculus I For Mathematicians, Scientists And Educators	4
CHEM 1120	Chemistry For Health Sciences	4
Hours		15
<b>Second Term</b>		
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
EDU 1700	Introduction to Education	3
MATH 1840	Calculus II For Mathematicians, Scientists And Educators	4
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1
Hours		18
<b>Third Term</b>		
CI 3400	Foundations of Literacy	3
University Core		3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
MATH 2600	Introduction To Statistics	3
MATH 3440	Fundamentals Of Modern Geometry I	3
ASTR 1010	Survey Of Astronomy	3
Hours		18
<b>Fourth Term</b>		
CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
University Core		3
MATH 2620	Discrete Probability	3

MATH 1890	Elementary Linear Algebra	3
EEES 1010	Physical Geology	3
EEES 1020	Introductory Geology Laboratory	1
Hours		19
<b>Fifth Term</b>		
CI 4400	Reading In Middle Grades	3
CI 4550	Teaching Problem Solving In Mathematics	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
GEPL 4540	Weather And Climate	3
University Core		3
Hours		18

<b>Sixth Term</b>		
RESM 4200	Classroom Assessment	3
CI 4060	Teaching Methods in Middle Grades Mathematics	3
CI 4070	Teaching Methods in Middle Grades Science	3
CI 4290	Practicum II	3
NASC 1100	Our Physical World	3
NASC 1110	Physical World Laboratory	1
Hours		16

<b>Seventh Term</b>		
CI 4470	Literacy Assessment and Remediation	3
CI 4220	Advanced Teaching Methods in Middle Grades Mathematics	3
CI 4230	Advanced Teaching Methods in Middle Grades Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
University Core		3
Hours		18

<b>Eighth Term</b>		
CI 4930	Internship/Student Teaching	9
CI 4740	Seminar: Managing the Mathematics Classroom	3
CI 4760	Seminar: Managing the Science Classroom	3
Hours		15
Total Hours		137

## Middle Childhood Education Reading and Language Arts/Science

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1320	College Algebra	3
University Core		3
University Core		3

CHEM 1100	Chemistry And Society	3
	Hours	16
<b>Second Term</b>		
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
	University Core	3
ENGL 3150	Linguistic Principles	3
NASC 1100	Our Physical World	3
	Hours	18
<b>Third Term</b>		
EDU 1700	Introduction to Education	3
ENGL 3600	American Literary Traditions	3
ENGL 2730	Reading Poetry	3
ASTR 1010	Survey Of Astronomy	3
EEES 1010	Physical Geology	3
EEES 1020	Introductory Geology Laboratory	1
	University Core	3
	Hours	19
<b>Fourth Term</b>		
CI 3400	Foundations of Literacy	3
CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
EEES 2150	Biodiversity	4
EEES 2160	Biodiversity Laboratory	1
ENGL 2720	Reading Drama	3
	Hours	17
<b>Fifth Term</b>		
CI 4400	Reading In Middle Grades	3
CI 4320	Literature For Young Adults	3
CI 4680	The Nature of Science	3
CI 4190	Practicum I	3
GEPL 4540	Weather And Climate	3
ENGL 3790	Foundations Of Literary Study	3
	Hours	18
<b>Sixth Term</b>		
RESM 4200	Classroom Assessment	3
CI 4050	Teaching Methods in Middle Grades English Language Arts	3
CI 4070	Teaching Methods in Middle Grades Science	3
CI 4290	Practicum II	3
ENGL 4090	Current Writing Theory	3
CI 4300	Literature For Children	3
	Hours	18

**Seventh Term**

CI 4470	Literacy Assessment and Remediation	3
CI 4210	Advanced Teaching Methods in Middle Grades English Language Arts	3
CI 4230	Advanced Teaching Methods in Middle Grades Science	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
	Hours	15

**Eighth Term**

CI 4930	Internship/Student Teaching	9
CI 4730	Seminar Managing the English Language Arts Classroom	3
CI 4760	Seminar: Managing the Science Classroom	3
	Hours	15
	Total Hours	136

## Middle Childhood Education Reading and Language Arts/Social Studies

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1320	College Algebra	3
	University Core	3
ECON 1010	Introduction To Economic Issues	3
PSC 1200	American National Government	3
	Hours	16
<b>Second Term</b>		
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
PSC 1710	Current International Problems	3
GEPL 3050	Geography Of U.s. And Canada	3
	University Core	3
	Lab	1
	Hours	19
<b>Third Term</b>		
EDU 1700	Introduction to Education	3
ENGL 3150	Linguistic Principles	3
ENGL 3600	American Literary Traditions	3
HIST 2010	America To 1865	3
HIST 2020	America From 1865	3
HIST 1050	World History To 1500	3
	Hours	18
<b>Fourth Term</b>		
CI 3400	Foundations of Literacy	3



CI 3440	Phonics And Word Identification For Middle Childhood Education	3
EDP 3200	Applied Psychology For Teachers	3
ENGL 2730	Reading Poetry	3
ENGL 2720	Reading Drama	3
ENGL 3790	Foundations Of Literary Study	3
Hours		18
<b>Fifth Term</b>		
CI 4400	Reading In Middle Grades	3
CI 4720	Best Practices for Teaching Social Studies	3
CI 4320	Literature For Young Adults	3
CI 4190	Practicum I	3
CI 4300	Literature For Children	3
ENGL 4090	Current Writing Theory	3
Hours		18
<b>Sixth Term</b>		
RESM 4200	Classroom Assessment	3
CI 4080	Teaching Methods in Middle Grades Social Studies	3
CI 4050	Teaching Methods in Middle Grades English Language Arts	3
CI 4290	Practicum II	3
HIST 1060	World History From 1500	3
Hours		15
<b>Seventh Term</b>		
CI 4470	Literacy Assessment and Remediation	3
CI 4240	Advanced Teaching Methods in Middle Grades Social Studies	3
CI 4210	Advanced Teaching Methods in Middle Grades English Language Arts	3
CI 4390	Practicum III	3
TSOC 3000	Schooling And Democratic Society	3
Hours		15
<b>Eighth Term</b>		
CI 4930	Internship/Student Teaching	9
CI 4790	Seminar: Managing the Social Studies Classroom	3
CI 4730	Seminar Managing the English Language Arts Classroom	3
Hours		15
Total Hours		134

## BE in Multi-Age Education (Pre K-12)

The multi-age education programs prepares educators to teach specialty subjects in grade PreK-12. Subjects include visual arts, music, or foreign language (Spanish, French, or German). The multi-age license programs are offered in collaboration with the College of Arts & Letters (p. 10).

## Multiage Visual Arts Education

The art education program prepares students for teaching art at all levels (ages 3-21/grades PreK-12).

Code	Title	Hours
<b>University Core and General Education</b>		
Minimum of 36 hours		27-33
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
AED 2100	Art Education for the Pre-Primary and Primary Child	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
EDP 3200	Applied Psychology For Teachers	3
EDP 3230	Human Development For P-12 Educators	3
<b>Professional Education</b>		
AED 3500	Innovations In Art Education	3
AED 4450	Curriculum In Art Education	3
AED 4200	Computer Graphics In Art Education	3
or AED 4950	Innovations In Art Education	
AED 4900	Seminar In Professional Development	2
AED 4930	Student Teaching In Art (Elementary)	6
AED 4930	Student Teaching In Art (Secondary)	6
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
TSOC 3000	Schooling And Democratic Society	3
AED 4140	Art Education For The Special Child	3
<b>Art Foundations Core</b>		
AR 1000	First Year Orientation	1
ART 1080	Foundations of Drawing I	3
ART 1090	Foundations in Drawing II	3
ART 1050	Foundations of 2D Design	3
ART 1060	Fundamentals of Form	3
<b>Studio Art Core</b>		
ART 2010	Graphic Design I	3
ART 2110	Introduction to Printmaking	3
Select one of the following:		3
ART 2300	Introduction to Painting	
ART 3100	Printmaking	
ART 4100	2D Methods	
ART 2210	Introduction to Ceramics	3
ART 2200	Introduction to Sculpture	3
or ART 2030	Introduction to Photography	
<b>Art History Core</b>		
ARTH 2050	History of Western Art	3
ARTH 2060	History of Western Art II	3
Select one of the following:		3
ARTH 2080	History Of Modern Art	

ARTH 3400	Contemporary Art	
ARTH 2980	Special Topics	
Select one of the following non-Western courses:		3
ARTH 2100	Asian Art	
ARTH 2200	Ethnographic Art	
ARTH 3250	Topics In Asian Art	
ARTH 3300	African Art	
ARTH 3350	Ancient Art Of The Americas	
<b>Area of Concentrations</b>		
Select one of the following concentrations:		12
Art History		
Arts		
Studio		
New Media		
<i>New Media Concentration</i>		
ART 2020	Graphic Design II	
ART 3000	Photography	
Select two of the following electives:		
ART 3010	Interactive Coding	
ART 4010	NM Interactivity	
ART 4020	Time, Motion, Space	
Total Hours		129-135

## Multiage Music Education

The music education degree prepares students for Ohio Teacher Licensure in music in grades PreK-12. Students interested in this program must pass an entrance audition on their major instrument. Please call the department of music office at 419.530.2448 for audition information.

Code	Title	Hours
<b>University Core and General Education</b>		
Select a minimum of 36 hours (including MUS 2220 or MUS 2250)		36
<b>Pre-Professional Education</b>		
AR 1000	First Year Orientation	1
EDP 3200	Applied Psychology For Teachers	3
MED 3000	Foundations Of Music Education	2
SPED 2040	Perspectives In The Field Of Exceptionalities	3
TSOC 3000	Schooling And Democratic Society	3
<b>Professional Education</b>		
Students must meet eligibility requirements before admission to professional education		
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
EDP 3230	Human Development For P-12 Educators	3
MED 3300	Elementary And Secondary School Instrument Methods For Music Majors	3-4
MED 3310	Music For Children	3
MED 3320	Secondary School Vocal Methods For Music Majors	3-4
MED 4900	Student Teaching Seminar	2

MED 4930	Student Teaching	12
<b>Content Area</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1100	Introduction To Music Technology	1
MUS 1570	Piano Class For Music Majors I <sup>1</sup>	1
MUS 1580	Piano Class For Music Majors II <sup>1</sup>	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	1-4
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2610	Music Theory And Ear Training III	4
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	1-4
MUS 3410	Music History And Literature II	3
MUS 3420	Music History And Literature III	3
MUS 3500	Conducting	2
MUS 3800	Applied Music	1-4
MUS 3810	Recital <sup>2</sup>	1
<b>Cluster</b>		
Select one cluster from choral or instrumental:		22-26
<i>Instrumental Elective Cluster</i>		
MUS 1500	String Class	
MUS 1510	Percussion Class	
MUS 1530	Brass Class	
MUS 1550	Woodwinds Class	
MUS 2570	Piano Class For Music Majors III	
MUS 3050	Chamber Music Ensembles	
MUS 3520	Instrumental Conducting	
MUS 3530	Marching Band Techniques	
MUS 3630	Instrumentation	
<b>Ensembles</b>		
Select a minimum of seven hours of the following: <sup>3</sup>		
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	
MUS 3180	Glee Club	
<i>Choral/General Elective Cluster</i>		
MUS 1530	Brass Class	
MUS 2530	Diction For Singers I	
MUS 2540	Diction For Singers II	
MUS 2570	Piano Class For Music Majors III <sup>1</sup>	
MUS 2580	Piano Class For Music Majors IV <sup>1</sup>	
MUS 3050	Chamber Music Ensembles	
MUS 3510	Choral Conducting	
MUS 3550	Vocal Pedagogy and Literature 1	
<b>Ensembles</b>		
Select a minimum of seven hours of the following: <sup>3</sup>		
MUS 3140	Concert Chorale	
MUS 3160	Rocket Choristers	

MUS 3180	Glee Club	
Total Hours		133-148

<sup>1</sup> If the instrument concentration is keyboard, substitute two to three semesters of large instrumental or vocal ensemble and one semester each of MUS 2590 Piano Class for Piano Majors and MUS 3580 Functional Piano Techniques for Piano Class I-III/IV.

<sup>2</sup> All Majors must:

1. Perform a senior recital (MUS 3810) prior to student teaching
2. Attend 16 non-departmental concerts/recitals and 64 departmental concerts/recitals and complete one credit of registration in a chamber ensemble MUS 3050
3. Perform during MUS 1000, six times (minimum three as soloist) prior to senior recital hearing.

<sup>3</sup> The minimum requirement is an accumulation of seven hours of ensemble credits, but only four hours count toward the hours required credit hours for the degree.  
Students also must complete four credits of large vocal ensemble (Choral/general elective cluster) or four credits of large instrumental ensemble (instrumental elective cluster).

Students must enroll in MUS 1000 Lab Ensemble when taking the following courses:

Code	Title	Hours
MED 3300	Elementary And Secondary School Instrument Methods For Music Majors	3-4
MED 3310	Music For Children	3
MED 3320	Secondary School Vocal Methods For Music Majors	3-4
MUS 1500	String Class	2
MUS 1530	Brass Class	2
MUS 1550	Woodwinds Class	2
MUS 1560	Instrumental Class	3
MUS 3500	Conducting	2
MUS 3510	Choral Conducting	2
MUS 3520	Instrumental Conducting	2

Lab Ensemble must be taken for a total of five semesters.

## Multiage Foreign Languages Education

Multiage programs prepare students for teaching French, German or Spanish at all levels, ages 3-21/grades Pre-K-12.

University Core and General Education – 36-42 hours

### French Education

Code	Title	Hours
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
EDP 3200	Applied Psychology For Teachers	3
EDP 3230	Human Development For P-12 Educators	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3

TSOC 3000	Schooling And Democratic Society	3
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### Professional Education

Students must meet eligibility requirements before admission to professional education

RESM 4200	Classroom Assessment	3
CI 4140 & CI 4190	Teaching Methods For Foreign Languages and Practicum I (courses are taken concurrently)	6
FREN 4160	Teaching Colloquium	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4430 & CI 4930	Issues In Second Language Teaching and Internship/Student Teaching (courses are taken concurrently)	15

### Content Area

FREN 3010	Conversation And Composition I <sup>1</sup>	3
FREN 3020	Conversation And Composition II	3
FREN 3210	Survey Of French Literature I	3
FREN 3220	Survey Of French Literature II	3
FREN 3410	Survey Of French Civilization I	3
FREN 3420	Survey Of French And Francophone Civilization II	3
FREN 4010	French Syntax And Stylistics I	3
FREN 4020	French Syntax And Stylistics II	4

### Electives

Select 9 hours of the following: 9

FREN 3170	Business French
FREN 3400	Cross-Cultural Understanding
FREN 4050	Advanced Conversation
FREN 4070	French Translation
FREN 4190	Study Abroad
FREN 4200	Contemporary French And Francophone Civilization
FREN 4810	French & Francophone Literature Of The 20th Century I
FREN 4820	French & Francophone Literature Of The 20th Century II
FREN 4850	Le Cinema Francais
FREN 4860	La Production Feminine
FREN 4910	Honors Research In French
FREN 4980	Special Topics In French Studies

Others at discretion of the French faculty of the department of foreign languages

### Additional Electives

Select elective hours to meet 128-hour graduation requirement 10-12

### Additional Requirements for Dual Degree Option - B.A. in French

Select 20 hours of the following: 20

Natural science course(s)
Social science course(s)
Language and literature electives

Total Hours 112-114

<sup>1</sup> First course taken in this sequence is dependent on placement test scores, AP credit or CLEP.

In consultation with your College of Arts and Letters faculty adviser and your degree audit from the college. You must obtain the signature of the faculty advisor for these courses.

WAC – 6 hours

Select two courses. Courses vary from year to year and are listed on the registrar's office web site. Courses also can be selected in consultation with the language and literature adviser. Two courses must be from your content area.

## German Education

Code	Title	Hours
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
EDP 3200	Applied Psychology For Teachers	3
EDP 3230	Human Development For P-12 Educators	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
TSOC 3000	Schooling And Democratic Society	3

### Professional Education

Students must meet eligibility requirements before admission to professional education

RESM 4200	Classroom Assessment	3
CI 4140 & CI 4190	Teaching Methods For Foreign Languages and Practicum I (courses are taken concurrently)	6
GERM 4160	Teaching Colloquium	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4430 & CI 4930	Issues In Second Language Teaching and Internship/Student Teaching (courses are taken concurrently)	15

### Content Area

GERM 3010	Conversation And Composition I <sup>1</sup>	3
GERM 3020	Conversation And Composition II	3
GERM 3200	Survey Of German Literature	3
GERM 3410	Survey Of German Civilization I	3
GERM 3420	Survey Of German Civilization II	3
GERM 4010	German Syntax And Stylistics I	3
GERM 4020	Advanced Conversation And Composition II - WAC	4

### Electives

Select 12 hours of the following:		12
GERM 3170	Business German	
GERM 4190	Study Abroad	
GERM 4200	German Culture And Civilization	
GERM 4620	German Classicism	
GERM 4710	German Literature Of The 19th Century	
GERM 4720	German Romanticism	
GERM 4810	German Literature Of The 20th Century	

GERM 4850	Genre Studies
GERM 4870	German Literature In Translation
GERM 4900	Studies In The Works Of An Author Or Authors
GERM 4910	Honors Research In German
GERM 4980	Special Topics In German Studies
GERM 4990	Independent Study In German
Others at the discretion of the German faculty of the department of foreign languages	

### Additional Electives

Select elective hours to meet 128-hour graduation requirement

### Additional Requirements for Dual Degree Option - B.A. in German

Select 20 hours of the following:	20
Natural science course(s)	
Social science course(s)	
Language and literature electives	
Total Hours	102

<sup>1</sup> First course taken in this sequence is dependent on placement test scores, AP credit or CLEP.

In consultation with your College of Arts and Letters faculty adviser and your degree audit from the college. You must obtain the signature of the faculty advisor for these courses.

WAC – 6 hours

Select two courses. Courses vary from year to year and are listed on the registrar's office web site. Courses also can be selected in consultation with the language and literature adviser. Two courses must be from your content area.

## Spanish Education

Code	Title	Hours
<b>Pre-Professional Education</b>		
EDU 1700	Introduction to Education	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
EDP 3200	Applied Psychology For Teachers	3
EDP 3230	Human Development For P-12 Educators	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
TSOC 3000	Schooling And Democratic Society	3

### Professional Education

Students must meet eligibility requirements before admission to professional education

RESM 4200	Classroom Assessment	3
CI 4140 & CI 4190	Teaching Methods For Foreign Languages and Practicum I (courses are taken concurrently)	6
GERM 4160	Teaching Colloquium	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
CI 4430 & CI 4930	Issues In Second Language Teaching and Internship/Student Teaching (courses are taken concurrently)	15

Content Area		
SPAN 3000	Spanish Grammar	3
SPAN 3010	Conversation And Composition I <sup>1</sup>	3
SPAN 3020	Conversation And Composition II	3
<i>Literature I</i>		
SPAN 3210	Survey Of Spanish Literature I	3
or SPAN 3270	Survey Of Latin American Literature I	
<i>Literature II</i>		
SPAN 3220	Survey Of Spanish Literature II	3
or SPAN 3280	Survey Of Latin American Literature II	
<i>Civilization</i>		
SPAN 3410	Spanish Culture And Civilization	3
or SPAN 3420	Latin American Civilization	
<b>Electives</b>		
Select 12 hours of the following:		12
SPAN 3170	Business Spanish	
SPAN 4000	Advanced Spanish Grammar	
SPAN 4060	Translation & Interpretation In Spanish	
SPAN 4070	History Of The Spanish Language	
SPAN 4110	Introduction To Spanish Linguistics	
SPAN 4170	Latin American Novel II	
SPAN 4190	Study Abroad	
SPAN 4250	Latin American Short Story	
SPAN 4260	Latin American Poetry I	
SPAN 4270	Latin American Poetry II	
SPAN 4830	Hispanic Cinema	
SPAN 4980	Special Topics	
SPAN 4910	Honors Research In Spanish	
<b>Additional Electives</b>		
Select elective hours to meet 128-hour graduation requirement		
<b>Additional Requirements for Dual Degree Option - B.A. in Spanish</b>		
Select 20 hours of the following:		20
Natural science course(s)		
Social science course(s)		
Language and literature electives		
Total Hours		98

In consultation with your College of Arts and Letters faculty advisor and your degree audit from the college. You must obtain the signature of the faculty adviser for these courses.

WAC – 6 hours

Select two courses. Courses vary from year to year and are listed on the registrar's office web site. Courses also can be selected in consultation with the language and literature adviser. Two courses must be from your content area.

## Multiage Visual Arts Education

Below is a sample plan of study. Consult your degree audit for your program requirements

Course	Title	Hours
<b>First Term</b>		
AR 1000	First Year Orientation	1
ART 1080	Foundations of Drawing I	3
MATH 1180	Reasoning With Mathematics	3
ENGL 1110	College Composition I	3
ART 1050	Foundations of 2D Design	3
University Core		3
Hours		16
<b>Second Term</b>		
ART 1090	Foundations in Drawing II	3
ART 1060	Fundamentals of Form	3
ARTH 2050	History of Western Art	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
Hours		15
<b>Third Term</b>		
ART 2210	Introduction to Ceramics	3
ART 2300	Introduction to Painting	3
ART 2010	Graphic Design I	3
ARTH 2060	History of Western Art II	3
ARTH 2080	History Of Modern Art	3
EDU 1700	Introduction to Education	3
Hours		18
<b>Fourth Term</b>		
ART 2200	Introduction to Sculpture	3
ART 2110	Introduction to Printmaking	3
ART 2030	Introduction to Photography	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Art Concentration Elective		3
University Core		3
Hours		18
<b>Fifth Term</b>		
AED 4450	Curriculum In Art Education	3
AED 2100	Art Education for the Pre-Primary and Primary Child	3
EDP 3200	Applied Psychology For Teachers	3
ARTH Nonwestern Course		3
ART Concentration Elective		3
University Core		3
Hours		18
<b>Sixth Term</b>		
AED 3500	Innovations In Art Education	3
AED 4200	Computer Graphics In Art Education	3
EDP 3230	Human Development For P-12 Educators	3
TSOC 3000	Schooling And Democratic Society	3



CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
University Core		3
Hours		18
<b>Seventh Term</b>		
AED 4140	Art Education For The Special Child	3
ART Concentration Elective		3
ART Concentration Elective		3
University Core		3
University Core		3
Lab		1
Hours		16
<b>Eighth Term</b>		
AED 4930	Student Teaching In Art ((Elementary))	6
AED 4930	Student Teaching In Art ((Secondary))	6
AED 4900	Seminar In Professional Development	2
Hours		14
Total Hours		133

## Multiage Music Education

Below is a sample plan of study. Consult your degree audit for your program requirements.

### Choral/General Elective Cluster

Course	Title	Hours
<b>First Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	2
MUS 2530	Diction For Singers I	1
MUS (see list)		1
AR 1000	First Year Orientation	1
MATH 1180	Reasoning With Mathematics (or higher) (Core Curriculum Class)	3
MUS 2220 or MUS 2250	History Of Jazz (Core Curriculum Class) or Musical Diversity In The United States	3
Core Curriculum Class		3
Hours		19
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	2
MUS 2540	Diction For Singers II	1
MUS 1100	Introduction To Music Technology	1
MUS (see list)		1

Core Curriculum Class		3
Core Curriculum Class		3
Core Curriculum Class		3
Hours		19
<b>Third Term</b>		
MED 3000	Foundations Of Music Education	2
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1560	Instrumental Class	3
MUS 2570	Piano Class For Music Majors III	1
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	2
MUS (see list)		1
Core Curriculum Class		3
MUS 2530	Diction For Singers I (if not taken freshman year)	1
MUS 1100	Introduction To Music Technology (if not taken freshman year)	1
Hours		18

<b>Fourth Term</b>		
EDP 3200	Applied Psychology For Teachers	3
MUS 1000	Performance Laboratory	0
MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 2580	Piano Class For Music Majors IV	1
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	2
MUS (see list)		1
Core Curriculum Class		3
MUS 2540	Diction For Singers II	1
Hours		18

<b>Fifth Term</b>		
CI 4980	Special Topics In Curriculum And Instruction	3
EDP 3230	Human Development For P-12 Educators	3
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3410	Music History And Literature II	3
MUS 3500	Conducting	2
MUS 3800	Applied Music	2
MUS (see list)		1
Core Curriculum Class		3
Hours		17

<b>Sixth Term</b>		
MED 3300	Elementary And Secondary School Instrument Methods For Music Majors	3
MED 3310	Music For Children	3
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3420	Music History And Literature III	3

MUS 3510	Choral Conducting	2
MUS 3550	Vocal Pedagogy and Literature 1	2
MUS 3800	Applied Music	2
MUS (see list)		1
Hours		16
<b>Seventh Term</b>		
MED 3320	Secondary School Vocal Methods For Music Majors	3
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 3810	Recital	1
MUS 4800	Applied Music	2
MUS (see list)		1
TSOC 3000	Schooling And Democratic Society	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Core Curriculum Class		3
Lab		1
Hours		17
<b>Eighth Term</b>		
MED 4930	Student Teaching ((Elementary))	6
MED 4930	Student Teaching	6
MED 4900	Student Teaching Seminar	2
Hours		14
Total Hours		138

### Instrumental General Elective Cluster

Course	Title	Hours
<b>First Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1570	Piano Class For Music Majors I	1
MUS 1610	Music Theory And Ear Training I	4
MUS 1800	Applied Music	2
MUS (see list)		1
AR 1000	First Year Orientation	1
MATH 1180	Reasoning With Mathematics (or higher) (Core Curriculum Class)	3
MUS 2220 or MUS 2250	History Of Jazz (Core Curriculum Class) or Musical Diversity In The United States	3
Core Curriculum Class		3
Hours		18
<b>Second Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
MUS 1580	Piano Class For Music Majors II	1
MUS 1620	Music Theory And Ear Training II	4
MUS 1800	Applied Music	2
MUS (see list)		1

MUS 2410	Music History And Literature I: World Music And Jazz	3
MUS 1100	Introduction To Music Technology	1
Core Curriculum Class		3
Core Curriculum Class		3
Hours		18
<b>Third Term</b>		
MED 3000	Foundations Of Music Education	2
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
Select one of the following:		2
MUS 1500	String Class	
MUS 1530	Brass Class	
MUS 1550	Woodwinds Class	
MUS 2570	Piano Class For Music Majors III	1
MUS 2610	Music Theory And Ear Training III	4
MUS 2800	Applied Music	2
MUS (see list)		1
MUS 3410	Music History And Literature II	3
Core Curriculum Class		3
Hours		18
<b>Fourth Term</b>		
EDP 3200	Applied Psychology For Teachers	3
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
Select one of the following:		2
MUS 1500	String Class	
MUS 1530	Brass Class	
MUS 1550	Woodwinds Class	
MUS 2620	Music Theory And Ear Training IV	4
MUS 2800	Applied Music	2
MUS (see list)		1
MUS 3420	Music History And Literature III	3
Core Curriculum Class		3
Hours		18
<b>Fifth Term</b>		
MUS 1000	Performance Laboratory	0
MUS 1010	Concert Attendance	0
Select one of the following:		2
MUS 1500	String Class	
MUS 1530	Brass Class	
MUS 1550	Woodwinds Class	
MUS 3500	Conducting	2
MUS 3800	Applied Music	2
MUS (see list)		1
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Core Curriculum Class		3
Core Curriculum Class		3

Core Curriculum Class	3
Hours	19
<b>Sixth Term</b>	
MED 3300 Elementary And Secondary School Instrument Methods For Music Majors	3
MED 3310 Music For Children	3
MUS 1000 Performance Laboratory	0
MUS 1010 Concert Attendance	0
Select one of the following:	2
MUS 1500 String Class	
MUS 1530 Brass Class	
MUS 1550 Woodwinds Class	
MUS 3510 Choral Conducting	2
MUS 3630 Instrumentation	3
MUS 3800 Applied Music	2
MUS (see list)	1
Hours	16
<b>Seventh Term</b>	
CI 4980 Special Topics In Curriculum And Instruction	3
EDP 3230 Human Development For P-12 Educators	3
MED 3320 Secondary School Vocal Methods For Music Majors	3
MUS 1000 Performance Laboratory	0
MUS 1010 Concert Attendance	0
MUS 3580 Functional Piano Techniques	2
MUS 3810 Recital	1
MUS 4800 Applied Music	2
MUS (see list)	1
TSOC 3000 Schooling And Democratic Society	3
Hours	18
<b>Eighth Term</b>	
MED 4930 Student Teaching	6
MED 4930 Student Teaching	6
MED 4900 Student Teaching Seminar	2
Hours	14
Total Hours	139

## Multiage Foreign Languages Education French Education

Below is a sample plan of study. Consult your degree audit for your program requirements

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
FREN 2140	Intermediate French I	3
University Core		3

University Core	3
Hours	16
<b>Second Term</b>	
ENGL 1130 College Composition II: Academic Disciplines And Discourse	3
FREN 2150 Intermediate French II	3
ETPT 2020 Technology And Multimedia In Educational Environments	3
University Core	3
University Core	3
Lab	1
Hours	16

<b>Third Term</b>	
FREN 3010 Conversation And Composition I	3
FREN 3210 Survey Of French Literature I	3
EDU 1700 Introduction to Education	3
EDP 3200 Applied Psychology For Teachers	3
TSOC 3000 Schooling And Democratic Society	3
GERM elective	3
Hours	18

<b>Fourth Term</b>	
FREN 3020 Conversation And Composition II	3
FREN 3220 Survey Of French Literature II	3
EDP 3230 Human Development For P-12 Educators	3
University Core	3
FREN elective	3
Hours	15

<b>Fifth Term</b>	
FREN 3410 Survey Of French Civilization I	3
FREN 4010 French Syntax And Stylistics I	3
SPED 2040 Perspectives In The Field Of Exceptionalities	3
FREN 4160 Teaching Colloquium	3
General elective	3
Hours	15

<b>Sixth Term</b>	
FREN 3420 Survey Of French And Francophone Civilization II	3
FREN 4020 French Syntax And Stylistics II	4
University Core	3
University Core	3
FREN elective	3
Hours	16

<b>Seventh Term</b>	
CI 4140 Teaching Methods For Foreign Languages	3
CI 4190 Practicum I	3
RESM 4200 Classroom Assessment	3
CI 4490 Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3

FREN elective	3
Hours	15
<b>Eighth Term</b>	
CI 4430	Issues In Second Language Teaching 3
CI 4900	Student Teaching Seminar 2
CI 4930	Internship/Student Teaching 12
Hours	17
Total Hours	128

## German Education

Below is a sample curriculum for the German Education program. Sample curriculum is subject to change. Please consult the department for up-to-date information.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
GERM 2140	Intermediate German I	3
University Core		3
University Core		3
Hours		16
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
GERM 2150	Intermediate German II	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
University Core		3
University Core		3
Lab		1
Hours		16
<b>Third Term</b>		
GERM 3010	Conversation And Composition I	3
GERM 3410	Survey Of German Civilization I	3
EDU 1700	Introduction to Education	3
EDP 3200	Applied Psychology For Teachers	3
TSOC 3000	Schooling And Democratic Society	3
GERM elective		3
Hours		18
<b>Fourth Term</b>		
GERM 3020	Conversation And Composition II	3
GERM 3420	Survey Of German Civilization II	3
EDP 3230	Human Development For P-12 Educators	3
University Core		3
GERM elective		3
Hours		15
<b>Fifth Term</b>		
GERM 4010	German Syntax And Stylistics I	3

GERM 4160	Teaching Colloquium	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
GERM elective		3
General elective		3
Hours		15
<b>Sixth Term</b>		
GERM 4020	Advanced Conversation And Composition II - WAC	4
GERM 3200	Survey Of German Literature	3
University Core		3
University Core		3
GERM elective		3
Hours		16

<b>Seventh Term</b>		
CI 4140	Teaching Methods For Foreign Languages	3
CI 4190	Practicum I	3
RESM 4200	Classroom Assessment	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
GERM elective		3
Hours		15

<b>Eighth Term</b>		
CI 4430	Issues In Second Language Teaching	3
CI 4900	Student Teaching Seminar	2
CI 4930	Internship/Student Teaching	12
Hours		17
Total Hours		128

## Spanish Education

Below is a sample curriculum for the Spanish Education program. Sample curriculum is subject to change. Please consult the department for up-to-date information.

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1180	Reasoning With Mathematics	3
SPAN 2140	Intermediate Spanish I	3
University Core		3
University Core		3
Hours		16
<b>Second Term</b>		
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
SPAN 2150	Intermediate Spanish II	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
University Core		3

University Core		3
Lab		1
Hours		16
<b>Third Term</b>		
SPAN 3000	Spanish Grammar	3
EDU 1700	Introduction to Education	3
EDP 3200	Applied Psychology For Teachers	3
TSOC 3000	Schooling And Democratic Society	3
SPAN elective		3
Hours		15
<b>Fourth Term</b>		
SPAN 3210	Survey Of Spanish Literature I	3
SPAN 3010	Conversation And Composition I	3
EDP 3230	Human Development For P-12 Educators	3
University Core		3
SPAN elective		3
Hours		15
<b>Fifth Term</b>		
SPAN 3220	Survey Of Spanish Literature II	3
SPAN 3020	Conversation And Composition II	3
SPAN 4120	Teaching Colloquium	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
SPAN elective		3
General elective		3
Hours		18
<b>Sixth Term</b>		
SPAN 4010	Syntax And Stylistics	4
SPAN 3410	Spanish Culture And Civilization	3
University Core		3
University Core		3
SPAN elective		3
Hours		16
<b>Seventh Term</b>		
CI 4140	Teaching Methods For Foreign Languages	3
CI 4190	Practicum I	3
RESM 4200	Classroom Assessment	3
CI 4490	Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach	3
SPAN elective		3
Hours		15
<b>Eighth Term</b>		
CI 4430	Issues In Second Language Teaching	3
CI 4900	Student Teaching Seminar	2
CI 4930	Internship/Student Teaching	12
Hours		17
Total Hours		128

## BE in Special Education Intervention Specialist

Programs in special education prepare pre-service candidates for initial teacher licensure as intervention specialists. These specialists work with students (ages 5-21/grades K-12) with mild/moderate or moderate/intensive educational needs. These include children and youth with specific learning disabilities, mental retardation, autism, physical and health impairments, attention deficit and hyperactivity disorders, emotional disturbance, and communication and language difficulties. Preparation for early intervention special education and adult services occurs at the graduate level. Majors in this program are prepared to teach in a variety of settings where services are provided to students requiring specialized interventions to experience success in the education environment.

Below is a sample plan of study. Consult your degree audit for your program requirements.

## Mild-Moderate Intervention Specialist

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1210	Mathematics For Education Majors I	3
Social Studies Cognate		3
Social Studies Cognate		3
Natural Science Cognate		3
Natural Science Laboratory		1
Hours		17
<b>Second Term</b>		
EDU 1700	Introduction to Education	3
Select one of the following:		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
ENGL 2960	Professional and Business Writing	
MATH 1220	Mathematics For Education Majors II	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Social Studies Cognate		3
Hours		18
<b>Third Term</b>		
SPED 3130	Linguistic Analysis	3
Foreign Lang		3-4
Language Arts Cognate		3
Language Arts Cognate		3
Natural Science Cognate		3
Social Science Cognate		3
Hours		18-19



**Fourth Term**

CI 3400	Foundations of Literacy	3
EDP 3200	Applied Psychology For Teachers	3
TSOC 3000	Schooling And Democratic Society	3
Foreign Lang		3-4
Language Arts Cognate		3
SPECIAL CONSIDERATION: Students must be accepted into Professional Education; Acceptance requires the completion of 48 hours with min 2.7 GPA, and mastery of reading, writing, and math skills as documented via appropriate national test scores.		

Hours	15-16
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**Fifth Term**

EDP 3290	Life Span Development	3
SPED 4100	Field Practicum With Students With Mild/Moderate Educational Needs	3
SPED 4110	Curriculum And Methodology For Students With Moderate Educational Needs	3
SPED 4240	Teaching Phonics, Contextual Reading And Writing To Learners With Special Needs	3
SPED 4260	Family And Professional Partnership In Special Education	3

Hours	15
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**Sixth Term**

SPED 4340	Effective Management Of Students With Special Needs In Educational Settings	3
SPED 4370	Curriculum And Methods For Students With Mild Educational Needs	3
SPED 4100	Field Practicum With Students With Mild/Moderate Educational Needs	3
CI 4470	Literacy Assessment and Remediation	3
AED 4140	Art Education For The Special Child	3

Hours	15
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**Seventh Term**

SPED 4250	Teaching Career And Vocational Skills To Youths With Disabilities	3
SPED 4980	Special Topics In Special Education	1
SPED 4450	Methods of Teaching Students With Emotional Disturbance	3
SPED 4060	Specialized Intervention In Infancy And Early Childhood	3
RESM 4200	Classroom Assessment	3
CI 4400	Reading In Middle Grades	3

Hours	16
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**Eighth Term**

SPED 4930	Student Teaching In Special Education	12
SPED 4600	Professional Reflective Seminar	3

Hours	15
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Total Hours	129-131
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## Moderate-Intensive Intervention Specialist

Course	Title	Hours
<b>First Term</b>		
EDU 1000	Orientation To Education	1
ENGL 1110	College Composition I	3
MATH 1210	Mathematics For Education Majors I	3
Social Studies Cognate		3
Social Studies Cognate		3
Natural Science cognate		3
Natural Science Lab		1

Hours	17
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**Second Term**

EDU 1700	Introduction to Education	3
Select one of the following:		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
ENGL 2960	Professional and Business Writing	
MATH 1220	Mathematics For Education Majors II	3
ETPT 2020	Technology And Multimedia In Educational Environments	3
SPED 2040	Perspectives In The Field Of Exceptionalities	3
Social Studies Cognate		3

Hours	18
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**Third Term**

SPED 3130	Linguistic Analysis	3
SPED 3670	American Sign Language I	3
Language Arts Cognate		3
Language Arts Cognate		3
Natural Science Cognate		3
Social Science Cognate		3

Hours	18
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**Fourth Term**

CI 3400	Foundations of Literacy	3
EDP 3200	Applied Psychology For Teachers	3
TSOC 3000	Schooling And Democratic Society	3
Foreign Language		3-4
Language Arts Cognate		3

SPECIAL CONSIDERATION: Students must be accepted into Professional Education; Acceptance requires the completion of 48 hours with min. 2.7 GPA, and mastery of reading, writing, and math skills as documented via appropriate national test scores.

Hours	15-16
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**Fifth Term**

EDP 3290	Life Span Development	3
SPED 4100	Field Practicum With Students With Mild/Moderate Educational Needs	3

SPED 4110	Curriculum And Methodology For Students With Moderate Educational Needs	3
SPED 4240	Teaching Phonics, Contextual Reading And Writing To Learners With Special Needs	3
SPED 4260	Family And Professional Partnership In Special Education	3
Hours		15
<b>Sixth Term</b>		
AED 4140	Art Education For The Special Child	3
SPED 4100	Field Practicum With Students With Mild/Moderate Educational Needs	3
SPED 4120	Curriculum And Methodology For Students With Intensive Educational Needs	3
SPED 4340	Effective Management Of Students With Special Needs In Educational Settings	3
CI 4470	Literacy Assessment and Remediation	3
Hours		15
<b>Seventh Term</b>		
SPED 4210	AAC for Young Children with Disabilities	3
Hours		3
<b>Eighth Term</b>		
SPED 4250	Teaching Career And Vocational Skills To Youths With Disabilities	3
SPED 4060	Specialized Intervention In Infancy And Early Childhood	3
SPED 4450	Methods of Teaching Students With Emotional Disturbance	3
SPED 4980	Special Topics In Special Education	1-5
CI 4400	Reading In Middle Grades	3
RESM 4200	Classroom Assessment	3
Hours		16-20
<b>Ninth Term</b>		
SPED 4600	Professional Reflective Seminar	3
SPED 4930	Student Teaching In Special Education	12
Hours		15
Total Hours		132-137

## Career and Technical Education Non-Degree (Licensure Only)

Courses in career and technical education may be arranged to complete Ohio's licensure requirements for teaching in a vocational school or for teaching in a technical college, business and industry. Each prospective vocational teacher will combine occupational experience with academic course work to complete the degree requirements. Recent work experience has been the foundation of vocational education that assures recipients state-of-the-art technical instruction.

Any person who has five years of recent work experience in any occupation (or a combination of work experience and college credit) may be eligible for the initial two-year teaching licensure in that occupation. Teaching eligibility will be determined by submitting the completed Qualification Evaluation Form for Vocational Teacher (VE 36) to the

employing school and completing examinations prescribed by the Judith Herb College of Education and vocational program to verify basic skills and technical competence in the teaching field.

Individuals recruited from business and industry with less than a bachelor's degree in vocational education may receive a Five-Year Vocational License after having completed the following requirements.

1. Performance – evidence of satisfactory performance as an instructor and the recommendation of the Judith Herb College of Education.
2. Experience – four years of supervised teaching experience on career-technical Alternative Residence Educator licensure.
3. Professional preparation – completion of a minimum of 24 semester hours of teaching improvement work.
4. Completion of an entry-year program.
5. Completion of the University Based Performance Assessment in the fourth year of the alternative residence educator license

## Faculty

### Department of Curriculum and Instruction

**Jenny Denyer**, 2003, Associate professor, B.A., Xavier University; M.A., Ph.D., Michigan State University

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**Cynthia Richard**, 2010, Lecturer, B.E., M.Ed., University of Toledo

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## Department of Educational Foundations and Leadership

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**Lisa A. Kovach**, 2002, Associate professor, B.A., M.A., Ph.D., The University of Toledo

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**Renée J. Martin**, 1986, Professor, B.S., M.S., University of Wisconsin - LaCrosse; Ph.D., Iowa State University

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## Licensure

### Licensure Tests

All students completing a teacher education licensure program at The University of Toledo are required to complete a series of licensure tests. These tests have been approved by the Ohio Department of Education and CAEP. The required tests are listed below:

**1. Praxis Core Academic Skills for Educators test (Core)**— Students are required to demonstrate mastery of math, reading and writing skills take prior to full admission to professional education. If a student does not enter with acceptable ACT or SAT scores, the Praxis Core tests are needed. It is recommended these tests be taken between completion of 32 and 64 credit hours of course work. Students are responsible for all test fees. Students may be permitted to retake one or more sections of the test and must pay all fees. Before retaking a test, a student should consult with an academic adviser for remedial assistance.

**2. Ohio Assessments for Educators (OAE)** – The state of Ohio has adopted a series of licensure tests that all teacher education students must satisfactorily complete in order to be recommended for licensure.

OAE tests are required in professional education and the subject content area(s). Students are required to register for these exams and to pay all testing fees. Information about tests, testing dates and location, test preparation, and passing scores may be found in the Office of Student Services and in the departmental offices.

3. **Other** – Performance assessments will be used throughout the program to evaluate students' performance and to provide information on the quality of the program.

## Recommendation for Licensure

Licensure to teach in the fields selected is made only upon the recommendation of the dean of the Judith Herb College of Education. The associate dean will recommend licensure to the Ohio State Department of Education only in the teaching fields in which the student meets all requirements as defined in this catalog.

## Non-Licensure Education Programs Degrees Offered

- Early Childhood Education Fast Track (p. 519)

Bachelor's degree completion. The **early childhood education fast track** program prepares students to work with children who are typically developing, at-risk, gifted and mild-moderate special needs infants, toddlers, preschoolers, in a variety of settings (ages 0-5). This program is for students who have already complete an associate's degree in early childhood education. The fast track program is 100% on-line.

## Early Childhood Education Fast Track

(degree completion without licensure)

The early childhood education fast track program prepare students to work with children who are typically developing, at-risk, gifted and mild-moderate special needs infants, toddlers, preschoolers, in a variety of settings (ages 0-5). This program is for students who have already complete an associate's degree in early childhood education. The fast track program is 100% on-line.

Eligibility for the fast track:

- Have an associate's degree in early childhood education
- Have a GPA of 2.7 of higher
- Be employed at an early care and education program for infants, toddlers or preschoolers

16 credits for 4 semesters

*\*You may need to take additional courses if your Associate's degree does not follow the Ohio Transfer Module. Must meet university general education requirements.*

Course	Title	Hours
<b>First Term</b>		
CIEC 3600	Creating Effective Learning Environments	9

CIEC 3610	Field: Creating Effective Learning Environments	7
Hours		16

### Second Term

CIEC 3700	Early Literacy, Language, and Social Studies	9
CIEC 3710	Field Early Literacy, Language and Social Studies	7
Hours		16

### Third Term

CIEC 4600	Supporting ECE Science and Mathematics	9
CIEC 4610	Field Supporting ECE Science and Mathematics	7
Hours		16

### Fourth Term

SPED 4700	Meet Needs Young Children Disabilities	9
SPED 4710	Field Meet Needs Young Children Disabilities	7
Hours		16
Total Hours		64

*\*You may need to take additional courses if your Associate's degree does not follow the Ohio Transfer Module. Must meet university general education requirements.*

## Student Services

Office of Student Services  
Gillham Hall Room 3100  
Phone: 419.530.2495

Suzanne Garza, academic advisor  
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Phone: 419.530.2495  
suzanne.garza@utoledo.edu

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Melissa Spann, academic advisor/enrollment specialist  
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## ACADEMIC ADVISING

The Office of Student Services in the Judith Herb College of Education coordinates academic advising. The office's mission is to provide quality, timely and comprehensive student services that will enhance student success in achieving academic goals. Although the ultimate responsibility for making personal and educational decisions rests with the student, his/her potential for academic success can improve considerably through relationships with the college's advisors, who can

provide assistance in identifying educational options and enhancing student potential.

Students in the Judith Herb College of Education are assigned academic advisors. Essential services provided by advisors include degree requirements, career opportunities, and interpretations of college and University policies and procedures. Advising is through appointment only. Please call 419.530.2495 for an appointment.

## Teacher Education Programs

### Degree and Licensure Requirements

Candidates for the Bachelor of Education degree in any of the professional education programs must complete a minimum of 120-128 credit hours of course work (as determined by the program) with a minimum cumulative GPA of 2.7 on a 4.0 scale. Students also must maintain a cumulative GPA of 2.7 or better in all professional education courses and in all teaching fields. The cumulative average includes all grades for credits earned plus grades of IN and F and those acquired in repeated courses at The University of Toledo and at other institutions that the student attended.

Undergraduate programs in the Judith Herb College of Education meet all University of Toledo requirements for the bachelor's degree. They also meet all state of Ohio, national professional association and the Council for the Accreditation of Educator Programs (CAEP) standards for program accreditation and initial professional licensure. Programs vary in length depending on licensure area.

Students who successfully complete all college degree requirements, student teaching/internship and licensure exams will be recommended for a teaching license in Ohio. For additional information on licensure requirements, students should inquire in the Office of Student Services. The above policy reflects not only college action, but also the requirements of CAEP. **In addition, the State of Ohio requires students to submit fingerprinting cards to the Bureau of Criminal Investigation before a professional license will be issued.**

## Criteria and Procedures or Admission to Professional Education

To be eligible for advanced professional admission to a teacher licensure program, a student must demonstrate:

1. Current enrollment in the Judith Herb College of Education. Students should apply for admission to professional education no later than the fifth semester of full-time enrollment.
2. Completion of a minimum of 48 credit hours of approved course work, including pre-professional education courses.
3. Cumulative GPA (for transfer students, a higher education GPA) of at least 2.7; UT GPA of at least 2.7.
4. Completion of pre-professional education courses with a grade of C or higher and a minimum 2.7 GPA.
5. Core math completed with a passing grade.
6. Core composition II completed with a grade of C or higher.
7. Students must have a cumulative GPA in their major/licensure area(s) of at least 2.7.

8. Mastery of reading, writing and mathematics skills as evidenced by minimum scores (at least 50th percentile) on one of the following standardized assessments: ACT, SAT, or Praxis Core Academic Skills for Educators (Core).

Below are acceptable scores (current scoring scale) on these nationally normed assessments:

1. Passing scores for the ACT are as follows:

Mathematics	21
Reading	21
Writing	06

2. Passing scores for the SAT are as follows:

Mathematics	532
Reading ("Evidence-Based Reading and Writing")	543
Writing ("Essay-Writing Dimension")	05

3. Passing scores for the Praxis Core Academic Skills for Educators tests are as follows:

Mathematics	156
Reading	156
Writing	162

9. Acceptable progress in licensure content courses or published criteria.

10. Prior experience with appropriate populations in schools and agencies based on satisfactory completion of introductory courses/seminars, letters of support and/or portfolios.

11. Effective communication and interpersonal skills based on early experiences, introductory course/seminar(s), ratings from professionals in the field and/or interview ratings.

12. Verification of good moral character as stipulated by the state of Ohio. Students will not be allowed to continue in a teacher education major or participate in a field experience if they have pleaded guilty to, have been found guilty of, or have been convicted of a criminal offense listed in R.C. 3319.31 or R.C. 3319.39. Students should refer to a list of the rules and statutes in the Ohio Revised Code and the Ohio Administrative Code that are applied by the Office of Professional Conduct at the Ohio Department of Education. All rules and statutes listed will result in removal from all teacher education programs.

13. Completion of additional published program admission criteria, if any.

Each licensure program will determine those eligible for advanced professional admission. Students will apply for and be notified of admission to professional education after a minimum of 48 to 72 credit hours of completed program course work. Students not admitted may reapply when identified deficiencies have been corrected. **IMPORTANT:** Each undergraduate licensure program has established a set of guidelines and procedures that students seeking admission to professional education will follow. Students should contact their adviser or department chair for assistance.



## Academic Requirements

Students must maintain the required GPA (as outlined in the admission criteria) and complete satisfactorily the professional education courses and field experiences with a grade of C or above in each in order to maintain full admission status, and qualify for licensure.

## Students with Transfer Credit

Transfer students are required to complete all course work at The University of Toledo with a minimum of a 2.7 GPA overall, in professional education, and in all teaching fields. In addition, they must meet all requirements for admission to the professional education programs as outlined above. The GPA standards are for The University of Toledo course work, as well as for all other college course work attempted.

Transfer students must complete a minimum of 12 credit hours at The University of Toledo and must complete a minimum total of 48 credit hours of course work before applying for admission to professional education. Students are responsible for initiating this application.

## Field/Clinical Experiences

Students who intend to be teachers can expect to spend extensive amounts of time in schools and community agencies as they progress through required professional courses and internship experiences. Introductory courses and exploratory seminars offered to students in the pre-teacher education program may include field experiences. Students will be required to assemble portfolio evidence of experience as they progress through their programs. Students must submit to background checks and fingerprinting. Transportation is the responsibility of the student. Field experiences completed in partner schools, within a 30 mile radius of campus.

## Student Teaching/Internship Requirements

To qualify for an assignment in student teaching/internship, a student must satisfy the following requirements:

1. Full admission to professional education;
2. Completion of a minimum of 100 credit hours;
3. Completion of 90 percent of the course work in the major area(s) of study;
4. Completion of all required prerequisite professional education courses including methods course(s) and satisfactory completion of all field experiences;
5. A minimum GPA of 2.7 in major(s)/licensure area(s), professional education, University of Toledo GPA, and overall as determined by the overall higher education GPA; and
6. Meeting Ohio's good moral character requirement.

## Student Teaching/Internship Assignment

The staff of the Field Experiences Office makes all field placements in keeping with the best learning situation for the individual student. Student teaching/internship is not offered in the summer, because it is not possible for students to complete the equivalent requirement.

Student teaching is completed with our partner schools, within 30 mile radius of campus.

# UNIVERSITY COLLEGE

## UNDERGRADUATE Catalog

University College, Rocket Hall, Room 1300/ Dean's Suite, Rocket Hall,  
Room 1060 (Main Campus)  
419.530.3142  
universitycollege@utoledo.edu

## Mission Statement

University College's mission is to provide the foundation for learner-focused services and transformational educational initiatives.

## Population Served

University College offers programs in two departments; the Department of Interdisciplinary and Special Programs, and the Department of Exploratory Studies. Through our two departments, University College serves students who meet any **one** of the following criteria:

- Age 24 or above;
- Individuals with diverse interests and career goals that are not being met by existing UT degree programs;
- Individuals who are working, have busy lifestyles or are place bound and desire a non-traditional approach to completing a college degree;
- Students who are exploring college majors;
- Students who are working to meet the admission requirements of a specific program/college; and
- Non-degree seeking students.

## Contacts

### Administration

Barbara Kopp Miller, Ph.D, Professor and Dean  
Phone: 419.530.2326  
barbara.koppmiller@utoledo.edu

Shannon Neumann, Senior Director of Academic Affairs  
Phone: 419-530-5678  
shannon.neumann@utoledo.edu

Kim Pollauf, Assistant Dean  
Phone: 419.530.6237  
kimberly.pollauf@utoledo.edu

For additional information on University College staff, go to the University College website at [www.utoledo.edu/UC/](http://www.utoledo.edu/UC/) (<http://www.utoledo.edu/uc/>).

## Degrees Offered

Department of Interdisciplinary and Special Programs (p. 524)

- Associate of Arts in General Studies (A.A.) (p. 527)
- Associate of Technical Studies (A.T.S.) (p. 527)
- Individualized Program: Interdisciplinary Studies (B.A. or B.S.) (p. 528)

- Liberal Studies (B.A.) (p. 529)
- Professional Studies (B.A.) (p. 531)

## Academic Policies

The University of Toledo Policy Website (<http://www.utoledo.edu/policies>) offers access to all relevant policy, operational procedures, governing documents and handbooks for The University of Toledo. The University College Standard Operating Procedures outlined below govern the administration of University College programs and services in compliance with the UT Academic Undergraduate Policies.

### Declaring /Changing Majors

Students in good standing who wish to change from University College to another prospective college should make an appointment with a college adviser in the University College Student Services Office to discuss their transfer and have their academic records reviewed. All college requirements, including core and distributive as well as major and related requirements, must be fulfilled as specified in the catalog for the year in which the student enters the college of their choice. Some colleges have selective admission or deadlines for an intended major. These deadlines are strictly enforced.

### Required academic performance

Student must maintain a 2.0 grade point average to remain in academic good standing within University College.

### Probation

A student with a cumulative GPA less than a 2.0 is automatically placed on academic probation until a 2.0 cumulative GPA is achieved. Students may not withdraw from a course without speaking with their advisor, nor are they permitted to register for a future semester without consulting their adviser.

### Suspension

The Department of Exploratory Studies follows The University of Toledo's Academic Standing Policy (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-01%20Academic%20standing.pdf>) as it pertains to suspension and attempted credit hours.

### Academic Dismissal

Students who have been suspended previously for one year, who have been reinstated and now are facing suspension again will be academically dismissed for three years.

### Reinstatement - University College Students

Students who have been suspended from another academic college at The University of Toledo will not be reviewed until they have served their academic suspension from that college.

### Reinstatement Procedure (<http://www.utoledo.edu/uc/advising/iarp.html>)

All reinstatement documentation must be submitted by the student to the University College email address at [universitycollege@utoledo.edu](mailto:universitycollege@utoledo.edu). Consult your advisor (<http://www.utoledo.edu/uc/advising>) or success coach (<http://www.utoledo.edu/successcoach>) for further details.

Students who have active holds on their account will not be reviewed until those holds are cleared.

## Review of Reinstatement Documentation

All documentation is reviewed by the Academic Review Committee. The decision of approval/denial of appeals will be sent from the University College email account to the student's University email account. If denied, students may petition for reinstatement in a future term.

## Undergraduate Academic Policies

Refer to UT Policy website (<http://www.utoledo.edu/policies>) (<http://www.utoledo.edu/policies/>) for academic policies that apply to all students.

- 3364-71-01 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-01%20Academic%20standing.pdf>) Academic Standing
- 3364-71-02 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-02%20Enrollment%20status.pdf>) Enrollment status: full time, part time, and audit
- 3364-71-03 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-03%20Class%20rank.pdf>) Class Rank
- 3364-71-04 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-04%20Academic%20dishonesty.pdf>) Academic dishonesty
- 3364-71-05 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-05%20Academic%20grievance.pdf>) Academic Grievance
- 3364-71-06 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-06%20Academic%20forgiveness.pdf>) Academic forgiveness
- 3364-71-07 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-07%20Repeating%20a%20course%20and%20recalculation%20of%20GPA.pdf>) Repeating a course and calculating GPA
- 3364-71-08 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-08%20Adding%20or%20dropping%20a%20course.pdf>) Adding and/or dropping a Course
- 3364-71-09 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-09%20Dual%20degrees.pdf>) Dual Degrees
- 3364-71-10 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-10%20Residency%20requirement%20for%20a%20degree.pdf>) Residency requirement for a degree
- 3364-71-11 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-11%20Grades%20and%20grading.pdf>) Grades and grading
- 3364-71-12 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-12%20Priority%20registration.pdf>) Priority registration
- 3364-71-13 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-13%20Graduation%20with%20honors%20distinction.pdf>) Graduation with honors distinction; Dean's list; President's list
- 3364-71-14 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-14%20Missed%20class%20policy.pdf>) Missed class policy
- 3364-71-15 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-15%20Confidentiality%20of%20student%20records.pdf>) Confidentiality of student records (FERPA)
- 3364-71-16 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-16%20Administrative%20adjustment%20for%20extenuating%20circumstance.pdf>) Administrative adjustment for extenuating circumstances
- 3364-71-17 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-17%20Credit%20for%20Prior%20Learning%20Policy.pdf>) Credit for prior learning
- 3364-71-18 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-18.pdf>) Veteran and service members support and assistance
- 3364-71-19 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-19.pdf>) Posthumous degree awards
- 3364-71-20 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-20.pdf>) International baccalaureate diploma
- 3364-71-21 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-21-diploma-replacement.pdf>) Diploma replacement
- 3364-71-22 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-22-Semester-academic-calendar-and-academic-year.pdf>) Semester academic calendar and academic year
- 3364-71-23 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-23-Academic-credit-hour.pdf>) Academic credit hour

## Student Services

Aimee Mendelsohn, Director  
419.530.1294  
[aimee.mendelsohn@utoledo.edu](mailto:aimee.mendelsohn@utoledo.edu)

The Department of Student Services provides services and support in a respectful and transformational environment. Our staff is committed to assisting students in the transition to college life and serving as advocates during their college journey while establishing a foundation for successful learning and career development. Our Academic Advisors provide the following services:

- Career and Major Exploration;
- Assistance with course scheduling;
- Campus and community resources and referrals; and
- Supportive staff to help navigate campus resources and services:
  - Blackboard;
  - Enrollment assistance;
  - Library support; and
  - MyUT portal

## Program 60

Program 60 provides educational experiences at reduced rates to individuals 60 years of age or older who have resided in Ohio for at least the last 12 consecutive months. Enrollment is limited to space availability which is determined on the last day of the regular registration period. Students must meet all course prerequisites to enroll.

The University of Toledo provides tuition scholarships for adults enrolled in Program 60 who wish to audit college courses. Program 60 participants do not receive college credit through enrollment in the program. Students must apply for admission and register to audit courses through University College. All Program 60 participants are responsible for any additional fees such as the cost of textbooks, general fees, lab fees, technology fees, faculty fees, special service fees, online course fees, library, parking, and other fees.

Program 60 students are not eligible to enroll in an independent study course, studio art courses, private music lessons or other similar courses where a course or section number is required to be created.

Program 60 is legislatively mandated in the Ohio Revised Code which can be viewed at <http://codes.ohio.gov/orc/3345.27>.

## Military and Veteran Services

### Ohio Values Veterans Toolkit:

[https://www.ohiohighered.org/valuing\\_ohio\\_veterans/toolkit/policies/ohio-revised-code](https://www.ohiohighered.org/valuing_ohio_veterans/toolkit/policies/ohio-revised-code)

### Military and Veteran Services (<http://www.utoledo.edu/military>)

The Military Service Center assists former and active duty military students and their spouses and dependents with accessing military benefits. The Military Service Center helps students with the application and certification process so that they may receive their educational benefits toward tuition and fees. The Military Service Center also assists students with obtaining military transcripts and posting credit, student support services, and community resource referrals.

## Prior Learning Assessment (PLA) Program

Prior Learning Assessment is based on the concept that college-level learning can be achieved outside of the classroom. Prior learning credit is coordinated through the University's Prior Learning Assessment (PLA) program which adheres to and maintains best practices in assessing prior learning as recommended by the Higher Learning Commission, the Council for Adult and Experiential Learning, and the Ohio Department of Higher Education.

Students work closely with their academic advisor in determining the area(s) in which prior learning assessment is likely to be applicable. Prior learning is assessed through testing or the creation of a portfolio. Standardized testing is available through the UT Testing Services Center (<https://www.utoledo.edu/uc/testing-services>) on the main campus of the University. Guidance with the required paperwork and any necessary

referrals is coordinated through the assistance of the PLA liaison in University College.

## Department of Interdisciplinary and Special Programs

Kim Pollauf  
Assistant Dean  
419-530-6237  
[kimberly.pollauf@utoledo.edu](mailto:kimberly.pollauf@utoledo.edu)

The individualized degree program within University College allows the student to design their own bachelor's degree program. A degree pathway is created based upon individual academic interests and career goals. This degree option may be of interest to adult learners, college transfers or military veterans who may also earn credit for relevant volunteer, academic, work, military and/or life experiences.

## FIELD EXPERIENCES AND INTERNSHIPS

University College degree program students have the opportunity to earn credit hours toward their degree while completing a practical experience outside the classroom. A field experience is a project-based endeavor, while an internship is meant to be an exposure to a new career field. Four credit hours can be earned in any combination of a field experience and/or internship. *This option is only available to Junior and Senior students and requires a UT GPA of 2.5.*

## FRESHMEN ORIENTATION

All new University College students who have not already completed a comparable University of Toledo orientation course are required to complete UC 1000.

## PASS/NO CREDIT GRADES

The option of a Pass/No Credit Grade is not available to a University College Bachelor's Degree Student unless this is the only grading option for the course. However, a grade of Pass obtained while a student was enrolled in another college may be transferred to University College provided it is applicable to the student's new program.

## ADMISSION TO THE DEPARTMENT OF INTERDISCIPLINARY AND SPECIAL PROGRAMS DEGREE PROGRAMS

General Studies (associate's degree) and Liberal Studies (bachelor's degree) accept students without college credit, but require a high school diploma or GED and a minimum high school GPA of 2.0 (if applicable). For students who have earned college credit, a minimum GPA of 2.0 is required for admission.

## TRANSFERRING INTO THE DEPARTMENT OF INTERDISCIPLINARY AND SPECIAL PROGRAMS (ISP) DEGREE PROGRAMS

Students wishing to transfer into ISP degree programs must meet the minimum entrance requirements of The University of Toledo. Students wishing to transfer into any ISP baccalaureate program must have a

minimum cumulative 2.0 higher education GPA (i.e., combined GPA for all coursework taken at post-secondary institutions) and a minimum 2.0 UT GPA, if applicable. The Individualized Program (IDVP) requires completion of 20 semester-hours of college credit and a cumulative 2.0 GPA to transfer. Professional Studies (PRST) requires transfer students to have an earned associate degree or completion of 60 semester-hours of college credit and a cumulative 2.0 GPA.

Students who do not meet this GPA requirement can be admitted to the College's Department of Exploratory Studies and work toward meeting the admission requirements for the degree programs. Courses from an approved institution may be used, as applicable, toward a student's program of study. However, the maximum number of effective transferable credits is 90 semester-hours for all Baccalaureate degrees.

A maximum of 81 hours at the 1000 or 2000 level can be applied to the Individualized Program or Liberal Studies degrees. The General Section of this catalog has information on admission and transfer.

## Admission to earn a Second bachelor's Degree

A graduate of an accredited institution of higher education may apply to University College for a second bachelor's degree. An acceptable program of study in this case entails a minimum of 30 semester hours of additional work. Any student who has earned a bachelor's degree from University College in an Individualized Program may not earn a second degree in another Individualized Program.

## Degrees Offered

- Associate of Arts in General Studies (p. 527)
- Associate of Technical Studies (p. 527)
- Individualized Program: Interdisciplinary Studies (B.A. or B.S.) (p. 528)
- Liberal Studies (p. 529)
- Professional Studies (p. 531)

The University of Toledo offers all students of exceptional academic ability the opportunity to enter a special program of academic rigor and challenge. For further details on the Honors Program, students should contact their advisor(s). Students who have demonstrated exceptional promise may be invited to participate in University College Honors. These students' programs will be developed in close conjunction with the college honors advisor. The minimum requirements for consideration for the University College Honors Program are 20 hours of completed course work and at least a 3.3 cumulative GPA.

The University of Toledo offers all students of exceptional academic ability the opportunity to enter a special program of academic rigor and challenge.

For further details on the Honors Program, students should contact their advisor(s). Students who have demonstrated exceptional promise may be invited to participate in University College Honors. These students' programs will be developed in close conjunction with the college honors advisor. The minimum requirements for consideration for the University College Honors Program are 20 hours of completed course work and at least a 3.3 cumulative GPA.

### AL 2010 Portfolio Development

[1-3 credit hours]

Course is designed for non-traditional students whose prior learning experiences will be formatted into a portfolio for faculty assessment with the potential of earning college credit.

**Term Offered:** Summer, Fall

### AL 2020 Foundations of Lifelong Learning

[1 credit hour]

This interactive course is designed to provide non-traditional students with the tools to establish a foundation for learning and success in college and beyond. Students will be able to select topics relevant to their circumstances and goals

**Term Offered:** Spring, Summer, Fall

### AL 3000 Introduction to Professional Studies

[3 credit hours]

This course will prepare students with advanced computer and information skills necessary for research specific to professional health, business, and community related disciplines.

**Term Offered:** Spring, Fall

### AL 3500 Fundamentals of Interdisciplinary Research

[3 credit hours]

This course is designed as a foundational course for University College for all IDVP and Liberal Studies degree program students. It is the required prerequisite course for students needing to take the Senior Capstone (AL 4950 or AL 4940) courses. It is a review of the research process course designed for undergraduate students majoring in all disciplines. It emphasizes the fundamentals of conducting college-level research and the practice of writing about and properly citing that process.

### AL 4940 Field Experiences and Internship

[4 credit hours]

The purpose of this class is to provide a culminating experience of self-reflection, academic research, and critical thinking as an experiential-learning capstone to your multi-disciplinary University College undergraduate degree program. The overall objective is that you design a professional portfolio that reflects this learning experience. AL 4940 is completed under the guidance of the instructor of record and it must be completed prior to graduation. Permit required.

**Prerequisites:** AL 3500 with a minimum grade of PS

**Term Offered:** Spring, Summer, Fall

### AL 4950 Senior Capstone

[4 credit hours]

This course is designed to provide a capstone experience to students in CALL undergraduate degree programs. Students will have the option of designing a Senior Thesis based upon research related to the area of concentration, or developing an Educational Portfolio that encompasses total learning and its application to a specific problem.

**Prerequisites:** AL 3500 with a minimum grade of PS

**Term Offered:** Spring, Summer, Fall

### ALS 1900 Intro Seminar: Adult Liberal Studies

[2 credit hours]

Introduction to liberal studies. Library use, writing of a documented paper and the development of critical thinking through classroom discussion.



**ALS 3040 Topical Seminar: Social Sciences**

[4 credit hours]

Focus on topics of general interest to liberal arts students with particular reference to tools, concepts and analytical methods of social scientists. Jr. Standing required and completion of Comp. II, or permission of instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 1160 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ALS 3050 Topical Seminar: Humanities**

[4 credit hours]

Focus of general interest in humanities; writing and communication; religious, philosophical and ideological traditions; traditional and performing arts. Jr. Standing required and completion of Comp. II, or permission of instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 1160 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ALS 3060 Topical Seminar: Natural Sciences**

[4 credit hours]

Topics of general interest that consider scientific problem solving in such areas as biology, chemistry, geology, astronomy, physics, mathematics and statistics. Jr. Standing required and completion of Comp. II, or permission of instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 1160 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**UC 1000 Orientation**

[1 credit hour]

An orientation to college for incoming first year students in the Gateway Program. It is designed to equip students with tools for academic success.

**Term Offered:** Spring, Fall

**UC 1110 Creative Problem Solving**

[2 credit hours]

This course assists students in developing problem solving skills through critical thinking, simulated situations and other activities designed to engage and challenge problem solving capabilities.

**UC 1120 Career And Self-Evaluation**

[2 credit hours]

This course offers an opportunity to explore two important considerations in choosing a career: (1) career opportunities and requirements, (2) individual interests, abilities, skills, needs, values and goals. Students will have opportunities to develop a resume, complete career and interest assessments, investigate a variety of majors at UT and create a personalized career action plan.

**Term Offered:** Spring, Summer, Fall

**UC 1130 Information Literacy for College Research**

[3 credit hours]

This course will provide information literacy skills specific to accessing sources and materials appropriate for university level research. Students will acquire a broader knowledge of library services and resources. Additionally, students will learn to apply research logic in order to utilize library catalogs, electronic databases, the World Wide Web, and print resources. By building experiential knowledge, students will gain an understanding of information creation, dissemination, and applications through utilizing various research strategies and scholarly communication.

Core Arts & Humanities

**UC 1140 Introduction to Learning Technologies**

[1 credit hour]

This course prepares students with the computer and media literacy skills necessary for successful online learning. Students will acquire greater knowledge of the academic technologies utilized by the University, including email, Blackboard, virtual labs, online library resources, Web 2.00 tools, and the role of copyright and accessibility standards with respect to these technologies.

**UC 1150 Orientation: Strategies for College Success**

[3 credit hours]

Acquaints students with the services, policies, procedures and layout of the University, along with relevant study skills and student learning services available campus-wide. Required of all pre-major students; optional for others.

**UC 1200 Applications of Thinking Critically**

[3 credit hours]

Introduces students to critical thinking and fosters intellectual abilities. The course is designed for first year students who earned below a 2.0 their first or second semester and for transfer or adult students entering college with less than a 2.00 GPA.

**UC 1940 Learning Through Service**

[2 credit hours]

Students will be involved four hours a week in various community service projects and analyze and reflect on their experiences through journals, discussion and a final paper in a weekly seminar (local, domestic and International).

**UC 2980 Special Topics**

[1-4 credit hours]

Special Topics is an opportunity to create and pilot potential courses at a 2000 level.

**Term Offered:** Spring, Summer, Fall

**UC 4980 Special Topics**

[1-4 credit hours]

Topics of interest to University College students offered by various instructors. Open to any University College student.

## Associate of Arts in General Studies

### Associate of Arts in General Studies (A.A. GENS)

The Associate of Arts degree is a sixty-hour program that allows students to complete UT core curriculum classes and incorporate classes from baccalaureate majors that they are interested in exploring.

The Associate of Arts in General Studies requires the completion of 36 semester hours of UT Core credit that is aligned with the Ohio Transfer Module (<https://www.ohiohighered.org/transfer/transferrmodule>). It also requires an additional 24 semester hours which must be completed in 1000-2000 level classes chosen by the student to support transfer to a baccalaureate degree program, or fulfill personal interests. Students may elect to enroll for entry-level classes in the major of choice and fulfill program pre-requisites through the completion of these hours. Students must complete a minimum of 15 semester hours of credit as a University College Degree Program Associate degree student.

Many popular majors like criminal justice, communication, and psychology have a series of classes at the 1000-2000 level that must be completed by all majors and these classes align perfectly with the General Studies curriculum. Students will also have the benefit of completing an intermediate credential en route to the Bachelor's degree, which may aid in persistence and retention to graduation at a higher level. At a minimum, students will have completed a suite of transferable classes that may apply to nearly all baccalaureate degrees.

A variety of information about the programs and services available to students enrolling in the Associate of Arts in General Studies is available through the University College website (<http://www.utoledo.edu/uc>).

A minimum cumulative grade-point average of 2.0 (on a 4.0 scale) is required for admission to the Associate of Arts program. Students entering the program directly from high school must also have a minimum score of 19 ACT/800+ SAT/88+ NEW SAT. Transfer students must have a 2.0 cumulative GPA. The University of Toledo requirements for the TOEFL must also be fulfilled for admission of international students. For additional information on admissions, visit The University of Toledo Admissions website. (<http://www.utoledo.edu/admission>)

### Associate of Arts in General Studies (AA GENS)

- Minimum of 60 semester-hours for graduation
- 36 hours of UT Core which are also Ohio Transfer Module (OTM)
- 24 hours at 1000-2000 level chosen by student (non-technical)
- Meets 15 hours residency requirement
- A cumulative 2.0 GPA is required for graduation, along with 2.0 in UT Core courses

Code	Title	Hours
ENGL 1110	College Composition I	3
Select one of the following English Courses:		3

ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
ENGL 2960	Professional and Business Writing	
MATH 1180	Reasoning With Mathematics (or Higher)	3
Two Social Sciences Core		6
Two Arts/Humanities Core		6
Two Natural Sciences Core, one with lab		7
Diversity of US		3
Non-US Diversity		3
BUAD 1020	Micro-Computer Applications In Business	3
or CMPT 1100	Microsoft Office Applications	
Select 24 semester hours of 1000-2000 level non-technical classes <sup>1</sup>		24
Total Hours		61

<sup>1</sup> An additional 24 semester hours of 1000-2000 level non-technical classes chosen by the student to support transfer to a Baccalaureate degree program, or fulfill personal interests. Students may elect to enroll for entry-level classes in the major of choice and fulfill program pre-requisites through the completion of these hours.

## Associate of Technical Studies

The Associate of Technical Studies degree (ATS) is a degree completion option for transfer or returning students who have completed up to 30 semester hours of technical course work at the 1000-2000 level, but have not earned a degree.

The format of this flexible Associate degree enables students to apply their previously completed technical coursework and then supplement that technical background with the UT Core requirements common to baccalaureate degrees while earning the Associate degree.

There is no Direct from High School (DHS) admission to the Associate of Technical Studies. Admission as a transfer student requires a 2.0 cumulative GPA.

### Associate of Technical Studies (ATS TECS)

- Minimum of 60 semester-hours for graduation
- 21 hours of OTM/UT Core and 9 hrs. OTM electives
- 24-30 hours of Technical Electives at 1000-2000 level
- Meets 15 hours residency requirement
- A cumulative 2.0 GPA is required for graduation, along with 2.0 in UT Core courses

#### Requirements

Code	Title	Hours
ENGL 1110	College Composition I	3
Select one of the following English Classes:		3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	
ENGL 2950	Science And Technical Report Writing	
ENGL 2960	Professional and Business Writing	

One Social Sciences Core	3
One Arts/Humanities Core	3
One Natural Sciences Core	3
BUAD 1020      Micro-Computer Applications In Business or CMPT 1100   Microsoft Office Applications	3
MATH 1180      Reasoning With Mathematics (or higher)	3
OTM UT Core Electives	9
Technical Electives	30
Total Hours	60

## Individualized Program: Interdisciplinary Studies (B.A. or B.S.)

An individualized program of study is based on a student's unique interests and goals which would not be addressed by a traditional program of study. The degree awarded is either the Bachelor of Arts or the Bachelor of Science, depending upon the focus of the program. The designated major is Individualized Program: Interdisciplinary Studies.

Students considering an individualized program of study will receive assistance from an academic advisor in preparing an individualized program. Important considerations in the formulation of a program are as follows:

- The program must be interdisciplinary or intercollegiate in nature (broad in scope, incorporating more than one discipline);
- The program must not duplicate an existing program of study in another college of the university; and
- The student's objectives must be clearly stated and must align with courses identified for achieving these objectives.

Academic advisors work with students to design a program of study that aligns the student interests, background, and skills with courses offered by The University of Toledo. This alignment will meet the undergraduate degree requirements established by University College and The University of Toledo.

Working with the academic advisor, a University College student will be guided through the design of his/her individualized program. Each individualized program of study is reviewed and approved by the Individualized Degree Program Review Committee. This Committee also determines that the individualized program of study meets all undergraduate degree requirements. Once the individualized program is approved, **prior written approval is necessary to make any course substitutions**. If the Committee denies an individualized program of study, a student may appeal the decision through established University College procedures.

NOTE: Students may take no more than thirty (30) semester hours of course work from the College of Business and Innovation (COBI) with no more than three (3) courses from any one department, unless the department is COBI's Business Administration Department that allows up to eight (8) courses to be taken towards an individualized program of study.

The individualized program of study is particularly useful for students with an associate's degrees and/or those with a variety of credits earned. The individualized program of study is a workable option for degree completion for many students. Students enjoy the benefits of flexibility, individual attention to their needs, personalized advising, access to all of The University of Toledo's academic resources, and the ability to select classes which meet their academic interests and career goals.

Graduates of the Individualized Program find jobs in the specific fields to which their studies are geared. They have the ability to succeed in the arts, in government agencies, and in business organizations. Also, many students choose to continue their education in graduate and professional programs.

Admission to the Individualized Program within University College requires a 2.0 cumulative college grade point average from all post-secondary institutions attended and 20 earned semester hours (30 quarter hours); direct from high school students are not eligible for admission to the Individualized Program.

An individualized program of study is based on a student's unique interests and goals which would not be addressed by a traditional program of study. The degree awarded is the Bachelor of Arts or the Bachelor of Science, depending upon the focus of the program. The designated major is Individualized Program: Interdisciplinary Studies and requires a minimum 120 semester hours or more, depending upon the agreed program content.

Within the lower division curriculum, the student must fulfill the UT Core (<http://utoledo-public.courseleaf.com/general-section/university-undergraduate-core-curriculum>) requirements, detailed in the General Section of The University of Toledo Undergraduate Catalog. The UT Core (<http://utoledo-public.courseleaf.com/general-section/university-undergraduate-core-curriculum>) must be fulfilled by all baccalaureate degree students. As part of meeting this requirement, University College Individualized baccalaureate degree students must meet the following specific requirements:

- One English Literature or Writing Across Curriculum (WAC) elective;
- One Philosophy elective;
- One American Government or one American History or Economics elective;
- BUAD 1020 or CMPT 1100;
- One elective from Anthropology, Geography, Psychology, or Sociology;
- One Communication elective;
- AL 3500 – Fundamentals of Interdisciplinary Research; and
- AL 4950 – Senior Capstone (AL 4940 – Field Experience/Internship – may be used as the capstone with Advisor permission.)

Within the upper division curriculum, thirty-nine (39) semester hours must be completed in courses numbered 3000 or 400). Students must complete a minimum of 30 semester hours of credit as a University College degree program student (per UT Academic Policy 3364-71-10 (<http://www.utoledo.edu/policies/academic/undergraduate/pdfs/3364-71-10%20Residency%20requirement%20for%20a%20degree.pdf>) available on The University of Toledo Policy website (<http://www.utoledo.edu/policies>)). The minimum number of approved credit hours required for completion of an Individualized Program

from the University College is 120 semester hours and may be more, depending upon the agreed program content.

## Bachelor of Arts in IDVP Requirements

Code	Title	Hours
ENGL 1110	College Composition I	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics (or higher)	3
Diversity of US and Non-US Diversity		6
Arts/Humanities Core		6
Social Sciences Core		6
Natural Science Core, from different disciplines, one with lab		7
BUAD 1020	Micro-Computer Applications In Business	3
or CMPT 1100 Microsoft Office Applications		
English literature or WAC <may also count as Humanities>		3
Philosophy <may also count as Humanities>		3
Select one class of the following <may also count as Social Science>:		3
ECON		
US Political Science		
US History		
Select one class of the following <may also count as Social Science>:		3
ANTH		
GEPL		
PSY		
SOC		
Communication <may also count as Humanities of Social Science>		3
AL 4950	Senior Capstone	4
Thirty-nine hours must be completed at the 3000-4000 level by the time of graduation		39
AL 3500	Fundamentals of Interdisciplinary Research	3
Total Hours		98

An Individualized Program must contain at least 30 semester-hours of course work that is distinct from any existing major at UT. No more than six classes from any one department may be incorporated without that department's permission. Students must create a Plan of Study and submit for approval by end of second semester in program. Hours needed in the program depend on individual student record and situation. The information listed above are the requirements towards the minimum number of 120 approved semester hours, or more depending on the approved program of study, needed for the degree.

## Bachelor of Science in IDVP Requirements

Code	Title	Hours
ENGL 1110	College Composition I	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
MATH 1180	Reasoning With Mathematics (or higher)	3
Diversity of US and Non-US Diversity		6
Arts/Humanities Core		6
Social Sciences Core		6

Natural Science, two disciplines, one with lab		7
BUAD 1020	Micro-Computer Applications In Business	3
or CMPT 1100 Microsoft Office Applications		
English literature or WAC <may also count as Humanities>		3
Philosophy <may also count as Humanities>		3
Select one class of the following <may also count as Social Science>:		3
ECON		
US Political Science		
US History		
Select one class of the following <may also count as Social Science>:		3
ANTH		
GEPL		
PSY		
SOC		
Communication <may also count as Humanities of Social Science>		3
AL 4950	Senior Capstone	4
Thirty-nine hours must be completed at the 3000-4000 level by the time of graduation		39
AL 3500	Fundamentals of Interdisciplinary Research	3
Total Hours		98

An Individualized Program must contain at least 30 semester-hours of course work that is distinct from any existing major at UT. No more than six classes from any one department may be incorporated without that department's permission. Students must create a Plan of Study and submit for approval by end of second semester in program. Hours needed in the program depend on individual student record and situation. The information listed above are the requirements towards the minimum number of 120 approved semester hours, or more depending on the approved program of study, needed for the degree.

### Exceptions:

- Twenty-five percent (25%) of course work applying toward degree must be completed in one of the following areas:
  - Natural Sciences,
  - Mathematics,
  - Computer Sciences and/or
  - Health Education.
- A minimum of twelve to fifteen (12-15) semester-hours of course work at the 3000-4000 level in the above areas must also be completed.

## Liberal Studies

Adult students, 24 years of age or older, may earn the Bachelor of Arts in Liberal Studies degree by completing a broad, liberal arts-based curriculum. A minimum of 120 semester hours is required for the LS degree. Courses in this program are scheduled to facilitate attendance by those having other full-time responsibilities. The Liberal Studies program was approved to be an accelerated degree program for adults with an alternative core curriculum that includes the minimum required hours with a different distribution of required classes. Students benefit from a wide scope of special topic seminar classes that are student driven. These classes explore events and attitudes through critical thinking and



interaction with other adult students. Students less than 24 years of age at the time of admission may be accepted at the discretion of the Assistant Dean of University College.

Students begin by enrolling in general education courses and completing English Composition I and II. In conjunction with individual advising, students are introduced to research in the liberal studies by emphasizing processes that build effective critical thinking and writing as foundations. Students progress to topical seminars that utilize the foundational skills developed earlier in the program. Students choose a concentration related to an area that meets their professional or personal goals. Students take an active role in determining the direction and content of their learning. This program can also serve as a degree completion option for those with existing college credit.

Graduates find the broad educational value of the Liberal Studies program employment opportunities in all business, industry, and service sectors. Many choose to pursue advanced degrees in law, health, and other areas of special interest.

## Online Option

The Liberal Studies (LS) program seminars can be completed entirely online. Minimum computer skills are advised for online courses, such as internet navigation, Blackboard, email, and basic knowledge of Microsoft Office.

Admission requirements for the Liberal Studies (LS) program are as follows:

New Students - must be 24 years of age or older, and have either a high school grade point average of 2.0 or a 19 on the ACT.

Transfer Students - must be 24 years of age or older and have a cumulative college grade point average of 2.0 or higher from all post-secondary institutions or be Active Military/Veteran.

## Bachelor of Arts in Liberal Studies

- 120 semester-hours for graduation
- Ability to substitute CLEP for UT Core requirements
- Required Concentration and Senior Capstone
- Meets the 30 hours residency requirement of University College
- A cumulative 2.0 GPA is required for graduation, along with 2.0 in UT Core classes.

### CLEP Scores for the Liberal Studies Program

Students may have the potential to take the College Level Examination Program (CLEP). These examinations are given to establish competency in the UT Core discipline areas of mathematics, humanities, and social sciences. These three discipline areas are required for graduation. The required UT Core credit hours and the regulations for the CLEP exams for this program are as follows:

1. Students earning a CLEP exam score ([http://www.utoledo.edu/offices/registrar/student\\_records/clep\\_exams.html](http://www.utoledo.edu/offices/registrar/student_records/clep_exams.html)) below the required minimum, or those choosing not to take the CLEP exam, must earn a minimum of 3 semester hours of credit in a math UT Core course. A minimum of 9 semester hours each of credit in UT Core courses in the

areas of the humanities, social science, and natural science are required. Independent studies may not be substituted for any UT Core course;

2. Students who take any introductory courses in these three discipline areas after entry into the Adult Liberal Studies program forfeit their right to apply CLEP credit in that discipline toward their Liberal Studies degree. In addition, passing scores on the UT Core courses are required as prerequisites to enroll in the Liberal Studies topical seminars. Therefore, students are encouraged to take the CLEP exams early in their academic endeavors;
3. Students who have taken course work in any of these discipline areas prior to entry into the Adult Liberal Studies program, and subsequently earn CLEP credit, cannot have credit for both count toward meeting UT Core requirements;
4. Students earning the required minimum CLEP score will have 10 semester hours of credit posted to their transcripts; and
5. Students earning a CLEP exam score within five points of the required minimum score may retake the exam after a period of six months.

## Topical Seminars

These seminars are upper-division courses in the social sciences (ALS 3040), humanities (ALS 3050) and natural sciences (ALS 3060) that change each semester. Each student will complete two seminars from each of the three areas. Students may then choose to complete an additional three ALS seminars, or select 12 hours of course work (four classes) at the 3000-4000 level that support their academic interests.

**No more than ten ALS seminars will be counted toward fulfillment of graduation requirements.** The final requirement of the Liberal Studies program is completion of the AL 4950 Senior Capstone class. Students are responsible for fulfilling the program's prerequisites and should seek an academic advisor's guidance before enrolling in courses. Students who enroll in a topical seminar without the required prerequisites may be administratively dropped from the course. Students must complete a minimum of 30 semester hours of credit as a University College degree program student,

## Prerequisites for the Topical Seminars

1. Earned credits in College Composition I and II by taking and passing the courses or earning credit through PLA; and
2. Completion of a minimum of 9 credit hours in the discipline area of the topical seminar or passing the CLEP examination in the discipline of the seminar with a score of 50 or above.
3. Sixty semester hours of earned credit or permission of the instructor.

## Electives

Students are to establish an emphasis area that ties together their educational interests and/or career aspirations. The objective of these courses should be academic investigation and should focus on sound educational goals. Students should seek the advice of an academic advisor in drafting their elective course components.

## Area of Concentration

Students are required to complete a minimum of three classes (9 hours) of upper-division courses (3000/4000 level) that are associated with an



area of academic investigation or a knowledge base that is related in theoretical content to support the Senior Capstone.

## Senior Capstone

AL 3500, Fundamentals of Interdisciplinary Research, is the prerequisite to AL 4950 and focuses on developing the research skills needed for successful completion of the Senior Capstone.

AL 4950, Senior Capstone, is the final requirement of the LS program. It is a 4 credit hour project undertaken with a faculty member who serves as the capstone advisor. Students should seek the advice of an academic advisor and must turn in the appropriate paperwork before enrolling in this final requirement. Students are expected to integrate their respective thesis themes with their concentration courses.

Code	Title	Hours
<b>UT Core</b>		
Orientation		1
One Math course or CLEP Test		3
English Comp I		3
English Comp II		3
<b>UC College Core</b>		
AL 3500	Fundamentals of Interdisciplinary Research	3
Arts/Humanities Core or CLEP		9-10
Social Sciences Core or CLEP		9-10
Natural Sciences Core or CLEP		9-10
BUAD 1020	Micro-Computer Applications In Business	3
or CMPT 1100	Microsoft Office Applications	
<b>Liberal Studies Core</b>		
Select two classes in each of the following seminar areas:		24
ALS 3040	Topical Seminar: Social Sciences	
ALS 3050	Topical Seminar: Humanities	
ALS 3060	Topical Seminar: Natural Sciences	
Select three additional ALS seminars or four classes at the 3000-4000 level		12
Select three Concentration courses (3000-4000 level)		9
AL 4950	Senior Capstone	4
<b>Electives</b>		
Select 25-28 hours of electives in consultation with advisor <sup>1</sup>		28-25
Total Hours		120

<sup>1</sup> Many of these may be fulfilled by transfer credit if applicable.

The Liberal Studies Honors program provides a valuable foundation of writing and research for students who want to be admitted into advanced graduate or professional programs or for those wanting a stimulating learning experience. Any student qualifying for Liberal Studies Honors needs to complete 27-33 Honors hours with a final 3.3 GPA or better to graduate with College Honors.

## Professional Studies

This degree completion program combines minors in high demand areas from the College of Business and Innovation (<http://www.utoledo.edu/business>) (COBI) with customized programming from University

College designed to develop professional effectiveness in the areas of information literacy, interpersonal communication, and organizational culture. Students will earn a minor in one of three areas: Electronic Commerce and Information Technology, Professional Sales or Entrepreneurship, and Family and Small Business with the Bachelor of Arts in Professional Studies.

## Bachelor of Arts in Professional Studies Required Curriculum

The Bachelor of Arts in Professional Studies requires 120 credit hours for graduation. As part of earning this degree, the UT Core (<http://utoledo-public.courseleaf.com/general-section/university-undergraduate-core-curriculum>) must be met through credit transfer or through courses taken at the University along with an additional thirty (30) semester hours of classes taken at the 3000-4000. A 2.0 GPA in the UT Core courses along with a cumulative 2.0 GPA is a requirement for graduation. University College requires a student to have a minimum of 30 semester hours of credit enrolled in a University College degree program in order to meet the academic residency requirement of University College.

For the Bachelor of Arts in Professional Studies, students will earn a minor in one of three areas: Electronic Commerce and Information Technology, Professional Sales or Entrepreneurship and Family and Small Business. All minors require the student to earn a grade of "C" or better in each of the classes required for the minor.

Code	Title	Hours
<b>Bachelor of Arts in Professional Studies Requirements</b>		
ENGL 1110	College Composition I	3
ENGL 1130	College Composition II: Academic Disciplines And Discourse	3
or ENGL 2960	Professional and Business Writing	
MATH 1180	Reasoning With Mathematics (or higher)	3
Diversity in US and Non-US Diversity		6
Arts/Humanities Core		6
Social Sciences Core		6
Natural Sciences Core, two disciplines, one with lab		7
BUAD 1020	Micro-Computer Applications In Business	3
or CMPT 1100	Microsoft Office Applications	
Core Competency Electives		9
AL 3000	Introduction to Professional Studies	3
AL 4950	Senior Capstone	4
BUAD 2000	Career Development I	1
COMM 3880	Professional Business Communication	3
Technical Electives - Taken in Associate degree		24
Major Electives - Chosen by student from Major Requirements List of Courses below		18
Free Electives, if needed		1-6
<b>Minor</b>		
Select one of the following minors:		21-24
<b>EBUS Minor</b>		
BUAD 3010	Principles Of Marketing	
ECON 1150	Principles Of Macroeconomics	

ECON 1200	Principles Of Microeconomics
EBUS 3090	Doing Business Digitally
INFS 3250	Business Data Analysis & Reporting
Select three of the following:	
INFS 3370	Business Data Communications
INFS 3770	Introduction To Database Systems
BUAD 3050	Information Technology Management
MKTG 3260	Mobile Marketing
MKTG 3280	Internet Marketing
EBUS 3180	Web Design and Data Analytics

**EFSB Minor**

BUAD 3030	Managerial And Behavioral Processes In Organizations
PHIL 3120	Business Ethics
BUAD 2040	Financial Accounting Information
EFSB 3480	Entrepreneurial Finance
EFSB 3500	Introduction To Entrepreneurship for Non-Business Students
EFSB 4010	Growing Family And Entrepreneurial Businesses
EFSB 4590	Entrepreneurship and Small Business Management
EFSB 4690	Innovation and Technology Commercialization
or BUAD 3010	Principles Of Marketing

**PSLS Minor**

ECON 1150	Principles Of Macroeconomics
ECON 1200	Principles Of Microeconomics
BUAD 3010	Principles Of Marketing
PSLS 3440	Professional Sales
PSLS 3450	Sales Technologies and Strategies
PSLS 4740	Advanced Sales
PSLS 3080	Purchasing And Business Relationship Management
or PSLS 4710	Salesforce Leadership

Code	Title	Hours
<b>Major Requirements List of Courses</b>		
Select six of the following Major Electives:		18
AL 4940	Field Experiences and Internship	
BLAW 3550	Legal And Safety Compliance Issues In Human Resource Management	
BLAW 4570	Legal And Ethical Aspects Of Managing Innovation And Technology	
BMGT 2700	Managing Diversity In The Workplace	
BMGT 2750	Cultural Communications In The Workplace	
BUAD 3030	Managerial And Behavioral Processes In Organizations	
BUAD 3470	The Legal And Ethical Environment Of Business	
COMM 2840	Interpersonal Communication (formerly COMM 3840)	
COMM 3340	Visual Communication I (formerly COMM 2630)	
COMM 3820	Persuasion Theory	

COMM 4830	Gender, Culture & Communication
ECON 3030	Consumer Economics
ECON 3050	Economics Of Gender
GEPL 3050	Geography Of U.s. And Canada
HURM 3220	Human Resource Management
IBUS 3150	Understanding Cultural Differences For Business
MGMT 3630	Conflict Management: Mediation & Negotiations (formerly HURM 3630)
MKTG 3170	Marketing For Non-Profit Organizations
PHIL 3120	Business Ethics
RCRT 4000	Community Event Planning
SOC 3800	Social Psychology

## Department of Exploratory Studies

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Director of Student Services

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The Department of Exploratory Studies serves as an entry point to The University of Toledo for students who are exploring college majors, or working to meet the admission requirements of a specific program/college. It also offers services to enhance a student's transition to the university setting and become successful in their academic pursuits. The Department of Exploratory Studies includes services for non-degree seeking students, Pre-major students, Exploratory Studies students, College Credit Plus, and the QUEST students who are undecided on their major.

## Student Exploring Majors

The QUEST Program ensures that students who are undecided on a major and are exploring their options have access to the resources necessary to make informed academic and career choices. Students can stay in the QUEST Program for a maximum of three academic semesters. At any time during the three semesters, providing they meet the requirements for their chosen major, students can declare a major in an academic college.

The program provides academic advising that serves the various needs of students choosing a major and refers them to other campus events, services, and resources such as Career Events, tutoring, career development, and others as necessary. While in the QUEST program, students work to fulfill general education requirements. Employers are looking for college-educated employees with transferable job skills. QUEST helps students gain these skills, which include critical thinking, decision-making, and adaptation to change.

## Exploratory Studies

Students that do not meet the admission requirements for the college of their choice are placed into the Department of Exploratory Studies. Students may take advantage of advisors and Success Coaches who will guide them through the process as they prepare to enter their chosen program or college. Advisors are dedicated to helping students make the right choice in scheduling classes and to making referrals if additional academic support is needed. After a student's first semester within Exploratory Studies, they will be re-evaluated to determine if they meet

the requirements to officially declare a major in the college of their choice. While in Exploratory Studies, students work to fulfill general education requirements and take UC 1000, a one (1) credit Orientation course and UC 1120, a two (2) credit Career and Self-evaluation course.

## Pre-Major Students

The Pre-Major Program here in University College is aimed at providing the additional services and programs needed to assist students with fulfilling their educational goals.

During the time as a pre-major student, a student will:

- Take a reduced credit load
- Attend a specialized orientation course
  - UC 1150: Orientation for College Success (3-credits)
- Participate in a cohort based curriculum

After a student's first semester within the Pre-Major Program, students will be re-evaluated to determine if they meet the requirements to officially declare a major in the college of their choice.

## Non-Degree Seeking Students

Students who are not seeking a degree, yet want to gain new skills or enhance an existing skill, expand career development, or explore new subject matter for personal growth can find a place in The Department of Exploratory Studies. Students can take up to 24 semester hours of undergraduate college credit as a non-degree seeking student.

## Change of College or Major to Exploratory Studies

Students in good standing (i.e., with a cumulative GPA of 2.0 or higher) who wish to change from another college of The University of Toledo to the Department of Exploratory Studies should make an appointment with an advisor to discuss the transfer and have their academic records reviewed. Student transfers will be reviewed on a case-by-case basis. Students who have decided on an academic major or are qualified to transfer from the Department of Exploratory Studies into the college or program of their choice must meet the academic criteria set by the receiving college or program. Students should make an appointment to discuss their transfer with an advisor in the college they wish to enter.

## Department of Military Sciences

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The Military Science and Leadership curriculum will provide cadets with basic military skills and the fundamentals of leadership, as well as start the groundwork toward becoming an Army leader. At the conclusion of the Military Science and Leadership program you will be prepared to commission as an Army Officer with the knowledge, skills, and abilities to plan, resource, and assess training at the small unit level. You will also learn about Army programs that support counseling subordinates and evaluating performance, values and ethics, career planning, and legal responsibilities. You will be familiar with how to plan, prepare, execute,

and continuously assess missions and the conduct of training at the company or field grade officer level.

Any enrolled college student can participate in the first two years of Army ROTC leadership courses without committing to join the Army. This is a unique opportunity to learn valuable skills and explore the program before deciding if this is a career path for you.

The Department of Military Science and Leadership is home to the UT Army Reserved Officer Training Corps (ROTC) Rocket Battalion. Dr. Phillip C. Nash, then President of the University, made a formal application to the War Department for an Infantry ROTC unit in January 1947 and the ROTC was established on May 28, 1947. Over 2,000 lieutenants have been commissioned through the program since 1947.

### Minor in Military Science and Leadership Program

Cadets who complete 27 credit hours of core military science and leadership requirements may apply for the minor.

### COURSE REQUIREMENTS FOR A MILITARY SCIENCE AND LEADERSHIP MINOR

Advance Course. As juniors and seniors, cadets are enrolled in the Advanced Course with a focus on advanced military tactics and gaining experience in team organization, planning, and decision making.

Leadership Lab. All Cadets participate in weekly Leadership Lab as part of their 3 credit hour class. Leadership Lab provides the opportunity for "hands-on" training and skill development. All leadership labs are led by upper-class Cadets as part of their leadership development experience. Leadership labs are usually held on Thursday between 3:30 p.m. and 5:30 p.m.

Code	Title	Hours
6 hours from any MSL 1000 or 2000 level:		
MSL 1010	Introduction to the Army <sup>1</sup>	3
MSL 1020	Foundations of Agile and Adaptive Leadership <sup>1</sup>	3
MSL 1030	Introduction To Physical Fitness	1
MSL 1040	Physical Fitness	1
MSL 2010	Leadership and Decision Making <sup>1</sup>	3
MSL 2020	Army Doctrine and Team Development <sup>1</sup>	3
MSL 2030	Physical Training I	1
MSL 2040	Physical Training II	1
18 hours from the MSL 3000 and 4000 level courses:		
MSL 3010	Training Management and the Warfighting Functions	3
MSL 3020	Applied Leadership in Small Unit OPS	3
MSL 3850	Leaders Development And Assessment Course	3
MSL 4010	The Army Officer	3
MSL 4020	Company Grade Leadership	3
MSL 4800	United States Military History	3
Electives must be 3000 level or higher:		
MSL 3030	Physical Fitness Planning I	
MSL 3040	Physical Fitness Planning II	
MSL 4040	Advanced Pt Planning II	1
MSL 4030	Advanced Pt Planning I	1
MSL 3800	Air Assault Operations	1

MSL 3700	Cadet Troop Leadership Training (ctl)	2
MSL 3600	Airborne Operations	1
Additional Military History courses that meet Cadet Command requirements are:		
HIST 2250	World War I	
HIST 2260	World War II On Film	
HIST 3420	American Military History	
HIST 3430	American Military History In The 20th Century	
HIST 4220	The American Revolution	
HIST 4250	Civil War And Reconstruction	
MSL 4990	Independent Study in US Military History	
HIST 5220	The American Revolution	
HIST 5250	Civil War And Reconstruction	

<sup>1</sup> Leadership Lab. All Cadets participate in weekly Leadership Lab as part of their 3 credit hour class. Leadership labs are usually held on Thursday between 3:30 p.m. and 5:30 p.m.

### **MSL 1010 Introduction to the Army**

[3 credit hours]

Introduces students to issues and competencies that are central to a commissioned officer's responsibilities. Establishes a framework for understanding leadership, officership, Army values, physical fitness and time management. Leadership Lab required.

**Term Offered:** Fall

### **MSL 1020 Foundations of Agile and Adaptive Leadership**

[3 credit hours]

Builds upon the basic leadership fundamentals introduced in MSL 1010 and includes lessons in goal setting, problem solving, critical thinking, values clarification, leadership and followership, and introduces techniques for improving listening and speaking skills. Leadership Lab required.

**Term Offered:** Spring

### **MSL 1030 Introduction To Physical Fitness**

[1 credit hour]

Students participate in the U.S. Army's physical fitness program three days each week. The sessions include running, strength exercises, agility exercises and organized sports.

**Term Offered:** Spring, Fall

### **MSL 1040 Physical Fitness**

[1 credit hour]

Students participate in the U.S. Army's physical fitness program three days each week. The sessions build upon the fitness level previously achieved.

**Term Offered:** Spring

### **MSL 2010 Leadership and Decision Making**

[3 credit hours]

Identifies successful leadership characteristics through observation of others and self, using experiential learning exercises designed to teach students how to communicate, how to build teams and how to plan and organize effectively. Leadership Lab required.

**Term Offered:** Fall

### **MSL 2020 Army Doctrine and Team Development**

[3 credit hours]

Students examine how to build successful teams, including methods for influencing action and achieving goals, effective communication techniques, values and ethics, problem solving and physical fitness. Leadership Lab required.

**Term Offered:** Spring

### **MSL 2030 Physical Training I**

[1 credit hour]

Students participate in physical training three times each week. Students learn how to conduct and lead a military physical training session.

**Term Offered:** Fall

### **MSL 2040 Physical Training II**

[1 credit hour]

Students participate in physical training three times each week. The sessions build upon the training level previously achieved.

**Term Offered:** Spring

### **MSL 2200 Leader's Training Course**

[3 credit hours]

This training is a six week course in leadership management and interpersonal skills taught at Ft. Knox, Kentucky. The training compresses the Military Science 1000 and 2000-level courses. Camp graduates are eligible to enter the Army ROTC Advanced course.

**Term Offered:** Spring, Fall

### **MSL 2990 Independent Study In Military Science**

[1-3 credit hours]

Students will study an appropriate subject mutually agreed upon between the student and instructor.

**Term Offered:** Spring, Fall

### **MSL 3010 Training Management and the Warfighting Functions**

[3 credit hours]

Students assess leadership abilities, plan and conduct individual and small unit training, and apply basic tactical principles and reasoning skills. Leadership Lab required

**Term Offered:** Fall

### **MSL 3020 Applied Leadership in Small Unit OPS**

[3 credit hours]

Examines the role that communications, values and ethics play in effective leadership. Topics include ethical decision making, consideration of others and Army Leadership Doctrine. Leadership Lab required.

**Term Offered:** Spring

### **MSL 3030 Physical Fitness Planning I**

[1 credit hour]

Students design and implement weekly physical training sessions. In addition, they learn how to supervise a group training session.

**Term Offered:** Fall

### **MSL 3040 Physical Fitness Planning II**

[1 credit hour]

Students design and implement weekly physical training sessions. The sessions build upon the skill level previously achieved.

**Term Offered:** Spring

**MSL 3600 Airborne Operations**

[1 credit hour]

Three weeks of intensive field training conducted at Ft. Benning, Georgia. Combines the study of military airborne operations, strenuous physical conditioning, military parachute techniques and culminates with five parachute jumps from military aircraft.

**Term Offered:** Spring, Fall**MSL 3700 Cadet Troop Leadership Training (ctlt)**

[2 credit hours]

Three weeks of practical experience serving as a platoon leader with U.S. Army soldiers. This training puts the student in leadership situations and allows them to practice and hone their leadership skills in a real world environment.

**Term Offered:** Spring, Summer, Fall**MSL 3800 Air Assault Operations**

[1 credit hour]

Two weeks of intensive field training conducted at an Army installation. Combines the study of Military Heliborne Operations, strenuous physical conditioning and advanced rappelling. Culminates with 4 rappels from a military helicopter.

**Term Offered:** Spring, Fall**MSL 3850 Leaders Development And Assessment Course**

[3 credit hours]

This is an intense five-week course conducted between the junior and senior year. This concentrated practical training provides an opportunity to evaluate the student's application of academic knowledge over a myriad of leadership situations and tasks.

**Term Offered:** Spring, Summer, Fall**MSL 3990 Independent Study In Military Science**

[1-3 credit hours]

Students will study an appropriate subject mutually agreed upon between the student and instructor.

**MSL 4010 The Army Officer**

[3 credit hours]

Develops student proficiency in planning and executing complex operations, functioning as a member of a staff and mentoring subordinates. Students explore the Army's training management system, methods of effective staff collaboration and developmental counseling techniques.

**Term Offered:** Fall**MSL 4020 Company Grade Leadership**

[3 credit hours]

Course includes a case study analysis of military law and practical exercises on establishing an ethical command climate. Students complete a semester-long Senior Leadership Project that requires them to plan, organize, analyze and demonstrate their leadership skills.

**Term Offered:** Spring**MSL 4030 Advanced Pt Planning I**

[1 credit hour]

Students design and implement a physical training program for the entire semester. They supervise and critique implementation of the MS 3030 students' weekly training plans.

**Term Offered:** Fall**MSL 4040 Advanced Pt Planning II**

[1 credit hour]

Students design and implement a physical training program for the entire semester. The sessions build upon the skill level previously achieved.

**Term Offered:** Spring**MSL 4800 United States Military History**

[3 credit hours]

An in-depth study of the battle and its place in American history, examining combat leadership and the decision making process at both the operational and tactical level.

**Term Offered:** Spring, Fall**MSL 4990 Independent Study in US Military History**

[1-3 credit hours]

Students will study an appropriate subject mutually agreed upon between the student and instructor.

**Term Offered:** Spring, Summer, Fall

## College Credit Plus

The University of Toledo's College Credit Plus program gives college-bound high school students the opportunity to earn college credit and high school credit simultaneously. This gives students the advantage of starting the transition to college early, while reducing the cost and length of time to receive a degree. High school students can take part in the college experience, interacting with full-time college students and university faculty, while experiencing the rigor of college-level courses.

## Benefits of UT's College Credit Plus Program

- There is no cost to the student or families for course and instructional materials
- All students are assigned a Success Coach (<http://www.utoledo.edu/successcoach>) who has the responsibility to ensure that the student has someone with whom they can meet and confer to receive guidance regarding scheduling, advising, University policies, or any other questions they may have
- All courses are taken with UT undergraduate students
- All College Credit Plus students are considered UT students and have access to many benefits and student support services, with the exception of financial aid.
- Credits earned can transfer toward a bachelor's degree. UT Core/General Education offered in the six modalities meet the Ohio Transfer Module (<https://www.ohiohighered.org/transfer/transfermodule>) (OTM) that guarantees transferability to Ohio universities and colleges
- Courses can integrate virtual labs, simulation center visits and other special resources only UT can offer
- All students have access to their instructor via email, telephone, and in-person during posted scheduled office hours

## Getting Started in College Credit Plus

Students who are interested in participating in the College Credit Plus program should consult with their high school guidance counselor to determine which courses are still needed for graduation; this will help students and their Success Coach when it comes time to create



their college schedule. Next, they will complete The University of Toledo College Credit Plus application form (<https://www.utoledo.edu/admission/dualcredit/docs/DE-Program-Approval-Form.pdf>). The application, transcript, and test score(s) (if applicable) will be reviewed and, if everything is satisfactory, students will be admitted and receive a letter of admission that includes their Rocket number and how to set up their student account and UT Rockets email.

## College Credit Plus Student Responsibilities

- Attend all classes
- Complete all required coursework
- Meet regularly with high school counselor and UT Success Coach to stay on track for graduation and remain successful in all courses.
- Purchase parking permit if applicable
- Pass all classes with a D- or better.
- Students who receive a failing grade in a class can be billed for the published cost of that class by their high school district (if a public school student) or the State of Ohio (if a non-public school student).
- Students in the College Credit Plus program are governed by the same undergraduate academic policies (<http://www.utoledo.edu/policies/academic/undergraduate>) as UT students in University College (<http://www.utoledo.edu/uc>).

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# ACCOUNTING (ACCT) (ACCT)

## ACCT 3100 Financial Accounting and Analysis

[3 credit hours]

This class focuses on the general purpose financial statements and the accounting information system that develops information included in those financial statements.

**Prerequisites:** (BUAD 2040 with a minimum grade of C and BUAD 2050 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

## ACCT 3110 Intermediate Financial 1

[3 credit hours]

This course covers accounting topics applicable to asset valuation, income measurement and financial statement disclosure. It concentrates on accounting for corporations and emphasizes the accounting cycle and the asset side of the balance sheet.

**Prerequisites:** ACCT 3100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## ACCT 3120 Intermediate Financial 2

[3 credit hours]

This course concentrates on financial accounting for corporations and emphasizes the liability and stockholders' equity sections of the balance sheet, and related income statement issues.

**Prerequisites:** ACCT 3110 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## ACCT 3210 Individual Taxation

[3 credit hours]

This class focuses on the concepts and principles applicable to the taxation of individuals.

**Prerequisites:** ACCT 3100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## ACCT 3310 Accounting Information Systems And Controls

[3 credit hours]

This course provides an introduction to processing and reporting of accounting information. Major emphasis is placed on basic accounting information processing including accounting applications in an advanced information technology environment.

**Prerequisites:** ACCT 3100 with a minimum grade of C and BUAD 2020 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## ACCT 3320 Cost Accounting

[3 credit hours]

Internal Reporting focuses on budgeting, product and service costing and the ability to recognize and provide management with relevant information for strategic cost management and performance evaluation.

**Prerequisites:** ACCT 3100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## ACCT 4130 Advanced Financial Accounting

[3 credit hours]

This is the third course in the external financial reporting sequence. This course covers topics such as foreign exchange, partnerships, business consolidations and mergers.

**Prerequisites:** ACCT 3120 with a minimum grade of C and ACCT 5120 with a minimum grade of C

**Term Offered:** Spring, Fall

## ACCT 4250 Taxation of Business Entities

[3 credit hours]

This course covers the taxation of corporations, their shareholders, and other business entities. Topics include formation of business entities, taxation of income, and tax treatment of distributions.

**Prerequisites:** ACCT 3120 with a minimum grade of C and ACCT 3210 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## ACCT 4410 Governmental And Not-For-profit Accounting

[3 credit hours]

Principles, procedures and ethics of financial reporting for not-for-profit organizations, including state and local government. Includes the use of funds, budgets, appropriations and encumbrances as means of control.

**Prerequisites:** ACCT 3120 with a minimum grade of C

**Term Offered:** Spring, Fall

## ACCT 4420 Auditing

[3 credit hours]

Auditing integrates financial and cost accounting, ethics, accounting theory, information systems and control structure concepts into a systematic process of obtaining, evaluating and reporting on economic events and activities.

**Prerequisites:** (ACCT 3120 with a minimum grade of C and ACCT 3310 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

## ACCT 4940 Accounting Internship

[1-3 credit hours]

The accounting internship allows superior accounting students to obtain practical training through a rigorous learning experience. This program enables students to secure a broad exposure to business operations and problems.

**Prerequisites:** ACCT 3110 with a minimum grade of B

**Term Offered:** Spring, Summer, Fall

## ACCT 4990 Independent Study: Readings And Research

[1-3 credit hours]

The student will write a research report on an accounting topic of interest to both student and faculty adviser. The topic must not be covered in another undergraduate accounting course.

**Prerequisites:** ACCT 3120 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

# ADULT AND LIFELONG LEARNING (AL)

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## **AL 2010 Portfolio Development**

[1-3 credit hours]

Course is designed for non-traditional students whose prior learning experiences will be formatted into a portfolio for faculty assessment with the potential of earning college credit.

**Term Offered:** Summer, Fall

## **AL 2020 Foundations of Lifelong Learning**

[1 credit hour]

This interactive course is designed to provide non-traditional students with the tools to establish a foundation for learning and success in college and beyond. Students will be able to select topics relevant to their circumstances and goals

**Term Offered:** Spring, Summer, Fall

## **AL 3000 Introduction to Professional Studies**

[3 credit hours]

This course will prepare students with advanced computer and information skills necessary for research specific to professional health, business, and community related disciplines.

**Term Offered:** Spring, Fall

## **AL 3500 Fundamentals of Interdisciplinary Research**

[3 credit hours]

This course is designed as a foundational course for University College for all IDVP and Liberal Studies degree program students. It is the required prerequisite course for students needing to take the Senior Capstone (AL 4950 or AL 4940) courses. It is a review of the research process course designed for undergraduate students majoring in all disciplines. It emphasizes the fundamentals of conducting college-level research and the practice of writing about and properly citing that process.

## **AL 4940 Field Experiences and Internship**

[4 credit hours]

The purpose of this class is to provide a culminating experience of self-reflection, academic research, and critical thinking as an experiential-learning capstone to your multi-disciplinary University College undergraduate degree program. The overall objective is that you design a professional portfolio that reflects this learning experience. AL 4940 is completed under the guidance of the instructor of record and it must be completed prior to graduation. Permit required.

**Prerequisites:** AL 3500 with a minimum grade of PS

**Term Offered:** Spring, Summer, Fall

## **AL 4950 Senior Capstone**

[4 credit hours]

This course is designed to provide a capstone experience to students in CALL undergraduate degree programs. Students will have the option of designing a Senior Thesis based upon research related to the area of concentration, or developing an Educational Portfolio that encompasses total learning and its application to a specific problem.

**Prerequisites:** AL 3500 with a minimum grade of PS

**Term Offered:** Spring, Summer, Fall



# ADULT LIBERAL STUDIES (ALS)

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**ALS 1900 Intro Seminar: Adult Liberal Studies**

[2 credit hours]

Introduction to liberal studies. Library use, writing of a documented paper and the development of critical thinking through classroom discussion.

**ALS 3040 Topical Seminar: Social Sciences**

[4 credit hours]

Focus on topics of general interest to liberal arts students with particular reference to tools, concepts and analytical methods of social scientists.

Jr. Standing required and completion of Comp. II, or permission of instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 1160 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ALS 3050 Topical Seminar: Humanities**

[4 credit hours]

Focus of general interest in humanities; writing and communication; religious, philosophical and ideological traditions; traditional and performing arts. Jr. Standing required and completion of Comp. II, or permission of instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 1160 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ALS 3060 Topical Seminar: Natural Sciences**

[4 credit hours]

Topics of general interest that consider scientific problem solving in such areas as biology, chemistry, geology, astronomy, physics, mathematics and statistics. Jr. Standing required and completion of Comp. II, or permission of instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 1160 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

# AFRICANA STUDIES (AFST)

## AFST 1100 Introduction To Africana Studies

[3 credit hours]

Introductory survey of basic theoretical concepts to analyze the Black experience, with special focus on the general historical process common to the African Diaspora (Africa, Caribbean and the Americas - South, Central and North, especially the USA.)

**Term Offered:** Spring, Summer, Fall  
Multicultural US Diversity

## AFST 1110 African Civilization

[3 credit hours]

General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.

Core Arts & Humanities, Multicultural Non-US Diversity

## AFST 1200 Introduction To The African Experience

[3 credit hours]

Introduction to the African experience through case studies of critical historical experiences: origin of humanity, origin of civilization, empire and traditional society.

**Term Offered:** Spring, Summer, Fall  
Multicultural Non-US Diversity

## AFST 2100 Foundations Of Black Intellectual History

[3 credit hours]

An examination of slavery and colonialism in the intellectual history of the African Diaspora, especially in the work of W.E.B. Dubois, C.L.R. James and Kwame Nkrumah.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

**Term Offered:** Spring  
Multicultural US Diversity

## AFST 2200 Foundation Of Culture In The African Diaspora

[3 credit hours]

Examination of culture in the African Diaspora by focusing on continuities and discontinuities in music and dance, material culture, language and folklore and the cultural practices of everyday life.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-

Multicultural Non-US Diversity

## AFST 2220 History Of Jazz

[3 credit hours]

A study of the development of jazz styles including listening skills and historical perspectives. Because the major innovations and stylistic interpretations of jazz are a result of African Americans, the course includes a study of how their culture influenced the development of jazz. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall  
Core Arts & Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

## AFST 2300 Black Community Research Methods

[3 credit hours]

Survey of basic social research methods and studies focusing on the Black community. Class conducts research on Black community of Toledo. Offered as companion to AFST 2400. Topics change each year. Course can be taken twice.

**Prerequisites:** AFST 1100 with a minimum grade of D-

**Term Offered:** Fall

## AFST 2660 Politics In Africa

[3 credit hours]

The character and development of African political institutions and processes with a special emphasis on patterns in the post-independence period and prospects for the future.

## AFST 3250 African-American History To 1865

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.

**Term Offered:** Fall

Multicultural US Diversity

## AFST 3260 African-American History From 1865

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States since 1865.

**Term Offered:** Spring

Multicultural US Diversity

## AFST 3500 Environmental Inequalities & Opportunities

[3 credit hours]

Explores environmental inequality along racial, ethnic, class and national lines. Applies diverse perspectives on the environment to explain, predict and correct environmental inequality in America and throughout the world.

**Term Offered:** Spring

## AFST 3600 Entrepreneurship and the Black Community

[3 credit hours]

Explores the gap between entrepreneurial aspirations and the actual entrepreneurial enterprises in the black community. Examines the subject in a socio/historical context. Diverse sociological perspectives, methodologies and analyses are employed. Student would need 3 hours of Soci-Science or 3 hours of AFST.

**Term Offered:** Spring, Fall

Multicultural US Diversity

## AFST 3700 African Women & the Environment

[3 credit hours]

Overview of empirical evidence and interpretive models of African women with reference to environment. Specific topics: African women managing natural resources; implications of climate change in Africa; ecology and feminism. Student will need 3 hours of Soci-Science or 3 hours of AFST.

**Term Offered:** Spring, Fall

## AFST 3800 Ecotourism: Studies of the Africana World

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall

**AFST 3850 Political Institutions and Grassroots Politics**

[3 credit hours]

Using a hybrid of professional experience and relevant literature, the instructor will educate students about macro and micro levels of political engagement. The course is taught by a seasoned politician, professional policy formulator, and/or experienced grassroots organizer who synergizes grassroots politics with mainstream political institutions to effect positive social change.

**AFST 3900 Perspectives on African American Education**

[3 credit hours]

Covers the history and cultural heritage of African Americans and an in-depth knowledge of experiences of African American student populations in preparation for a variety of career fields, including education, social work, criminal justice, business, nursing, and other professions. Examines key debates and policy proposals to better understand current issues impacting African American student populations. U.S. Diversity

**Term Offered:** Spring, Fall

Multicultural US Diversity

**AFST 4650 African American Writers Before The 20th Century**

[3 credit hours]

A survey of African-American prose, poetry, drama and fiction from 1760 to 1915. Recommended: ENGL 2700, 2800, or 3790.

**Term Offered:** Fall

Multicultural US Diversity

**AFST 4660 African American Literature In The 20th Century**

[3 credit hours]

Study of the literary achievement of major African-American writers beginning with DuBois and ending with Gwendolyn Brooks and Ed Bullins. Recommended: ENGL 2700, 2800, or 3790.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**AFST 4800 Social Change in Developing Nations**

[3 credit hours]

The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

**Term Offered:** Fall

Multicultural Non-US Diversity

**AFST 4900 Senior Seminar**

[3 credit hours]

General theoretical synthesis of the field focusing on a close reading of a recent biographical work of intellectual history, a recent work of cultural criticism and a recent work of social analysis.

**Term Offered:** Spring, Summer, Fall**AFST 4910 Directed Research**

[1-6 credit hours]

Student selected research topic under the supervision of faculty member and the Director of Africana Studies. Permission to enroll is contingent on a written proposal by the student being accepted by the two sponsoring faculty.

**Term Offered:** Spring, Summer**AFST 4920 Directed Readings**

[1-6 credit hours]

For advanced students wishing to read a specialized literature in the field. Requires a written proposal approved by faculty and Director of the Program.

**Prerequisites:** AFST 1100 with a minimum grade of D- or AFST 1200 with a minimum grade of D-**AFST 4980 Special Topics In Africana Studies**

[3 credit hours]

Discussion of a substantial issue in scholarly research or public discourse relative to the African Diaspora. May be repeated for different issues. Maximum number of hours for AFST 4980 should not exceed 9 semester hours.

**Term Offered:** Spring, Summer, Fall

# AMERICAN STUDIES (AMST)

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## **AMST 2700 Introduction To American Studies**

[3 credit hours]

An introduction to the interdisciplinary field of American Studies and U.S. cultural identity through cultural expression and theoretical examination.

**Term Offered:** Spring, Fall

## **AMST 3730 Folklore**

[3 credit hours]

A survey of the field of folklore with an emphasis on folk narrative, folk music and material culture in America. Recommended: Permission of instructor and Composition II

## **AMST 4960 Senior Thesis, Parts I & II**

[5 credit hours]

Part I Research and initial organizational design of the senior thesis.

Advanced American Studies majors work under an adviser's direction.

Part II Completion of a preliminary and then final draft of the senior thesis. The American Studies Faculty Steering Committee administers an oral exam upon thesis completion.

**Term Offered:** Spring, Fall

## **AMST 4980 Special Topics In American Studies**

[3 credit hours]

Investigations of American Culture. Discovering patterns and interrelated phenomena in history, literature, sports, the arts, etc.

## **AMST 4990 Independent Investigation In American Studies**

[1-4 credit hours]

Supervised independent study. Interdisciplinary topics within American culture. For majors only.

# ANTHROPOLOGY (ANTH)

## ANTH 1020 Introduction To Anthropology

[3 credit hours]

A survey of the varied aspects of anthropology, including cultural anthropology, prehistory, physical anthropology and linguistics. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## ANTH 2000 Proseminar In Anthropology I

[1 credit hour]

Students are introduced to the academic and professional nature of Anthropology. Topics covered include professional socialization, honor theses, portfolio construction, preparation for graduate studies, and career development.

**Term Offered:** Spring

## ANTH 2020 Introduction To Archaeology

[3 credit hours]

An introduction to the history, methods and techniques of archaeology and how the discipline of archaeology is related to anthropology, ethnohistory, history and geology. (not for major credit)

**Term Offered:** Fall

Core Social Sciences, Trans Mod Social Science

## ANTH 2100 Human Society Through Film

[3 credit hours]

An introduction through the use of ethnographic film to various aspects of non-western culture and the development of the use of film in anthropology.

**Term Offered:** Spring, Fall

Core Social Sciences, Multicultural Non-US Diversity

## ANTH 2700 Human Evolution

[3 credit hours]

A survey of the human species in time, place and culture and the investigation of the factors underlying human biological variation.

**Term Offered:** Summer, Fall

Core Social Sciences

## ANTH 2750 World Prehistory

[3 credit hours]

A survey of the processes of cultural development from the lower Pleistocene to development of writing.

**Term Offered:** Spring, Summer

Core Social Sciences, Trans Mod Social Science

## ANTH 2800 Cultural Anthropology

[3 credit hours]

Introduction to culture patterns and processes and their relationship to human society and language.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

## ANTH 2900 African American Culture

[3 credit hours]

A survey of the socio-historical and cultural factors of African Americans in the U.S.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

## ANTH 2980 Topics in Anthropology

[3 credit hours]

Examination of Special Topics in Anthropology. May be repeated on different topics.

**Term Offered:** Spring, Summer, Fall

## ANTH 3000 Environmental Anthropology

[3 credit hours]

A study of the functional interrelationships of humans and their biophysical environment in cross cultural perspective, with special emphasis on non-western cultures.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring

## ANTH 3020 Ohio Prehistory

[3 credit hours]

A study of the prehistoric peoples in Ohio from the end of the Ice Age to the arrival of the Europeans.

## ANTH 3330 Food, Health, Society

[3 credit hours]

This course deals with multi-cultural dietary patterns through time and space, as well as cross-cultural influences on health and disease.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

## ANTH 3500 Cultural Diversity in Business

[3 credit hours]

Drawing on ethnographic and case studies to compare and contrast cultural institutions and behavioral patterns of diverse cultures, this course explores the influence of culture on business operations across cultures.

**Term Offered:** Fall

Multicultural Non-US Diversity

## ANTH 3800 Ecotourism: Studies of the Africana World

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall

## ANTH 3850 Peoples Of World: An Evolutionary Approach

[3 credit hours]

An introduction to the socioeconomic activities in societies of varying sociocultural complexity.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity



**ANTH 3900 North American Archaeology**

[3 credit hours]

This course focuses on the history of North America as known from the archaeological record; from the peopling of North America through early historical contexts.

**Prerequisites:** ANTH 1020 with a minimum grade of D- or ANTH 2020 with a minimum grade of D-  
Multicultural US Diversity

**ANTH 3920 Indians Of North America**

[3 credit hours]

A survey of North America Indians from prehistoric times to the present.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring, Fall

Multicultural US Diversity

**ANTH 3940 Peoples Of Sub-Saharan Africa**

[3 credit hours]

The cultures and societies of the Sub-Saharan peoples of Africa.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring

Multicultural Non-US Diversity

**ANTH 4000 Proseminar In Anthropology II**

[2 credit hours]

Discussion among faculty and students devoted to the study of Anthropology with a special focus on the development of a professional portfolio for graduate work or career.

**Prerequisites:** ANTH 2000 with a minimum grade of D-

**Term Offered:** Spring

**ANTH 4200 History and Theory in Anthropology-WAC**

[3 credit hours]

This course acquaints students with various schools of anthropological theory, stressing the influence of traditional approaches on contemporary thought and the impact of historical context on the development of theory.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ANTH 4300 Cultural Resource Management - WAC**

[3 credit hours]

Course explores the history, theory, and contemporary issues behind the historic preservation movement and emergence of Cultural Resource Management in the United States; topics engaged include legislation, federal and state programs, the national register, regional planning, and research orientations.

**Prerequisites:** ANTH 2020 with a minimum grade of D- and ANTH 2800 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ANTH 4450 Exploring the City**

[3 credit hours]

This course takes an interdisciplinary approach to life in cities around the world, with emphasis on the ethnographic exploration of how power, cultural difference, and social inequality in cities are produced and experienced.

**Term Offered:** Fall

**ANTH 4510 Field Methods in Archaeology**

[6 credit hours]

Methods of excavation and recovery of archaeological data. Field school conducted during excavation of a prehistoric site in the Toledo area.

**ANTH 4520 Laboratory Methods In Archaeology**

[3 credit hours]

Instruction in the methods and techniques employed by the archaeologist to analyze cultural material recovered in the field.

**Term Offered:** Fall

**ANTH 4530 Qualitative Approaches in Social Science Research**

[3 credit hours]

This course examines qualitative methods used in social science research. Focusing on ethnographic and qualitative methods, the course provides students the skills necessary to design and conduct qualitative research studies.

**ANTH 4560 Ethnographic Fieldwork**

[6 credit hours]

Consists of field work involving the student in meaningful research problems at the community level. Introduces the student to the methods and problems of participant research.

**Term Offered:** Summer, Fall

**ANTH 4760 Medical Anthropology**

[3 credit hours]

An examination of the biocultural nature of health and illness, with special emphasis on changing patterns of disease in non-western societies.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ANTH 4790 Human Osteology**

[3 credit hours]

This course focuses on human skeletal anatomy and bone morphology using an evolutionary and biocultural perspective. Students are introduced to skeletal elements, their major landmarks, and methods for analyzing materials and assessing variation.

**Prerequisites:** ANTH 2700 with a minimum grade of D-

**Term Offered:** Spring

**ANTH 4820 Anthropology Of Religion**

[3 credit hours]

A cross-cultural approach to the description and analyses of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.

**Prerequisites:** ANTH 2800 with a minimum grade of D-

**Term Offered:** Fall

Multicultural Non-US Diversity

**ANTH 4860 The Irish-American Experience**

[3 credit hours]

A survey of the sociohistorical and cultural factors related to the immigration and adaptation of the Irish in America.

**Term Offered:** Spring

Multicultural US Diversity

**ANTH 4910 Independent Research In Anthropology**

[1-3 credit hours]

Supervised independent research in anthropology.

**Term Offered:** Spring, Summer, Fall

**ANTH 4920 Directed Readings In Anthropology**

[1-3 credit hours]

Designed for those wishing to continue course work in greater depth or seeking contact with unlisted subject areas. Written proposal and consent required.

**Term Offered:** Spring, Summer, Fall

**ANTH 4940 Internship in Anthropology**

[1-6 credit hours]

This course provides students supervised field placement related to the field of anthropology. Qualified students will work in approved organizations, such as museums, parks, research libraries, government agencies, community organizations, businesses, schools, etc.

**Term Offered:** Spring, Summer, Fall

**ANTH 4950 Senior Research Project**

[3-6 credit hours]

Supervised opportunity for senior majors to apply the anthropological approach to a theoretical or applied cultural historical/biocultural problem through individual research, an internship, professional participation or a public education experience.

**Term Offered:** Summer

**ANTH 4960 Honors Thesis**

[3-6 credit hours]

The student completes a thesis under the direction and guidance of their faculty adviser.

**Term Offered:** Spring, Summer, Fall

**ANTH 4980 Problems In Anthropology**

[3 credit hours]

Courses on varied anthropological specialties. May be repeated in different specialty areas such as religion, ethnohistory, ethnic conflict and area courses.

**Term Offered:** Spring, Summer, Fall

# ARABIC LANGUAGE (ARBC)

## ARBC 1080 Culture and Commerce in the Arabic-Speaking World

[3 credit hours]

A study of the culture and society of the Arabic-speaking world with emphasis on business and economics. Taught in English.

**Term Offered:** Spring

Core Arts & Humanities, Multicultural Non-US Diversity

## ARBC 1090 Culture of the Arabic-Speaking World

[3 credit hours]

An introduction to principal social, artistic, and literary aspect of modern culture in the Arabic-speaking world. Taught in English.

**Term Offered:** Fall

Core Arts & Humanities, Multicultural Non-US Diversity

## ARBC 1110 Elementary Arabic I

[4 credit hours]

An introduction to Arabic Language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Term Offered:** Fall

## ARBC 1120 Elementary Arabic II

[4 credit hours]

An introduction to Arabic language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Prerequisites:** ARBC 1110 with a minimum grade of D-

**Term Offered:** Spring

Core Arts & Humanities

## ARBC 2140 Intermediate Arabic I

[3 credit hours]

Further practice of the four language skills with grammar building and readings of a literary-cultural nature.

**Prerequisites:** ARBC 1120 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Arts & Humanities

## ARBC 2150 Intermediate Arabic II

[3 credit hours]

Further practice of the four language skills with grammar building and readings of a literary-cultural nature.

**Prerequisites:** ARBC 2140 with a minimum grade of D-

**Term Offered:** Spring

Core Arts & Humanities

## ARBC 3010 Conversation and Composition I

[3 credit hours]

Work on advanced listening, speaking, reading, and writing skills through intensive work with authentic texts that deal contemporary issues relating to the Arabic-speaking world.

**Prerequisites:** ARBC 2150 with a minimum grade of D-

**Term Offered:** Fall

## ARBC 3020 Conversation and Composition II

[3 credit hours]

Work on advanced listening, speaking, reading, and writing skills through intensive work with authentic texts that deal contemporary issues relating to the Arabic-speaking world.

**Prerequisites:** ARBC 3010 with a minimum grade of D-

**Term Offered:** Spring

## ARBC 3410 Survey of Arabic Civilization I

[3 credit hours]

The course examines the Arabic culture and civilization from Arabic authors' literature published in English as well as in Arabic and compares that to Western thought and expression.

**Prerequisites:** ARBC 3020 with a minimum grade of D-

**Term Offered:** Fall

## ARBC 3420 Survey of Arabic Civilization II

[3 credit hours]

This course further the students' knowledge of the Arabic civilization through examining the ways of thinking and social contexts as expected in literary works and poetry from different eras.

**Prerequisites:** ARBC 3020 with a minimum grade of D-

**Term Offered:** Spring

## ARBC 3430 Survey of Arabic Civilization III

[3 credit hours]

This course further the students' knowledge of the Arabic civilization through examining the ways of thinking and social contexts as expressed in literary works and poetry from different eras.

**Prerequisites:** ARBC 3410 with a minimum grade of D- and ARBC 3420 with a minimum grade of D-

## ARBC 3980 Special Topics in Arabic

[1-3 credit hours]

Study of a selected topic in Arabic language, literature or culture. May be repeated when topic varies.

**Prerequisites:** ARBC 3010 with a minimum grade of D- and ARBC 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ARBC 4010 Arabic Syntax and Stylistics I

[3 credit hours]

It provides thorough intensive work with authentic texts that allows further study of syntax, morphology and complex grammatical structure of Arabic and the relationship between aural/oral aspects of the language.

**Prerequisites:** ARBC 3020 with a minimum grade of D-

**Term Offered:** Fall

## ARBC 4020 Arabic Syntax and Stylistics II

[3 credit hours]

It provides thorough intensive work with authentic texts that allows further study of syntax, morphology and complex grammatical structure of Arabic and the relationship between aural/oral aspects of the language.

**Prerequisites:** ARBC 4010 with a minimum grade of D-

**Term Offered:** Spring

## ARBC 4850 Media in the Arab World

[3 credit hours]

The course provides an in-depth study and analysis of media and news sources in the Arab world and surveys major press and alternative publishing outlets produced in Arabic.

**ARBC 4980 Special Topics in Arabic**

[1-3 credit hours]

Study of a selected topic in Arabic language, literature or culture. May be repeated when topic varies.

**Prerequisites:** ARBC 3010 with a minimum grade of D- and ARBC 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

# ART (ART)

## ART 1030 Multi-Cultural Art Appreciation A Lived Game of Contemporary Art

[3 credit hours]

This course uses a narrative framework drawn from Alternate Reality Games (ARGs) so that it is not just a venue for being told about or discussing artworks, but for experiencing them. In the course, encounters with art in virtual and real spaces are reflected on through an online journal, image collections, the creation of visual artifacts, and individualized feedback on each student's own work from peers. Core Arts & Humanities

## ART 1040 Foundations of Art Studio Technology

[3 credit hours]

Historical and hands-on overview of human interaction with tools; from simple levers to 3D printers and CNC machines. Through studio projects, research, assigned readings and written analysis, students will integrate philosophical and practical concepts. Students will acquire skills and understanding of the tools, techniques and collaborative processes necessary to respond to a rapidly changing global economy and job market. Web-assisted course. Core Arts & Humanities

## ART 1050 Foundations of 2D Design

[3 credit hours]

Exploration of design concepts, formal and conceptual skills, materials and color, media manipulation and study of 2-dimensional surfaces. Discussion of contemporary studio practices and critiquing skills included. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Fall

Core Arts & Humanities

## ART 1060 Fundamentals of Form

[3 credit hours]

Exploration of design concepts, formal and conceptual skills, materials and color, through media manipulation and study of three-dimensional space. Discussion of contemporary studio practices and critiquing skills included. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Fall

Core Arts & Humanities

## ART 1070 Foundations of Digital Media

[3 credit hours]

This course introduces students to the basic digital technologies of contemporary art and design. Web-assisted course.

**Term Offered:** Spring, Summer, Fall

## ART 1080 Foundations of Drawing I

[3 credit hours]

Various approaches to drawing intended to develop skills, perception, and visual acuity. Introduction to a broad range of subject matter and a variety of graphic media. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## ART 1090 Foundations in Drawing II

[3 credit hours]

Dimensional, perspective and volumetric drawing applied to natural, man-made forms, environment and the figure. Rendering techniques, skills and exploration of media integrated with formal composition. Web-assisted course. Humanities core course.

**Prerequisites:** ART 1080 with a minimum grade of D-

**Term Offered:** Spring, Fall

## ART 1110 Art Journey

[3 credit hours]

Distance learning course that introduces aesthetic, cultural and social interpretations of art, community and justice against the background of a "virtual" journey across the United States. Web-assisted course. Humanities core course.

**Term Offered:** Spring, Summer

Core Arts & Humanities, Trans Mod Arts and Humanities

## ART 1990 Special Topics in Art

[3 credit hours]

Group study in studio topics by various instructors. Web-assisted course. May be repeated under different course titles.

**Term Offered:** Spring, Summer, Fall

## ART 2010 Graphic Design I

[3 credit hours]

This course introduces student to fundamental tools for graphic design. Image manipulation, typography, and composition are all explored through bitmap, vector, and page layout programs. Web-assisted course.

**Prerequisites:** ART 1070 with a minimum grade of D-

**Term Offered:** Spring

## ART 2020 Graphic Design II

[3 credit hours]

This course introduces students to fundamental tools for web and interactive design. Topics from Graphic Design I (image manipulation, typography, and composition) are further developed through web-based projects exploring issues specific to digital display and mobile devices. Web-assisted course.

**Prerequisites:** ART 2010 with a minimum grade of D-

**Term Offered:** Fall

## ART 2030 Introduction to Photography

[3 credit hours]

An introduction to photography as a fine art medium; includes digital and traditional camera operations, printing processes, presentation techniques and historic and contemporary photographic concerns. Web-assisted course..

**Term Offered:** Spring, Fall

## ART 2100 Life Drawing

[3 credit hours]

Development of visual and technical skills necessary to represent the figure, working from live models. Presentations focused on artistic understanding of the human body in architectural space, proportion, volume, and anatomy. Web-assisted course.

**Prerequisites:** ART 1090 with a minimum grade of D-

**Term Offered:** Spring, Fall



**ART 2110 Introduction to Printmaking**

[3 credit hours]

Study of basic print materials and media, including relief, monoprint, planographic and intaglio process, general print shop skills, and safety practices. The course forms the basis for further exploration. Web-assisted course.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1080 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 2200 Introduction to Sculpture**

[3 credit hours]

An exploration of the application of traditional methods of sculpture making to additive, subtractive, constructive, and replicative processes with clay, plaster, wood, stone, and metal. Formal and expressive content addressed. Web-assisted course.

**Prerequisites:** (ART 1040 with a minimum grade of D- or ART 1060 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**ART 2210 Introduction to Ceramics**

[3 credit hours]

Basic ceramic techniques explored. Introduction to hand-building, simple mold techniques and the potter's wheel. Basic glaze and clay body formulation and firing procedures. Web-assisted course.

**Term Offered:** Spring, Fall

**ART 2300 Introduction to Painting**

[3 credit hours]

Introduction and overview of painting materials and techniques; may include oil, acrylic, and watercolor media. Explores design concepts, formal and conceptual skills, and color theory. Web-assisted course.

**Prerequisites:** ART 1050 with a minimum grade of D- or ART 1090 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 2800 Visual Literacy-Data Visualization**

[3 credit hours]

This course introduces students to the concepts of visual literacy and data visualization. Students will learn to observe and analyze imagery and data. Web-assisted course.

**Term Offered:** Spring, Fall

**ART 3000 Photography**

[3 credit hours]

Varying studio topics in fine art photography and digital imaging, including Digital Photography Expanded and B&W photography. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2030 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 3010 Interactive Coding**

[3 credit hours]

Varying studio topics in interactive new media including web-art and the exploration of interface design and information dissemination. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2020 with a minimum grade of D-

**Term Offered:** Fall

**ART 3100 Printmaking**

[3 credit hours]

Studio courses focusing on one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses explore various topics and techniques. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 3110 2D Topics**

[3 credit hours]

Studio courses in any of the following disciplines: drawing, painting, or printmaking, or mixed media within separate class settings. Courses may explore various concepts and processes relating to the creation of works of art. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- or ART 2300 with a minimum grade of D-

**Term Offered:** Fall

**ART 3120 Painting**

[3 credit hours]

Studio course in one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses deal with various concepts and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2300 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ART 3200 Sculpture**

[3 credit hours]

Varying studio topics in 3D art, including the creation of works and the exploration of new models of sculpture including installation. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ART 3210 Ceramics**

[3 credit hours]

Varying topics in 3D form creation and processes, including ceramics form execution. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D- and ART 2210 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ART 3400 Concepts in Art, Studio and Theory**

[3 credit hours]

This course surveys advanced theories and practices of contemporary art while creating a forum for engaging visiting artists and the broader art community. The course prepares studio art majors for their degree capstone. Web-assisted course.

**Prerequisites:** ART 1050 with a minimum grade of D- and ARTH 2050 with a minimum grade of D- and ARTH 2060 with a minimum grade of D-

**Term Offered:** Fall

**ART 3850 Gallery Practices**

[3 credit hours]

Workshop covering the planning, installing, promoting, and documenting of exhibitions. Offers hands-on training and directly engages students in all aspects of UT's CVA Gallery operations. May be offered as WAC. Web-assisted course.

**Term Offered:** Spring, Fall**ART 3900 NMDP Externship**

[3 credit hours]

Students will participate in multiple externship experiences throughout the term in print-based, and organizational/educational settings. The externship will involve pre-observational research, job shadowing, and post-observational seminar sessions. Web-assisted course.

**Term Offered:** Spring**ART 3950 NMPD Methods and Practices**

[3 credit hours]

Survey of methods, techniques, and professional practices in new media design including: historical overview, creative and design processes, new media design environments, marketing, commerce, workflow, and collaboration. Web-assisted course. May be offered as WAC

**Prerequisites:** ART 3900 with a minimum grade of D-**Term Offered:** Fall**ART 3990 Special Topics in Art**

[3 credit hours]

Group study in studio topics by various instructors. Web-assisted course. May be repeated under different course titles.

**Term Offered:** Summer, Fall**ART 4000 Advanced Photography**

[3 credit hours]

Advanced studio courses in fine art photography and digital imaging, within separate class settings that may include a variety of processes and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2030 with a minimum grade of D-**Term Offered:** Spring, Fall**ART 4010 NM Interactivity**

[3 credit hours]

Advanced studio courses in interactive new media including web-art, multi-media, electronic publishing, and the expanded exploration of interface design and information dissemination. Web-assisted course. May be repeated under different course titles.

**Term Offered:** Spring, Fall**ART 4020 Time, Motion, Space**

[3 credit hours]

Advanced studio topics in time-based new media, within separate class settings that may include a variety of media and topics, such as 3D modeling, rendering, digital video, and compositing. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 3010 with a minimum grade of D-**Term Offered:** Spring, Fall**ART 4100 2D Methods**

[3 credit hours]

Advanced studio course focusing on one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses explore various topics and techniques. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- and ART 2300 with a minimum grade of D-**Term Offered:** Spring, Fall**ART 4110 Advanced 2D**

[3 credit hours]

Advanced studio course in one or more of these disciplines: drawing, painting, printmaking, or mixed media within separate class settings. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- and ART 2300 with a minimum grade of D-**Term Offered:** Spring**ART 4120 2D Concepts**

[3 credit hours]

Advanced studio courses in one of the following disciplines: drawing, painting, or printmaking, within separate class settings. Courses deal with various concepts and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 2110 with a minimum grade of D- and ART 2300 with a minimum grade of D-**Term Offered:** Summer**ART 4200 3D Methods**

[3 credit hours]

Advanced studio courses in 3D form creation that, within separate class settings, addresses a variety of processes and topics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 (may be taken concurrently) with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**ART 4210 3D Concepts**

[3 credit hours]

Advanced studio topics in 3D art include the creation of works and the further exploration of emerging issues in contemporary sculpture and ceramics. Web-assisted course. May be repeated under different course titles.

**Prerequisites:** ART 1050 with a minimum grade of D- and ART 1060 with a minimum grade of D- and ART 1080 with a minimum grade of D- and ART 1090 with a minimum grade of D- and ART 2200 with a minimum grade of D-**Term Offered:** Spring, Fall**ART 4400 BFA Thesis Exhibition**

[3 credit hours]

A capstone course to be taken by BFA students during the final spring semester that creates a context for accomplishing a professional gallery exhibition with supporting materials. Web-assisted course.

**Term Offered:** Spring

**ART 4410 BA Thesis Project**

[3 credit hours]

A capstone course taken by BAVA students resulting in topic-based projects and published bodies of work relating to their area(s) of focus. Web-assisted course.

**Term Offered:** Spring

**ART 4850 Professional Practices**

[3 credit hours]

Professional skills WAC course for advanced art students. Topics include portfolios, resumes, taxes, contracts, shipping, documenting artwork, artists' statements, exhibitions/competitions, galleries, artists' talks and more. Web-assisted course.

**Term Offered:** Fall

**ART 4910 Independent Study**

[1-6 credit hours]

Individual study into special studio problems. Weekly critiques. Every semester. Time arranged. Web-assisted course. May be repeated as topic varies.

**Term Offered:** Spring, Summer, Fall

**ART 4940 Internship**

[1-4 credit hours]

Student works in professional venue related to a diversity of art fields or endeavors. Web-assisted course. May be repeated for a maximum of 8 credit hours.

**Term Offered:** Spring, Summer, Fall

**ART 4950 Design Project**

[3 credit hours]

Working with AMP students and art history faculty, students will create an exhibition or special project related to topic studied in ARTH 3950. Web-assisted course.

**Prerequisites:** ART 3900 with a minimum grade of D-

**Term Offered:** Fall

**ART 4951 NMDP Seminar**

[1 credit hour]

Analysis of the NMDP experience and creation of a written and mediated project focusing on student activities, client relationship, collaborative efforts, and final product/audience assessment. Web-assisted course.

**Prerequisites:** ART 4950 with a minimum grade of D-

**Term Offered:** Spring

**ART 4990 Special Studies**

[1-6 credit hours]

Group study in studio topics by various instructors. May be repeated when the topic varies.

# ART EDUCATION (AED)

## AED 2100 Art Education for the Pre-Primary and Primary Child

[3 credit hours]

Focuses on the supporting the young child's capacity to create, perceive and appreciate the visual arts. Orientation to materials and instructional techniques will be explored through studio and gallery instruction with a young child.

**Term Offered:** Spring, Fall

## AED 2940 Field Placements In Special Settings

[1-4 credit hours]

Independent field work which will allow the undergraduate student to develop a course of study. Optional placement in a school system or in programs for children and youth at The Toledo Museum of Art.

**Term Offered:** Spring, Fall

## AED 3130 Multi-Cultural Approaches For Art Appreciation

[3 credit hours]

An investigation of innovative methods for teaching multi-cultural understanding through art history and art appreciation. The Toledo Museum of Art's collection will be the focus for the course.

**Term Offered:** Summer, Fall

Multicultural US Diversity

## AED 3300 Crafts In Art

[3 credit hours]

This course is designed to investigate the philosophy and variety of craft processes used to make art. Topics that may be covered include fibers, metal crafts, ceramics, paper making.

**Term Offered:** Spring, Summer, Fall

## AED 3500 Innovations In Art Education

[3 credit hours]

An introduction to new directions in secondary art education. Current views of philosophy and psychology are implemented as the rationale for contemporary curricula in art education. Field experience is to be arranged.

**Term Offered:** Spring

## AED 3940 Art Field Placements In The Elementary School

[1-4 credit hours]

Field placement in an elementary school setting allowing the undergraduate student, with art teacher approval, to develop a course of study that will satisfy the special needs of the student in art education.

**Term Offered:** Spring, Summer, Fall

## AED 4140 Art Education For The Special Child

[3 credit hours]

This course introduces and surveys a wide variety of art strategies and instructional adaptations for use with the child with physical, emotional or mental differences.

**Term Offered:** Spring, Fall

## AED 4200 Computer Graphics In Art Education

[3 credit hours]

This course examines the tools, technology and instructional applications of computer graphics in art settings. This course is especially appropriate for art educators interested in integrating art concepts using the Macintosh environment.

**Term Offered:** Spring

## AED 4230 Integrating Aesthetic Experiences

[3 credit hours]

This course will provide students in education an overview of the role of art and music in curriculum development. (Students may enroll in either art or music education sections.)

**Term Offered:** Fall

## AED 4300 Media And Methods In Therapeutic Art

[3 credit hours]

An investigation into group and individual processes as they relate to art media and methods in therapeutic art will be presented. Experiences in art media will be explored.

**Prerequisites:** AED 4560 with a minimum grade of D-

**Term Offered:** Spring

## AED 4450 Curriculum In Art Education

[3 credit hours]

An exploration of discipline-based art education (DBAE) philosophy in the schools. Field placement in the Toledo Museum of Art's Youth program and the area schools will be used to implement the theoretical base.

**Term Offered:** Fall

## AED 4560 Introduction To Therapeutic Art

[3 credit hours]

This course will introduce students to therapeutic art through investigation of theories in art education and art therapy. Students will explore art media and methods in therapeutic art programming.

**Term Offered:** Fall

## AED 4900 Seminar In Professional Development

[2 credit hours]

This seminar is designed to enhance the student teacher's final preparation for employment. Professional issues, ethical behavior, interview techniques and other processes and concerns involved in entry into the profession will be examined.

**Corequisites:** AED 4930

**Term Offered:** Spring, Fall

## AED 4930 Student Teaching In Art

[6-12 credit hours]

Planned field experiences in public school classrooms under the direction of experienced art teachers. Gradual acceptance of full responsibility by student teacher. A scheduled time will be included to facilitating professional practices.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

## AED 4950 Innovations In Art Education

[3 credit hours]

Students are introduced to a variety of activities and materials based upon children's interests and needs, available materials, and time allotted to art activities in the self-contained classroom.

## AED 4990 Individual Study In Art Education For The Undergraduate Student

[1-4 credit hours]

Individual study is designed to provide the student the opportunity to work individually on professional problems under the direction of the art education staff without formal class meetings.

**Term Offered:** Spring, Summer, Fall

# ART HISTORY (ARTH)

## ARTH 1500 Art In History

[3 credit hours]

Introduction to the aesthetic, cultural and social interpretation of works of art and architecture, and to the historical relationships of artists, patrons, and audiences in art's production and purposes. Web-assisted course. Humanities core course. (Not for major credit in Art History, Studio Art or Art Education).

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## ARTH 2050 History of Western Art

[3 credit hours]

Introduces students to major styles of western art from prehistoric to Early Renaissance. Students will learn to analyze art in terms of formal, cultural, historical, and iconographic contexts. Web-assisted course.

**Term Offered:** Spring, Fall

## ARTH 2060 History of Western Art II

[3 credit hours]

Introduces students to major styles of western art from the Renaissance through the modern era. Students will learn to analyze art in terms of formal, cultural, historical, and iconographic contexts. Web-assisted course.

**Term Offered:** Spring, Fall

## ARTH 2080 History Of Modern Art

[3 credit hours]

European and American art 1700-1940, from the Rococo through Romanticism, Impressionism, Expressionism, Cubism, Dada, and Surrealism. Web-assisted course. Humanities core course.

**Term Offered:** Spring

Core Arts & Humanities

## ARTH 2100 Asian Art

[3 credit hours]

An introduction to the architecture, painting and sculpture of India, China and Japan and their relationship to the major religions and philosophies of each culture. Web-assisted course.

Multicultural Non-US Diversity

## ARTH 2200 Ethnographic Art

[3 credit hours]

Contextual exploration of traditional art forms in the principle cultures of the Americas, Africa and Oceania. Web-assisted course.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

## ARTH 2300 Introduction To Architecture

[3 credit hours]

Study of architectural design (function, materials, structure, aesthetics and symbolism), with focus on significant historical examples from antiquity through the late 20th century. Web-assisted course.

**Term Offered:** Fall

## ARTH 2550 History of Graphic Design

[3 credit hours]

History of Graphic Design introduces students to the history and theory of graphic design from the Roman codex to the modern poster. Topics examined include: how imagery interacts with text aesthetically and visually, the logic and development of typefaces, and the relationship and importance of graphic design to social and political developments throughout history. This three-credit course addresses graphic design from Western cultures and dynamic eras. ARTH 2550 partially fulfills the curricular requirements in Humanities and Fine Arts and is an elective within the Department of Art.

Core Arts & Humanities

## ARTH 2700 Women Artists In History

[3 credit hours]

An introductory survey of women artists from the Middle Ages to the present with consideration of their position in the formation of art history's canon. Web-assisted course.

## ARTH 2980 Special Topics

[1-3 credit hours]

Topics in art history selected by instructor; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring, Fall

## ARTH 3110 Topics In Ancient Art

[3 credit hours]

Special topics in the history of the art or architecture of the ancient world; may be repeated when topic varies. Web-assisted course. May be offered as WAC.

**Term Offered:** Summer

## ARTH 3130 Topics In Medieval Art

[3 credit hours]

Special topics in the history of western art or architecture from 200 to 1500 A.D.; may be repeated when topic varies. Web-assisted course. May be offered as WAC.

**Term Offered:** Fall

## ARTH 3150 Topics In Renaissance Art

[3 credit hours]

Special topics in the history of Renaissance art or architecture; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring, Fall

## ARTH 3190 Topics In 19th-Century Art

[3 credit hours]

Special topics in the history of 19th century art. May be repeated when topic varies. Web-assisted course.

## ARTH 3210 Topics In 20th-Century Art

[3 credit hours]

Special topics in the history of 20th century art. May be repeated when topic varies. Web-assisted course. May be offered as WAC.

## ARTH 3230 Topics In American Art

[3 credit hours]

Special topics in the history of American art or architecture. May be repeated when topic varies. Web-assisted course. May be offered as WAC.

**Term Offered:** Spring, Fall



**ARTH 3250 Topics In Asian Art**

[3 credit hours]

Special topics in the history of Asian art or architecture; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring, Fall

**ARTH 3290 Topics In Architecture**

[3 credit hours]

Special topics in the history of architecture; may be repeated when topic varies. Web-assisted course.

**Term Offered:** Spring

**ARTH 3300 African Art**

[3 credit hours]

Study of the diversity of African art. The course will emphasize region and style with focus upon the collections of African art in the Toledo Museum of Art. Web-assisted course.

**Term Offered:** Spring, Summer, Fall  
Multicultural Non-US Diversity

**ARTH 3350 Ancient Art Of The Americas**

[3 credit hours]

A course that focuses on the artifacts produced by the indigenous populations of the Americas before the arrival of Columbus in the New World. Web-assisted course.

**Term Offered:** Spring, Summer  
Multicultural Non-US Diversity

**ARTH 3400 Contemporary Art**

[3 credit hours]

This WAC course introduces students to art of the 20th and 21st centuries, relating recent makers and movements to critical, cultural, and social issues. Web-assisted course.

**Term Offered:** Spring, Fall

**ARTH 3500 History Of Photography**

[3 credit hours]

An in-depth study of the history of photography. Web-assisted course.

**Term Offered:** Fall

**ARTH 3600 History Of New Media**

[3 credit hours]

This course explores the development of technology as an art medium with a focus on significant historical examples from the 19th through the 21st centuries. Web-assisted course.

**Term Offered:** Fall

**ARTH 3700 Art And Feminism**

[3 credit hours]

A WAC course offering study of 20th and 21st century feminist thought in relation to contemporary art makers and social issues, with consideration of performance and installation. Web-assisted course.

**Term Offered:** Spring

**ARTH 3750 Art and Disease - WAC**

[3 credit hours]

This WAC course considers how objects of material culture (film, photography, painting, sculpture, etc.) have intersected with disease while studying disease-related texts and histories of contagion (e.g., AIDS). Web-assisted course.

**Term Offered:** Spring

**ARTH 3820 Visual Construction Of Gender**

[3 credit hours]

This WAC course focuses on the ways in which images reflect and shape our understanding of gender. Students learn to analyze visual material to identify and articulate their cultural significance in relation to gender. Web-assisted course.

**Term Offered:** Spring, Summer  
Multicultural US Diversity

**ARTH 3900 Art Museum Practices**

[3 credit hours]

Overview of issues and professional practices in art museums, including curatorial responsibilities, interpretation of collections, conceptualization and design of exhibitions, development, education, marketing, and administration. Web-assisted course.

**Term Offered:** Fall

**ARTH 3920 Exhibition**

[3 credit hours]

Study of art historical topic with culmination in an exhibition in a Toledo Museum of Art gallery. Web-assisted course. May be repeated when topics varies.

**ARTH 3950 AMP**

[3 credit hours]

Study of art historical topic theme relating to Toledo Museum of Art works. Precedes ARTH 3960, Exhibition course, but may be taken independently. Web-assisted course. May be repeated when topic varies.

**Corequisites:** ART 3950

**Term Offered:** Spring

**ARTH 3960 TMA Exhibit**

[3 credit hours]

Working with faculty and museum professionals, students create a Toledo Museum of Art exhibition relating to topic studied in ARTH 3950. Web-assisted course. May be repeated when topic varies. Permission of Instructor.

**Prerequisites:** ARTH 3900 with a minimum grade of D- and ARTH 3950 with a minimum grade of D-

**Term Offered:** Fall

**ARTH 3980 Special Studies**

[3-5 credit hours]

Topics in art history selected by the instructor. Web-assisted course. May be repeated when topic varies.

**Term Offered:** Spring, Fall

**ARTH 4500 Contemporary Art And Theory**

[3 credit hours]

A WAC course offering study of 20th and 21st century critical theory in relation to contemporary art makers and social issues, with a consideration of modernist versus postmodernist eras. Web-assisted course.

**Term Offered:** Spring

**ARTH 4910 Senior Thesis I**

[2 credit hours]

Directed research in the history of art for the Senior Thesis. May only be taken with consent of instructor; see department for application form. Must be taken consecutively with ARTH 4920, Senior Thesis II. Web-assisted course.

**Term Offered:** Spring, Fall

**ARTH 4920 Senior Thesis II**

[2 credit hours]

Writing the Senior Thesis. May only be taken after successful completion of ARTH 4910, Senior Thesis I, and with instructor's consent. See Department for application form. Web-assisted course.

**Prerequisites:** ARTH 4910 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ARTH 4940 Internship**

[1-4 credit hours]

Student works in professional venue related to a diversity of art fields or endeavors. Web-assisted course. May be repeated for a maximum of 8 credit hours.

**Term Offered:** Spring, Summer, Fall

**ARTH 4950 AMP Seminar**

[1 credit hour]

Analysis of the AMP experience and creation of a written project focusing on art museum practices.

**Term Offered:** Spring

**ARTH 4980 Special Topics**

[1-5 credit hours]

Topics in art history selected by instructor; may be repeated when topic varies. Web-assisted course. May be offered as WAC.

**ARTH 4990 Independent Study In Art History**

[1-4 credit hours]

Independent Study in special problems of art history. Web-assisted course. May be repeated when topic varies.

**Term Offered:** Spring, Summer, Fall

# ASIAN STUDIES (ASST)

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## **ASST 2100 Introduction to Asian Studies**

[3 credit hours]

Introduction to Asian studies will introduce students to important facet of Asian countries including their culture, historical and modern, social and economic systems. Students will learn the cultural bases of Asian countries or regions. The course will be an integral part of the education of those majoring or minoring in Asian Studies.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

## **ASST 3010 Topic in Asian Studies**

[3 credit hours]

The course covers various topics in Asian Studies, from some specific topics such as Buddhism to the general area of Asian culture. the particular topic may vary depending on the areas of the instructor and the academic interest of the students. It can also serve various topics offered in the study-abroad program.

**Term Offered:** Spring, Summer, Fall

## **ASST 4910 Directed Research**

[1-4 credit hours]

Directed research on a specific topic in Asian Studies. The topic will vary on the instructor and the interest of student in the field.

**Term Offered:** Spring, Summer, Fall

## **ASST 4920 Directed Readings**

[1-4 credit hours]

Directed readings in Asian Studies of various natures or special topics in Asian Studies. The topic may vary depending on the areas of the instructor and the academic interest of the students.

## **ASST 4980 Selected Topics in Asian Studies**

[3 credit hours]

This course examines various fields with the focus on selected academic topics and substantial Asian Studies. Topics may vary depending on the instructor. May be repeated for different topics.

**Term Offered:** Spring

# ASTRONOMY (ASTR)

## ASTR 1010 Survey Of Astronomy

[3 credit hours]

Not for major credit; not open to science majors; no credit after 2010, 2020. General astronomy, including appearance of the sky and nature and evolution of the Earth, Moon, solar system, stars, galaxies and the Universe.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## ASTR 2010 Solar System Astronomy

[3 credit hours]

A quantitative introduction to the contents, origin and evolution of the solar system, as revealed by recent advances in space exploration. High school mathematics at the level of graphs, algebra and elementary logarithms is required.

**Prerequisites:** ACT Math with a score of 20 or MATH SECTION SCORE with a score of 510 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or MATH 1200 with a minimum grade of D- or MATH 1320 with a minimum grade of D- or MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D- or MATH 1750 with a minimum grade of D- or MATH 1850 with a minimum grade of D-

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

## ASTR 2020 Stars, Galaxies, And The Universe

[3 credit hours]

A quantitative introduction to the nature and evolution of stars, galaxies and the universe, as revealed by observation and physical theory. High school mathematics at the level of graphs, algebra and elementary logarithms is required.

**Term Offered:** Spring

Core Natural Sciences, Trans Mod Natural Science

## ASTR 2050 Elementary Astronomy Laboratory

[1 credit hour]

Laboratory exercises and observational measurements in elementary astronomy. Two hours laboratory per week. (not for major credit)

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

## ASTR 2310 Mars

[3 credit hours]

The history of observations of Mars, information gathered during the space program, potential for human exploration and colonization and related contemporary science fiction. High school algebra and graphs will be used.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2010 with a minimum grade of D-

## ASTR 2320 Life In The Universe

[3 credit hours]

The astronomical factors involved in the emergence of life in the universe, the search for extraterrestrial intelligence and the likelihood of advanced civilizations in the Galaxy. May be offered as writing intensive.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or (ASTR 2010 with a minimum grade of D- and ASTR 2020 with a minimum grade of D-)

**Term Offered:** Fall

## ASTR 2330 Black Holes, General Relativity And The Big Bang Theory

[3 credit hours]

Descriptive discussion of the theory of general relativity, the final states of stellar evolution, black holes and history of the universe from the big bang through the formation of the solar system. May be offered as writing intensive.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2020 with a minimum grade of D-

**Term Offered:** Fall

## ASTR 2340 New Frontiers In Astronomy

[3 credit hours]

Descriptive treatment of recent developments in astronomy from spacecraft, such as the Hubble Space Telescope, or from the newest, very large ground based telescopes. May be offered as a writing intensive.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2010 with a minimum grade of D- or ASTR 2020 with a minimum grade of D-

**Term Offered:** Spring

## ASTR 3880 Foundations of Astronomy

[4 credit hours]

Positional Astronomy and Time; Telescopes and Optics; Detection and Characterization of Light (Imaging, Photometry and Spectroscopy); Data Reduction and Measurements; Fundamental Techniques of Astronomy (Parallax, Magnitudes, Interstellar Extinction, Doppler Shift and Spectral Line Widths, Stellar Classification, Color-Magnitude and Color-Color Diagrams, Lightcurves, and Redshifts); Measuring Properties of Stars, Star Clusters, Galaxies, and the Universe.

**Prerequisites:** ASTR 2020 with a minimum grade of D- and PHYS 3310 with a minimum grade of D- and MATH 3610 with a minimum grade of D-

## ASTR 4800 Astronomy In The Planetarium

[3 credit hours]

Theory and practice of astronomical outreach programming. Sky and calendar, mythology, constellations, astrophysics, buying and using small telescopes, operating and maintaining planetarium projectors, sky simulation software, projects and program production.

**Prerequisites:** ASTR 1010 with a minimum grade of D- or ASTR 2010 with a minimum grade of D- or ASTR 2020 with a minimum grade of D-

## ASTR 4810 Astrophysics I

[3 credit hours]

Spherical coordinate systems, astronomical time, celestial mechanics, the solar system and planetary physics, photometry, radiative transfer, stellar spectra and classification, binary stars and stellar masses.

**Prerequisites:** ASTR 3880 with a minimum grade of D-

**Term Offered:** Fall

## ASTR 4820 Astrophysics II

[3 credit hours]

Stellar structure and evolution, close binaries, origin of the elements, the sun, variable stars, star clusters, the interstellar medium, the Milky Way Galaxy, stellar statistics, galaxy structure and evolution, cosmology.

**Prerequisites:** ASTR 4810 with a minimum grade of D-

**Term Offered:** Spring

**ASTR 4880 Astrophysical Measurements**

[3 credit hours]

Astronomical, optical and electronic principles of operation of a modern astronomical observatory. Observing with the 1 meter telescope of Ritter Observatory, introduction to reduction, analysis and interpretation of astrophysical data. Six hours laboratory per week. May be offered as writing intensive.

**Prerequisites:** ASTR 3880 with a minimum grade of D-

**Term Offered:** Fall



# BIOENGINEERING (BIOE)

## BIOE 1000 Orientation and Introduction to Bioengineering Computing

[0-2 credit hours]

Application of graphical design and numerical analysis software required for the solution of bioengineering problems. This course also provides a one-semester overview of key engineering principles and concepts.

**Term Offered:** Fall

## BIOE 1010 Professional Development

[1 credit hour]

Preparation for co-op and full-time employment in industry. Topics include resume writing, interviewing skills, compensation and benefits, social protocol and corporate ethics, biomedical ethics, design and quality control processes and governmental regulation.

**Term Offered:** Spring

## BIOE 1200 Introduction to Bioengineering Applications

[0-2 credit hours]

Application of graphical design and numerical analysis software required for the solution of bioengineering problems. This course also provides a one-semester overview of key engineering principles and concepts.

**Prerequisites:** BIOE 1000 with a minimum grade of D-

**Term Offered:** Spring

## BIOE 1410 Freshman Design Innovation I

[1 credit hour]

Basic concepts for biomedical device design and development and incorporating innovation and entrepreneurial mindset in freshman bioengineering students using team- and project-based learning experiences.

**Term Offered:** Fall

## BIOE 1420 Freshman Design Innovation II

[1 credit hour]

Basic concepts for biomedical device design and development and incorporating entrepreneurial mindset in freshman bioengineering students using team- and project-based learning experiences.

**Prerequisites:** BIOE 1410 with a minimum grade of D-

**Term Offered:** Spring

## BIOE 2100 Bioengineering Thermodynamics

[0-3 credit hours]

Principles of thermodynamics and conservation of mass applied to living systems, biomedical devices and bioprocesses.

**Prerequisites:** PHYS 2130 with a minimum grade of D- and CHEM 1240 with a minimum grade of D- and MATH 2850 with a minimum grade of D- or MATH 2950 with a minimum grade of D-

**Term Offered:** Spring, Fall

## BIOE 2200 Biomaterials

[3 credit hours]

Physical and chemical properties of materials commonly used in medicine. Topics include inflammatory, immunogenic, carcinogenic and toxicologic responses within host tissues as well as testing and evaluation strategies for effective use of materials in medicine and biology.

**Prerequisites:** PHYS 2130 with a minimum grade of D- and (MATH 1860 with a minimum grade of D- or MATH 1930 with a minimum grade of D-) and CHEM 1240 with a minimum grade of D-

**Term Offered:** Spring, Fall

## BIOE 3110 Introduction To Biomechanics

[3 credit hours]

Mechanics of the human musculoskeletal system and its joints. Basic concepts for deformable body mechanics, including stress and strain analysis, viscoelasticity, and applications to common problems in orthopedic biomechanics.

**Prerequisites:** (CIVE 1150 with a minimum grade of D- and BIOL 2170 with a minimum grade of D-)

**Term Offered:** Spring

## BIOE 3300 Biomedical Electronics

[3 credit hours]

Measurement circuits, signal analysis, and computer design in biological systems and medicine. Electronic devices, digital devices, amplifier design and instrumentation safety.

**Prerequisites:** (EECS 2300 with a minimum grade of D- and BIOE 1200 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## BIOE 3400 Biotransport Phenomena

[3 credit hours]

The quantitative description of momentum transport (viscous flow) and mass transport (convection and diffusion) in living systems. Application of engineering methods to model and quantify aspects of bioengineering systems.

**Prerequisites:** BIOE 2100 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Spring, Fall

## BIOE 3500 Bioprocessing Laboratory

[0-3 credit hours]

Introduction to processing techniques used in biotechnology and pharmaceutical industries. The process from concept to product is covered, including the creation and culture of recombinant organisms to synthesize a protein product and the extraction, purification, and assay of the final product.

**Prerequisites:** (BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D- and CHEM 1240 with a minimum grade of D-) and BIOE 2100 (may be taken concurrently) with a minimum grade of D- and (MATH 1860 with a minimum grade of D- or MATH 1930 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## BIOE 3940 Co-Op Experience

[1 credit hour]

Approved co-op experience. Course may be repeated.

**Prerequisites:** BIOE 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## BIOE 3950 Co-Op Experience

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** BIOE 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**BIOE 4100 Physiology For Bioengineers**

[3 credit hours]

Review of general physiological principles followed by a comprehensive study of the human nervous, muscle, circulatory, respiratory, excretory and digestive systems from an engineering perspective.

**Prerequisites:** BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D- and CHEM 1240 with a minimum grade of D- and EECS 2300 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Fall

**BIOE 4110 Advanced Biomechanics**

[3 credit hours]

The goal of this course is for students to be able to describe motions of the human body. Three-dimensional analysis and measurements of human body movements including kinematics, kinetics and energetics of human gait, anthropometry and application to bioengineering and orthopedics will be presented. Euler angles and the screw axis method will be used to describe three-dimensional motions.

**Prerequisites:** BIOE 3110 with a minimum grade of D-

**Term Offered:** Fall

**BIOE 4120 Biosignal Processing**

[3 credit hours]

Design and application of analog and digital signal processors to biomedical signals. Covered topics include the Laplace transform, analog filter design, continuous and discrete Fourier transform, and FIR/IIR digital filter design.

**Prerequisites:** BIOE 3300 with a minimum grade of D- and BIOE 4140 with a minimum grade of D- and (MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-)

**Term Offered:** Fall

**BIOE 4140 Biomedical Instrumentation Laboratory**

[0-2 credit hours]

Design and construction of medical instrumentation, including aspects of signal and image processing, computer integration, and software development. Written skills are emphasized through laboratory report organization, documentation of results, error analysis and interpretation of findings.

**Prerequisites:** BIOE 3300 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4300 Biomedical Quality Control**

[3 credit hours]

Statistical methods for the design, testing and manufacturing of medical devices# the application of statistical methods to quality systems and process validation.

**Prerequisites:** (MATH 1860 with a minimum grade of D- or MATH 1930 with a minimum grade of D-)

**Term Offered:** Spring

**BIOE 4320 Advanced Biomedical Quality Control**

[3 credit hours]

Advanced statistical methods for the design, testing and manufacturing of medical devices; the application of advanced statistical methods to quality systems and process validation.

**Prerequisites:** BIOE 4300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4410 Bioengineering Design Project I**

[3 credit hours]

This course integrates the engineering and life science backgrounds of senior bioengineering students through the presentation of design principles for problems in biomechanical, bioelectrical, biochemical and biological systems. Oral and written communication, engineering economics and business plans are reviewed.

**Prerequisites:** (BIOE 3110 with a minimum grade of D- and BIOE 3300 with a minimum grade of D- and BIOE 3400 with a minimum grade of D- and BIOE 3500 with a minimum grade of D- and BIOE 3940 with a minimum grade of D-)

**Term Offered:** Fall

**BIOE 4420 Bioengineering Design Project II**

[3 credit hours]

A continuation of BIOE 4410. Teams of senior bioengineering students solve problems in biomechanical, bioelectrical, biochemical and biological systems through a design project. Ethics discussions, testing and evaluation of designs, progress reports, oral presentations and a written final report are required.

**Prerequisites:** BIOE 4410 with a minimum grade of D-

**Term Offered:** Spring

**BIOE 4610 Applications of Biotransport**

[3 credit hours]

The application of engineering principles to the design and analysis of artificial organs, drug delivery systems, and tissue engineering and their clinical application.

**Prerequisites:** BIOE 3400 with a minimum grade of D-

**Term Offered:** Spring

**BIOE 4620 Biochemical Engineering**

[3 credit hours]

The application of engineering principles to the design and analysis of biological processes that employ living organisms for the production of biochemicals.

**Prerequisites:** BIOE 3500 with a minimum grade of D- and BIOE 3400 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4630 Bioseparations**

[3 credit hours]

Practical and theoretical aspects of processes required to separate and purify cells, proteins and other biological compounds.

**Prerequisites:** BIOE 3500 with a minimum grade of D-

**Term Offered:** Spring, Fall

**BIOE 4640 Medical Imaging**

[3 credit hours]

Mathematics and physics underlying major medical imaging modalities including X-ray radiography and computerized tomography (CT), magnetic resonance imaging (MRI), nuclear medicine imaging, and ultrasound imaging.

**Prerequisites:** BIOE 4300 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D- or MATH 3860 with a minimum grade of D- and PHYS 2140 with a minimum grade of D-

**Term Offered:** Fall

**BIOE 4710 Biomechanics Of Soft And Hard Tissues**

[3 credit hours]

Composite and hierarchical models bones; models of bone remodeling. Soft tissues models: linear and nonlinear viscoelasticity, Fung's quasilinear viscoelastic theory. Biphasic and triphasic models and mechano-ionic interactions.

**Prerequisites:** BIOE 3110 with a minimum grade of D-

**Term Offered:** Fall

**BIOE 4720 Cellular Electrophysiology**

[3 credit hours]

The physiology of electrically excitable tissues, including nerve, muscle and secretory tissues. Action potential generation, neurotransmission and modulatory mechanisms. Methods for constructing and using computational models of excitable membranes.

**Prerequisites:** (EECS 2300 with a minimum grade of D- and BIOE 4100 with a minimum grade of D-) and (MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D- or MATH 3860 with a minimum grade of D-)

**Term Offered:** Spring

**BIOE 4730 Computational Bioengineering**

[3 credit hours]

Introduction to and utilization of computational packages for bioengineering applications. Introduction to finite element analysis and applications in biochemical, biofluidics, bioheat transfer, optimization.

**Prerequisites:** (BIOE 3110 with a minimum grade of D- and BIOE 1200 with a minimum grade of D-)

**Term Offered:** Spring

**BIOE 4740 Tissue Engineering**

[3 credit hours]

Application of principles from engineering and the life sciences toward the development of biological substitutes that restore, maintain or improve tissue function.

**Prerequisites:** (BIOE 2200 with a minimum grade of D- and BIOE 4100 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**BIOE 4750 Experimental Methods In Orthopedic Biomechanics**

[3 credit hours]

This course provides students with experience in experimental techniques used in orthopaedics and in the study of the musculoskeletal system including mechanical testing of different materials, experimental and analytical methods for stress analysis, strain gages, methods used in human motion analysis to include motion capture, force pressure plates and electromyography. Students will learn to analyze human motion by capturing movements of their choice and will then conduct a biomechanical analysis to quantitatively describe their capture movements.

**Prerequisites:** BIOE 3110 with a minimum grade of D- or CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring

**BIOE 4980 Bioengineering Special Topics**

[1-3 credit hours]

Selected subjects in the field of bioengineering with intensive investigation of the recent literature in a few areas of special interest to the class and the professor.

**Term Offered:** Spring, Fall

**BIOE 4990 Bioengineering Independent Study**

[1-3 credit hours]

The student, under the guidance of their research adviser, explores in-depth specific areas or topics related to their research.

**Term Offered:** Spring, Summer, Fall

# BIOLOGY (BIOL)

## BIOL 1120 Survey Of Biology

[3 credit hours]

A survey of major biological principles and phenomena in various plants and animals with emphasis on man. (not for major credit) .

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## BIOL 1220 Survey Of Biology Laboratory

[1 credit hour]

(Not for major credit) A series of laboratory exercises that supplement the material discussed in BIOL 1120.

**Corequisites:** BIOL 1120

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

## BIOL 2010 Major Concepts In Biology

[3 credit hours]

This course will discuss topics related to the major concepts of biology such as evolution, the cell, the gene and homeostasis. This course is designed for students majoring in science, engineering or other fields that require biology as a prerequisite who have not had sufficient preparation to begin the Fundamentals of Life Science series (BIOL 2150 or BIOL 2170).

**Term Offered:** Spring, Fall

Core Natural Sciences

## BIOL 2150 Fundamentals Of Life Science: Diversity Of Life, Evolution And Adaptation

[4 credit hours]

An introduction to the diversity of multicellular life on earth, evolution and physiological adaptations. Completion of BIOL 2170 prior to enrolling is strongly advised. Prerequisites description: Either (CHEM 1090 or CHEM 1230 or BIOL 2010 or BIOL 2170) with a minimum grade C, or a minimum ALEKS Online Chemistry Initial Placement Assessment result of 50%, or an ACT minimum composite score of 21.

**Prerequisites:** BIOL 2010 with a minimum grade of C or CHEM 1090 with a minimum grade of C or CHEM 1230 with a minimum grade of C or ACT Composite with a score of 21 or BIOL 2170 with a minimum grade of C or Aleks Chem Placement Highest with a score of 50

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## BIOL 2160 Fundamentals Of Life Science Laboratory: Diversity Of Life, Evolution And Adaptation

[1 credit hour]

A series of laboratory exercises which supplement the material discussed in BIOL 2150.

**Corequisites:** BIOL 2150

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## BIOL 2170 Fundamentals of Life Science: Biomolecules, Cells, and Inheritance

[4 credit hours]

A general introduction to cell structure and function, energy processing in plants and animals, basic genetics, molecular biology and development.

**Prerequisite description:** Either (CHEM 1090 or CHEM 1230 or BIOL 2010 or BIOL 2150) with a minimum grade C, or a minimum ALEKS Online Chemistry Initial Placement Assessment result of 50%, or an ACT minimum composite score of 21.

**Prerequisites:** CHEM 1090 with a minimum grade of C or CHEM 1230 with a minimum grade of C or BIOL 2010 with a minimum grade of C or BIOL 2150 with a minimum grade of C or ACT Composite with a score of 21 or Aleks Chem Placement Highest with a score of 50

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## BIOL 2180 Fundamentals of Life Science Laboratory: Biomolecules, Cells, and Inheritance

[1 credit hour]

A series of laboratory exercises which supplement the material discussed in BIOL 2170.

**Corequisites:** BIOL 2170

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## BIOL 2910 Biological Research

[1 credit hour]

A discussion/demonstration of opportunities for undergraduate research in Biology at the University of Toledo and elsewhere.

**Term Offered:** Spring

## BIOL 2980 Special Topics in Biology

[1-4 credit hours]

Selected topics in biology for biology majors and non-majors.

**Prerequisites:** ENGL 1110 with a minimum grade of D- or MATH 1180 with a minimum grade of D-

## BIOL 3010 Molecular Genetics

[3 credit hours]

The principles of heredity at the molecular level, covering gene and chromosome structure, replication and repair, recombination, control of gene expression, control of cell division.

**Prerequisites:** BIOL 2170 with a minimum grade of C and (CHEM 1230 with a minimum grade of C or CHEM 1240 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

## BIOL 3020 Molecular Genetics Laboratory

[2 credit hours]

A laboratory course in experimental molecular biology involving gene cloning, analysis of cloned product and other techniques of modern molecular genetics.

**Corequisites:** BIOL 3010

**Term Offered:** Spring, Fall

## BIOL 3030 Cell Biology

[3 credit hours]

A study of the internal organization of the eukaryotic cell, organelle and membrane function, cell-cell signaling, cell movement, cell adhesion, the extracellular matrix.

**Prerequisites:** BIOL 2170 with a minimum grade of C and CHEM 1240 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**BIOL 3040 Cell Biology Laboratory**

[2 credit hours]

Laboratory exercises involving cell culturing, protein analysis, protein localization and other techniques of modern cell biology.

**Corequisites:** BIOL 3030**Term Offered:** Spring, Summer, Fall**BIOL 3070 Human Physiology**

[3 credit hours]

Detailed structural and functional analysis of the human endocrine, nervous, reproductive, circulatory, respiratory, digestive and excretory systems. An emphasis will be placed on system-system interactions and homeostatic mechanisms.

**Prerequisites:** BIOL 3030 with a minimum grade of C**Term Offered:** Spring, Summer, Fall**BIOL 3090 Developmental Biology**

[3 credit hours]

Lectures on molecular and cellular interactions in animal and plant embryogenesis and development.

**Prerequisites:** BIOL 3030 with a minimum grade of C**Term Offered:** Spring, Fall**BIOL 3100 Developmental Biology Laboratory**

[1 credit hour]

An analysis of development by biochemical and biological methods using live materials.

**Prerequisites:** BIOL 3090 (may be taken concurrently) with a minimum grade of C**Term Offered:** Fall**BIOL 3210 Human Nutrition**

[3 credit hours]

Lectures covering nutrition and transport in humans, role of nutrition in growth and development, nutritional diseases.

**Prerequisites:** BIOL 3070 with a minimum grade of C**Term Offered:** Fall**BIOL 3510 Comparative Vertebrate Anatomy**

[4 credit hours]

A comparative treatment of the evolutionary and developmental history of the major vertebrate organ systems.

**Prerequisites:** (BIOL 2150 with a minimum grade of C and BIOL 2160 with a minimum grade of C and BIOL 2170 with a minimum grade of C and BIOL 2180 with a minimum grade of C)**Term Offered:** Fall**BIOL 3910 Research Project Laboratory**

[2-3 credit hours]

Provides hands-on authentic research experience and comprehensive understanding of the scientific process. May be repeated once for credit, a maximum of 3 hours may be applied to BIOL elective credits in the major or minor.

**Prerequisites:** BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D-**Term Offered:** Spring, Fall**BIOL 4010 Molecular Biology**

[3 credit hours]

Analysis of the regulatory mechanisms for nucleic acid and protein synthesis; genome structure; recombination; genetic damage and repair.

**Prerequisites:** BIOL 3030 with a minimum grade of C**Term Offered:** Spring, Fall**BIOL 4030 Microbiology**

[3 credit hours]

Lectures on the principles of modern microbiology and virology, including metabolism, growth, cellular morphology, genetics and host parasite relationships. Bacterial and viral diseases will be illustrated.

**Prerequisites:** BIOL 3030 with a minimum grade of C and CHEM 2410 with a minimum grade of C**Term Offered:** Spring, Fall**BIOL 4040 Microbiology Laboratory**

[1 credit hour]

Laboratories utilizing basic microbiological techniques and illustrating principles of growth, identification and genetics and control of microbes.

**Prerequisites:** BIOL 4030 (may be taken concurrently) with a minimum grade of C**Term Offered:** Spring, Fall**BIOL 4050 Immunology**

[3 credit hours]

Lectures on the chemical, genetic and cellular basis of the immune response.

**Prerequisites:** BIOL 3030 with a minimum grade of C**Term Offered:** Spring, Fall**BIOL 4060 Immunology Laboratory**

[1 credit hour]

Laboratory studies of the immune response.

**Corequisites:** BIOL 4050**Term Offered:** Spring, Fall**BIOL 4090 Cancer Biology**

[3 credit hours]

Introduction to carcinogenesis and the cellular and molecular features of malignancy. Methods to diagnose and treat malignancies will also be presented.

**Prerequisites:** (BIOL 3030 with a minimum grade of C and BIOL 3010 with a minimum grade of C)**Term Offered:** Fall**BIOL 4110 Human Genetics and Genomics**

[3 credit hours]

A systematic survey of genetic variation in man with emphasis on modern research methodology including genomics.

**Prerequisites:** BIOL 3030 with a minimum grade of C**Term Offered:** Spring, Fall**BIOL 4170 Developmental Genetics**

[3 credit hours]

Survey of animal and plant developmental genetics. Basic principles and methods of genetic analysis, model systems, genetic basis of tissue patterning, evolutionary implications and applications in tissue and plant engineering.

**Prerequisites:** BIOL 3010 with a minimum grade of C**Term Offered:** Spring**BIOL 4210 Molecular Basis of Disease**

[3 credit hours]

Examines the genetic, molecular, and biochemical defects associated with some of the most common human diseases. Includes a review of current research into the molecular causes of selected diseases.

**Prerequisites:** BIOL 3010 with a minimum grade of C and BIOL 3030 with a minimum grade of C**Term Offered:** Fall



**BIOL 4230 Comparative Animal Physiology**

[3 credit hours]

Lectures on the comparative and environmental physiology of vertebrates and invertebrates including metabolism, temperature regulation, respiration, circulation, excretion and osmotic regulation.

**Prerequisites:** (BIOL 3030 with a minimum grade of C and BIOL 3070 with a minimum grade of C)

**Term Offered:** Spring

**BIOL 4250 Introduction to Neurobiology**

[3 credit hours]

An introduction to the molecular, genetic and cellular aspects of neurobiology in humans and model organisms. Topics include neuronal physiology and signaling, neural development, sensation, muscle control, learning and memory.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

**BIOL 4330 Parasitology**

[3 credit hours]

A study of the host-parasite interaction including aspects of parasite morphology, taxonomy, development and ecology.

**Prerequisites:** (BIOL 2150 with a minimum grade of C and BIOL 2170 with a minimum grade of C)

**Term Offered:** Spring, Fall

**BIOL 4700 Biological Literature And Communication**

[3 credit hours]

A writing intensive course that focuses on reading original literature in biology in a variety of formats. Required of all biology majors.

**Prerequisites:** BIOL 3030 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**BIOL 4790 Biology Field Trip**

[2-4 credit hours]

Faculty directed course that incorporates extensive field experience and individual projects.

**Term Offered:** Spring

**BIOL 4910 Undergraduate Research**

[1-3 credit hours]

Faculty directed research. Both oral and written reports of results required.

**Term Offered:** Spring, Summer, Fall

**BIOL 4940 Extramural Research**

[1-4 credit hours]

Prior consent of both the department and the proposed supervisor. Scientist-supervised study of research done in an extramural research institute or scientific laboratory. Written and oral reports to the department required. Maximum of 6 hours may count toward BIOL electives.

**Prerequisites:** (BIOL 2150 with a minimum grade of C and BIOL 2170 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**BIOL 4950 Internship In Biology**

[1-12 credit hours]

Supervised practical experience in the field of biology. Maximum of 6 hours may be used as biology elective credit for BS degree.

**Term Offered:** Spring, Summer

**BIOL 4980 Advanced Topics In Biology**

[1-3 credit hours]

An advanced course for Biology majors in an important area of biology. May be repeated for credit under different specialty numbers (topics).

**Term Offered:** Spring

**BIOL 4990 Independent Study In Biology**

[1-3 credit hours]

Faculty directed readings or projects in a specific area of biology.

**Term Offered:** Spring, Summer, Fall

# BUSINESS ADMINISTRATION (BUAD)

## BUAD 1000 Orientation For Business Students

[1 credit hour]

Introduction to the University community. Strategies for successful college transition are explored.

**Term Offered:** Spring, Fall

## BUAD 1010 Introduction To Business

[3 credit hours]

Introduction to the various functional areas of business, the critical role business plays in the economy, the impact of globalization and the performance of business functions.

**Term Offered:** Spring, Summer, Fall

## BUAD 1020 Micro-Computer Applications In Business

[3 credit hours]

Course provides an overview of the role of micro-computers and information systems in business applications. It provides good training in word processing and spreadsheets for problem solving.

**Term Offered:** Spring, Summer, Fall

## BUAD 2000 Career Development I

[1 credit hour]

This course will assist students with self-assessment, exploring career options and developing a resume. Skills in communicating, listening, organizing and supervising are some of the areas required for long-term career success that are covered.

**Prerequisites:** BUAD 1000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## BUAD 2020 Information Technology Management

[3 credit hours]

The role of computers and information systems in business decision-making, particularly with regard to achieving key business goals such as competitive advantage, operational efficiency, and customer satisfaction in today's digital global economy, will be carefully examined. The student is also expected to become proficient in applying a range of software tools, such as SAP, advanced Excel, Microsoft Access, and Vizio, for business decision making and problem solving.

**Prerequisites:** BUAD 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## BUAD 2030 Executive Communication Essentials

[3 credit hours]

Skills-based course equips the student to effectively network with business professionals, make oral presentations alone and in teams, lead meetings, and write for a business audience. Prerequisite: Sophomore standing

**Term Offered:** Spring, Summer, Fall

## BUAD 2040 Financial Accounting Information

[3 credit hours]

This course is an introduction to financial accounting from the perspective of a financial statement user. Where appropriate, it provides a small and mid-sized company's perspective.

**Term Offered:** Spring, Summer, Fall

## BUAD 2050 Accounting For Business Decision-Making

[3 credit hours]

This course is an introduction to management accounting, including the use and limitations of cost-volume-profit analysis for fundamental decisions concerning products, services and activities.

**Prerequisites:** BUAD 2040 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## BUAD 2060 Business Statistics

[3 credit hours]

Course will cover statistical concepts of data representations, probability, probability distributions, sampling theory, interval estimation, and hypothesis testing. The collection and analysis of data for business decision-making using spreadsheet or other tools such as projects/cases where appropriate.

**Prerequisites:** (MATH 1260 with a minimum grade of D- or MATH 1320 with a minimum grade of D-) or MATH 1340 with a minimum grade of D- or MATH 1730 with a minimum grade of D- or MATH 1750 with a minimum grade of D- and (BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## BUAD 2070 Business Analytics

[3 credit hours]

Course will cover predictive analytics tools such as linear regression, forecasting, data mining and prescriptive analytics tools such as linear programming, simulation and decision analysis. Will emphasize applications of business analytics using spreadsheet, projects/cases where appropriate.

**Prerequisites:** (BUAD 2060 with a minimum grade of D- or MATH 2600 with a minimum grade of D- or MATH 2630 with a minimum grade of D-) and (MATH 1320 with a minimum grade of D- or MATH 1340 with a minimum grade of D- or MATH 1730 with a minimum grade of D- or MATH 1260 with a minimum grade of D- or MATH 1750 with a minimum grade of D-) and (BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## BUAD 2080 Global Environment Of Business

[3 credit hours]

This course covers the global environmental challenges impacting businesses. Topics include globalization forces, country differences in political economy and culture, cross-border trade and investment, regional economic integration, and monetary systems.

**Term Offered:** Spring, Summer, Fall

## BUAD 3000 Career Development II

[1 credit hour]

This course will assist students in developing job search skills necessary to obtain an internship and full-time position. Skills covered include resume enhancement, cover letter design, networking, informational interviewing, interview preparation and professional dress.

**Prerequisites:** BUAD 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**BUAD 3010 Principles Of Marketing**

[3 credit hours]

The general purpose of this course is to provide a basic understanding of what marketing is about including marketing management, and the marketing environment. The course will examine issues such as marketing research, consumer behavior, segmentation, targeting, and positioning strategies, product strategy, pricing strategy, distribution strategy, promotional strategy, new product development, branding, advertising, sales promotion, and public relations.

**Prerequisites:** ECON 1200 with a minimum grade of D- or MIME 2600 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**BUAD 3020 Principles Of Manufacturing And Service Systems**

[3 credit hours]

This course provides an overview of the functions, problems, solution techniques and decision making processes within the manufacturing and service environment. Topics include concept of supply chain, sales and operations planning, MRP, materials management, quality management, and project management.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**BUAD 3030 Managerial And Behavioral Processes In Organizations**

[3 credit hours]

Introduction to managerial and organizational concepts designed to develop knowledge, attitudes, techniques and skills in creating and managing innovative, adaptive organizations. Interactive exercises, videos, cases, discussions and lectures will be used.

**Term Offered:** Spring, Summer, Fall

**BUAD 3040 Principles Of Financial Management**

[3 credit hours]

This course help students develop the skills necessary to understand how financial managers make value- maximizing decisions in their organization. Content stresses fundamentals of financial analysis, short and long-term investments, time value of money, stock and bond valuation, risk and return, and corporate structure.

**Prerequisites:** (BUAD 2040 with a minimum grade of D- or ACTG 1040 with a minimum grade of D-) and BUAD 2060 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**BUAD 3050 Information Technology Management**

[3 credit hours]

The role of computers and information systems in business decision-making will be carefully examined. The student is expected to develop computer-based applications for business decision making and problem solving through the use of state of the art software, including advanced spreadsheets, database and web design tools.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**BUAD 3470 The Legal And Ethical Environment Of Business**

[3 credit hours]

The nature of the law and the formation and application of Legal Principles; the Legal and Ethical Environment in which business operates; regulation of commerce and competition through Contracts, Torts and the Uniform Commercial Code.

**Term Offered:** Spring, Summer, Fall

**BUAD 3500 Sustainable Business Practices**

[3 credit hours]

This course examines the current state of business practice through the lens of sustainability. Coverage includes models and systems that businesses are using to address the social, environmental and economic challenges faced by our global community.

**BUAD 4020 Senior Business Policy Forum**

[3 credit hours]

This course integrates functional business knowledge learned in the core and stresses their interconnectedness and interrelationships. Students will develop and implement strategies in response to changes in the external environment.

**Prerequisites:** (BUAD 3010 (may be taken concurrently) with a minimum grade of D- and BUAD 3020 (may be taken concurrently) with a minimum grade of D- and BUAD 3030 with a minimum grade of D- and BUAD 3040 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

# BUSINESS ANALYSIS (BANS)

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## **BANS 3060 Managerial Economics**

[3 credit hours]

Applications of economic concepts and analytical techniques to business decisions and operations, including pricing and product management, market segmentation, technological development and the regulatory environment.

**Prerequisites:** (ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D-) or ECON 1880 with a minimum grade of D-

**Term Offered:** Fall

## **BANS 3070 Business Fluctuations And Outlooks**

[3 credit hours]

Course focuses on the dynamics of business cycles and economic processes, and how they relate to business. Economic outlooks are examined through key indicators, cases, statistical analyses, and computer applications.

**Prerequisites:** (ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D-) or ECON 1880 with a minimum grade of D-

**Term Offered:** Spring

# BUSINESS LAW (BLAW)

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## **BLAW 3550 Legal And Safety Compliance Issues In Human Resource Management**

[3 credit hours]

Introduction of the issues and challenges facing human resource specialists, generalists and managers in organizations. Legal, social and political aspects of human resource management, as well as compliance requirements for OSHA and other safety laws, are discussed.

**Prerequisites:** BUAD 3030 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **BLAW 3570 The Laws Of Structuring And Operating A Business**

[3 credit hours]

The role of law in structuring and operating business choices of sole proprietorship, agency, partnership, limited partnership, close private corporation, large public corporation, limited liability corporation and negotiable instruments law.

**Term Offered:** Spring, Summer, Fall

## **BLAW 3670 International Business Law**

[3 credit hours]

The role of laws and organizations governing business done in the global arena. Study of the legal environment of international business; international sales, credits and the commercial transaction; international trade law and the regulation of the international marketplace.

**Prerequisites:** BUAD 3030 with a minimum grade of D-

**Term Offered:** Spring

## **BLAW 4570 Legal And Ethical Aspects Of Managing Innovation And Technology**

[3 credit hours]

This course examines intellectual property systems and presents management options for the protection of intellectual property. Technology's legal and ethical aspects are covered, including case studies on specific technological innovations and products.

**Prerequisites:** (BUAD 3030 with a minimum grade of D- and BUAD 3470 with a minimum grade of D-)

**Term Offered:** Spring

## **BLAW 4580 Detection And Prevention Of Deceptive Business Practices**

[3 credit hours]

The course prepares the student to prevent deceptive and fraudulent practices in business, including kinds and definitions of deception and fraud, history, legal aspects, legislation, detection and prevention.

**Prerequisites:** BUAD 3470 with a minimum grade of D-

**Term Offered:** Fall



# BUSINESS MANAGEMENT TECHNOLOGY (BMGT)

## BMGT 1010 Business Principles

[3 credit hours]

An introduction to the world of business focusing on an overview of business operations with special emphasis on management, marketing, accounting and finance.

**Term Offered:** Spring, Summer, Fall

## BMGT 1500 Workplace Communication And Presentations

[3 credit hours]

Covers all aspects of communicating in the workplace including oral, written and group communications. Specific subjects covered include composing agendas, conducting interviews and organizing meetings. Students will learn a computer graphics program and prepare a presentation.

**Term Offered:** Spring, Summer, Fall

## BMGT 1540 Organizational Behavior

[3 credit hours]

This course will address the impact of individual and group behavior on organizations. Topics covered include downsizing, stakeholder management, network organizations, participative management approaches and the quality movement.

**Term Offered:** Spring, Summer, Fall

## BMGT 2010 Workplace Management

[3 credit hours]

Covers issues dealing with managing a company in a predominantly service-oriented marketplace. Topics include training employees to deal with customers/clients, creating a customer-friendly business environment, problem-solving and strategic planning.

**Term Offered:** Spring, Summer, Fall

## BMGT 2020 Human Resource Development

[3 credit hours]

Explores the functions of Human Resource development that focus on training and employee development with special emphasis on improving the quality of work life.

**Term Offered:** Spring, Summer, Fall

## BMGT 2030 Supervision

[3 credit hours]

Explores the role of first-line managers in organizations with special emphasis on the responsibilities of supervisors. These responsibilities include delegation, communication, problem-solving, training and leading.

**Term Offered:** Spring, Fall

## BMGT 2050 Small Business Management

[3 credit hours]

Examines entrepreneurship with a special emphasis on formulating, developing and operating a small business.

**Term Offered:** Spring, Fall

## BMGT 2110 Managing In A Global Economy

[3 credit hours]

Students will examine one particular industry and learn the various economic factors associated with operating a business in an international setting.

**Term Offered:** Spring, Summer, Fall

## BMGT 2310 Legal Environment Of Business

[3 credit hours]

Carefully documents treatment of the legal framework of business. Emphasis on the international aspect of business law. Topics covered include contracts, bailments, agency relationships, legal forms of ownership and negotiable instruments.

**Term Offered:** Spring, Fall

## BMGT 2700 Managing Diversity In The Workplace

[3 credit hours]

This course offers a conceptual framework for understanding diversity and its effects on organizational behavior. It will also provide action tools for effective management of diversity in organizations.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## BMGT 2750 Cultural Communications In The Workplace

[3 credit hours]

Strategies taught to increase communication effectiveness among employees from differing cultural backgrounds. Students will also learn market-specific tips and taboos and develop strategies for negotiating across cultures.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## BMGT 2990 Independent Study

[1-3 credit hours]

Students will study a management-related subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

**Term Offered:** Spring, Summer, Fall

# CAREER AND TECHNICAL EDUCATION (CTE)

## CTE 4010 Teaching Occupational Skills

[3 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. This course addresses multiple topics critical to workforce education as they apply to the laboratory environment. Students are provided classroom and clinical experiences designed to assist the beginning teacher with basic laboratory instructional techniques and management strategies that integrate academic, occupational and employability skills in a contextual framework.

**Term Offered:** Summer

## CTE 4020 Occupational Safety & Liability

[3 credit hours]

This course is required for the Adult Education, Career Based Intervention, and Work-Site Teacher/Coordinator endorsements. Occupational health and safety hazards applicable to school, business, and industry, will be examined. Utilizing clinical and classroom experiences students will investigate: the rationale for safety training; strategies to minimize exposure and prevent injuries; specific topics, such as ergonomics, blood borne pathogens, air quality, sound, hazardous materials, back safety, substance abuse, violence in the workplace, etc.

**Term Offered:** Summer

## CTE 4030 Teaching Occupational Knowledge

[3 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. Designed as a co-requisite in the professional education series, this course addresses multiple topics critical to workforce education as they apply to the classroom environment. Students are provided classroom and clinical experiences designed to assist the beginning teacher with basic classroom instructional techniques and management strategies that integrate academic, occupational and employability skills in a contextual framework.

**Term Offered:** Summer

## CTE 4050 Methods Of Teaching Career And Technical Education I

[2 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. The pedagogical and management skills introduced in CTE 4010 are integrated in a contextual framework utilizing an actual laboratory situation. Learning styles; laboratory planning, instruction, technology, and management; integrated academics; performance assessment; safety and liability issues; employability and SCANS skills; community partnerships; school-based and work-site learning; etc. are the basis for student research, reflection, and inquiry

**Term Offered:** Fall

## CTE 4070 Methods Of Teaching Career And Technical Education II

[2 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. The pedagogical and management skills introduced in CTE 4030 are integrated in a contextual framework utilizing an actual classroom setting. Organizing curriculum; instructional planning, management, delivery and technology; learning theory; behavior management; motivation; integrated academics; authentic assessment; career-technical student organizations; etc. are the basis for student research, reflection, and inquiry.

**Term Offered:** Spring

## CTE 4110 Seminar for CTE Teachers

[3 credit hours]

The career-technical education teacher is an occupational professional who possesses the pedagogical knowledge and reflective decision making skills necessary to enter the teaching profession at multiple levels. In order to prepare individuals as career-technical instructors, components of the licensure program were developed and approved by the State Board of Education, to promote high professional standards to provide quality classroom teachers. The components are: a clear mission; operational goals; specific competencies of an assessment system.

**Term Offered:** Spring

## CTE 4140 Cooperative Education

[2 credit hours]

This course is required for the Career Based Intervention. The course is designed to present the basic fundamentals of establishing and operating a cooperative occupational program. Students investigate and develop operational procedures to address: student selection; assessing the quality of potential training stations; student placement; school-based learning; critical issues related to work-based learning; critical issues related to work-based learning; minor labor laws; partnering with parents, business, and labor; connecting activities; record keeping; evaluation techniques; etc.

**Term Offered:** Summer, Fall

## CTE 4160 Curriculum Development & Teaching Co-Operative Education

[3 credit hours]

This course is required for the Career Based Intervention. Designed as a study of cooperative education curriculum and instructional methods, the course includes the coordination of school-based instruction with on-the-job work-based experience. Learning styles of diverse students; instructional planning and delivery; classroom management; integrated academics; authentic assessment; safety and liability issues; employability and SCANS skills; community partnerships; school-based and work-site learning; etc. are the basis for student research, reflection, and inquiry.

**Term Offered:** Summer

## CTE 4900 Curriculum Construction

[3 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. A planned field experience will be completed in public school classrooms under the direction of university facilitated induction teams. The university faculty member, on-site teacher mentor, and local administrator will collaborate to assure the novice teacher maximizes his/her potential as an individual and member of an educational team. Students are provided a contextual framework to integrate theory and practice.

**Term Offered:** Fall

**CTE 4930 Supervised Teaching**

[3-8 credit hours]

This course is required for the Health Careers, Career-Technical Education and the six Career-Technical Licenses. A planned field experience will be completed in public school classrooms under the direction of university facilitated induction teams. The university faculty member, on-site teacher mentor, and local administrator will collaborate to assure the novice teacher maximizes his/her potential as an individual and member of an educational team. Students are provided a contextual framework to integrate theory and practice.

**Term Offered:** Spring, Fall

**CTE 4980 Problems In Career And Technical Education**

[1-5 credit hours]

A course developed around topics of interest and concern to inservice teachers. Stresses solution and resolution of educational problems occurring within selected districts.

**Term Offered:** Spring, Summer, Fall

**CTE 4990 Individual Study In Career And Technical Education For Undergraduate Students**

[1-3 credit hours]

Individual study is designed to provide the opportunity to work individually on professional problems under the direction of the faculty in career and technical education.

**Term Offered:** Spring, Summer, Fall

# CHEMICAL AND ENVIRONMENTAL ENGINEERING (CHEE)

## CHEE 1000 Orientation And Computing For Chemical Engineers [0-3 credit hours]

An introduction to the UT campus, campus resources, the College of Engineering and the Department of Chemical and Environmental Engineering. Primary emphasis is on engineering computing, data analysis and basic chemical engineering calculations.

**Term Offered:** Fall

## CHEE 1010 Professional Development [1 credit hour]

Social protocol and ethics in industry. Resume writing and interview skills are presented in preparation for the Co-op experience. Review of resource materials for technical and non-technical individual learning. Oral and written presentation techniques are emphasized.

**Prerequisites:** CHEE 1000 with a minimum grade of D-

**Term Offered:** Spring

## CHEE 2010 Mass And Energy Balances [3 credit hours]

Introduction to the principles and techniques used in chemical engineering. Basic concepts of mathematics, physics and chemistry are applied to solving problems involving stoichiometry, material balances and energy balances.

**Prerequisites:** CHEE 1000 with a minimum grade of D- and (MATH 1850 (may be taken concurrently) with a minimum grade of D- and CHEM 1230 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Spring

## CHEE 2110 Process Fluid Mechanics [3 credit hours]

A comprehensive introduction to process fluid mechanics. Topics include: hydrostatics, characteristics of laminar and turbulent flow, mechanical energy balance, flow through packed beds and fluidization of solids, design of pumping systems and piping networks and metering of fluids.

**Prerequisites:** CHEE 2010 with a minimum grade of D-

**Term Offered:** Spring

## CHEE 2230 Chemical Engineering Thermodynamics I [3 credit hours]

The principles of thermodynamics and their application to chemical engineering. Topics include states and properties of matter, the first and second law of thermodynamics and thermo-chemical effects.

**Prerequisites:** CHEE 2010 with a minimum grade of D- and MATH 1850 with a minimum grade of D-

**Term Offered:** Fall

## CHEE 2330 Chemical Engineering Thermodynamics II [3 credit hours]

Topics include properties of fluid mixtures, phase equilibria, chemical equilibria, power generation and refrigeration processes.

**Prerequisites:** CHEE 2230 with a minimum grade of D- and MATH 1860 with a minimum grade of D-

**Term Offered:** Spring, Summer

## CHEE 3030 Separation Processes [3 credit hours]

An introduction to equilibrium-based separation processes. Topics include distillation, extraction, leaching, drying and membrane separations. Preliminary equipment design calculations.

**Prerequisites:** CHEE 2330 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CHEE 3110 Process Heat Transfer [2 credit hours]

Fundamental equations of heat transfer. Fourier's law. Steady and unsteady thermal conduction. Heat transfer coefficients. Heat exchangers. Condensation and boiling. Forced and natural convection. Radiation, Kirchhoff's law and view factors.

**Prerequisites:** CHEE 2110 (may be taken concurrently) with a minimum grade of D- and CHEE 2230 with a minimum grade of D-

**Corequisites:** CHEE 2110

**Term Offered:** Spring

## CHEE 3120 Mass Transfer [3 credit hours]

Mass transfer and its application in chemical engineering separations. Diffusivity, mass transfer coefficients and Fick's Law. Applications in continuous and stagewise processes, including absorption, extraction and distillation.

**Prerequisites:** (CHEE 2110 with a minimum grade of D- and CHEE 3030 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Fall

## CHEE 3300 Reactor Engineering And Design [3 credit hours]

Fundamentals of chemical reaction engineering. Rate laws, kinetics and mechanisms of homogeneous and heterogeneous reactions. Analysis of reaction rate data. Design of industrial reactors.

**Prerequisites:** CHEE 2230 with a minimum grade of D-

**Term Offered:** Fall

## CHEE 3400 Process Dynamics And Control [3 credit hours]

An introduction to designing control systems for chemical engineering processes. Process stability and controller design and selection. Application of Laplace transforms, frequency response techniques and simulation software for open-loop and closed-loop analysis.

**Prerequisites:** CHEE 3300 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D- and CHEE 2110 with a minimum grade of D-

**Term Offered:** Fall

## CHEE 3940 Co-Op Work Experience [1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** CHEE 1010 with a minimum grade of D- and CHEE 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## CHEE 3950 Co-Op Experience [1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** CHEE 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CHEE 4010 Green Engineering Principles**

[3 credit hours]

The principles of chemical process analysis and design are introduced for the development of the green engineering processes. Common components of chemical processes are reviewed and quantitative analyses of process performance and economics developed. The impact of design variables on material and energy usage is demonstrated.

**Prerequisites:** CHEM 1240 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CHEE 4110 Green Engineering Applications**

[3 credit hours]

Applications of green engineering principles in the chemical industry are discussed. Metrics for comparing process options are introduced along with common techniques for improving process performance.

**Prerequisites:** CHEE 4010 with a minimum grade of D-

**Corequisites:** CHEE 4520

**Term Offered:** Spring, Fall

**CHEE 4120 Biofuels**

[3 credit hours]

The technical, economic, social, and political issues associated with energy consumption are discussed. The potential for biofuels to replace current energy sources is examined based on the historical evolution of the industry and current research activity

**Prerequisites:** CHEM 1230 with a minimum grade of D-

**Term Offered:** Spring

**CHEE 4410 New Separations**

[3 credit hours]

Introduction to and analysis of new separation techniques relevant to downstream processing of bioreactor products. Topics include new extraction and adsorption methods, chromatography techniques, ultrafiltration and electrokinetic methods such as electrophoresis and isoelectric focusing.

**Prerequisites:** (CHEE 3110 with a minimum grade of D- and CHEE 3120 with a minimum grade of D- and CHEE 3030 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CHEE 4500 Chemical Engineering Laboratory I**

[2 credit hours]

An experimental study of the design and performance of selected chemical engineering processes and equipment. Analysis of data, design of experiments and laboratory reports are emphasized.

**Prerequisites:** (CHEE 2110 with a minimum grade of D- and CHEE 3030 with a minimum grade of D- and CHEE 3110 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CHEE 4520 Chemical Process Economics And Design**

[3 credit hours]

Chemical equipment and process design. Introduction to simulation and flow-sheeting techniques and software. Topics include plant safety and pollution prevention, market analysis, cost estimating, decision making and cash flow analysis.

**Prerequisites:** (CHEE 2110 with a minimum grade of D- and CHEE 2330 with a minimum grade of D- and CHEE 3030 with a minimum grade of D-) and CHEE 3110 with a minimum grade of D-

**Term Offered:** Spring, Summer

**CHEE 4540 Chemical Process Simulation And Design**

[3 credit hours]

Application of chemical engineering fundamentals and the use of process simulators in the synthesis of chemical processes. Use of cost factors and environmental considerations in process decisions. The solution of a comprehensive case study and the preparation of a formal report are required.

**Prerequisites:** CHEE 3120 with a minimum grade of D- and CHEE 4520 with a minimum grade of D- and CHEE 3300 with a minimum grade of D-

**Term Offered:** Fall

**CHEE 4550 Chemical Engineering Laboratory II**

[2 credit hours]

An experimental study of the design and performance of selected chemical engineering process equipment, focusing on heat and mass transfer and process control. Design of experiments, analysis of data and presentation techniques are emphasized.

**Prerequisites:** (CHEE 3300 (may be taken concurrently) with a minimum grade of D- and CHEE 3120 (may be taken concurrently) with a minimum grade of D- and CHEE 3400 (may be taken concurrently) with a minimum grade of D- and CHEE 4500 (may be taken concurrently) with a minimum grade of D-)

**Term Offered:** Fall

**CHEE 4800 Polymer Science And Engineering**

[3 credit hours]

Polymerization processes, characterization, structure and properties of polymers, processing and engineering applications of the major polymer types.

**Term Offered:** Fall

**CHEE 4960 Senior Honors Thesis**

[3 credit hours]

Independent research under the guidance of a faculty member, requiring an oral report and a written thesis upon completion of work.

**Term Offered:** Spring, Summer, Fall

**CHEE 4980 Special Topics In Chemical Engineering**

[1-4 credit hours]

Special topics of interest to chemical engineers - upper division.

**Term Offered:** Spring, Summer, Fall

**CHEE 4990 Independent Studies In Chemical Engineering**

[1-4 credit hours]

Independent studies in chemical engineering - upper division.

**Term Offered:** Spring, Summer, Fall



# CHEMISTRY (CHEM)

## CHEM 1090 Elementary Chemistry

[0-3 credit hours]

For students who major in science, engineering or other fields which require chemistry as a prerequisite subject who have not had a previous course in chemistry and whose preparation is not sufficient to begin General Chemistry (CHEM 1230).

**Prerequisites:** MATH 1200 with a minimum grade of C or MATH 1320 with a minimum grade of C or MATH 1340 with a minimum grade of C or MATH 1750 with a minimum grade of C or MATH 1830 with a minimum grade of C or MATH 1850 with a minimum grade of C or ACT Math with a score of 20 or Aleks Math Placement Test with a score of 046 or Math - Coll Algebra Placement with a score of 10 or SAT Mathematics with a score of 480 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Summer, Fall

## CHEM 1100 Chemistry And Society

[3 credit hours]

An introduction to basic chemistry and a survey of the impact that chemistry has on society. Topics include: power, energy, and fuels; water and pollution; soaps and detergents; nutrition; poisons and toxins; plastics and polymers; drugs.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## CHEM 1110 Elementary Chemistry for the Health Sciences

[3 credit hours]

The study of chemistry for students that are studying nursing or other allied health related fields who have not had a previous course in chemistry or whose preparation in chemistry is not sufficient to begin Chemistry for the Health Sciences (CHEM 1120).

**Prerequisites:** ACT Math with a score of 20 or Aleks Math Placement Test with a score of 046 or Math - Coll Algebra Placement with a score of 10 or MATH 1200 with a minimum grade of C or MATH 1320 with a minimum grade of C or MATH 1340 with a minimum grade of C or MATH 1750 with a minimum grade of C or MATH 1830 with a minimum grade of C or MATH 1850 with a minimum grade of C

**Term Offered:** Spring, Fall

## CHEM 1120 Chemistry For Health Sciences

[4 credit hours]

The study of chemistry for students majoring in nursing and other health-related fields. This course includes general, organic and biochemical topics in condensed form. The impact of chemistry in health fields will be emphasized.

**Prerequisites:** CHEM 1110 with a minimum grade of C or Health Sciences Chemistry Test with a score of 34

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## CHEM 1150 Chemistry And Society Laboratory

[1 credit hour]

Laboratory introduction to the concepts of chemistry to accompany Chemistry 1100. Demonstrations by laboratory experiments of lessons developed in the accompanying lecture course. Two hours of laboratory per week.

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

## CHEM 1200 Problem Solving In General Chemistry

[1 credit hour]

Problem solving and skill development for students enrolled in CHEM 1230 who obtained a satisfactory score on the chemistry placement test but need additional assistance in selected topics. May be taken only as P/NC. Pre-requisites: CHEM 1090 with a minimum grade of C or better OR pass placement exam.

**Prerequisites:** CHEM 1090 with a minimum grade of C or Aleks Chem Placement Highest with a score of 50 or Chemistry Placement with a score of 17

**Term Offered:** Spring, Fall

## CHEM 1230 General Chemistry I

[0-4 credit hours]

An introduction to atomic structure, chemical bonding, kinetic-molecular theory, energy relationships and structural concepts. This sequence is for students who major in science, engineering or other fields which require chemistry as a prerequisite subject. Three hours lecture and one hour discussion per week.

**Prerequisites:** CHEM 1090 with a minimum grade of C or Chemistry Placement with a score of 17 or Aleks Chem Placement Highest with a score of 50

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## CHEM 1240 General Chemistry II

[0-4 credit hours]

An introduction to solutions, equilibrium, acid-base theory, energy relationships and structural concepts. This sequence is for students who major in science, engineering or other fields which require chemistry as a prerequisite subject. Three hours lecture and one hour discussion per week.

**Prerequisites:** CHEM 1230 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## CHEM 1280 General Chemistry Lab I

[1 credit hour]

Experiments over topics covered in CHEM 1230 lectures. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. Three hours of laboratory per week.

**Prerequisites:** CHEM 1230 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## CHEM 1290 General Chemistry Lab II

[1 credit hour]

Experiments over topics covered in CHEM 1240 lectures. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. Three hours of laboratory per week.

**Prerequisites:** CHEM 1240 (may be taken concurrently) with a minimum grade of C and CHEM 1280 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**CHEM 1910 Survey Of Research**

[1 credit hour]

Survey of current research areas at the frontiers of chemistry, including topics that cross the boundaries with other disciplines. May be taken only as P/NC.

**Term Offered:** Spring

**CHEM 2410 Organic Chemistry I**

[0-3 credit hours]

Study of structure and reactions of organic compounds. Three hours lecture per week.

**Prerequisites:** CHEM 1240 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2420 Organic Chemistry II**

[3 credit hours]

Study of structure and reactions of organic compounds. Three hours lecture per week.

**Prerequisites:** CHEM 2410 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2430 Recitation For Organic Chemistry I**

[1 credit hour]

Optional recitation sections that discuss concepts and solve practice questions in CHEM2410.

**Prerequisites:** CHEM 1240 with a minimum grade of C-

**Term Offered:** Spring, Fall

**CHEM 2440 Recitation For Organic Chemistry II**

[1 credit hour]

Optional recitation sections that discuss concepts and solve practice questions in CHEM2420.

**Prerequisites:** CHEM 2410 with a minimum grade of C-

**Term Offered:** Spring, Fall

**CHEM 2460 Organic Chemistry Laboratory I for Non-Majors**

[1 credit hour]

Practice of organic laboratory techniques. Four hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. This course is for students in majors other than chemistry or biochemistry. Chemistry (BS, BA) or biochemistry majors (BS) should take CHEM 2480.

**Prerequisites:** (CHEM 1240 with a minimum grade of C- and CHEM 1290 with a minimum grade of C-) and CHEM 2410 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2470 Organic Chemistry Laboratory II for Non-Majors**

[1 credit hour]

Practice of organic laboratory techniques. Four hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting. This course is for students in majors other than chemistry or biochemistry. Chemistry (BS, BA) or biochemistry majors (BS) should take CHEM 2490.

**Prerequisites:** CHEM 2460 with a minimum grade of C- and CHEM 2420 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2480 Organic Chemistry Laboratory I for Majors: Separations and Elementary Synthesis**

[0-2 credit hours]

For Chemistry/Biochemistry majors. Introduction to theory and laboratory practice in modern methods of physical separation techniques, and introduction to organic synthetic methods. Special emphasis is made on spectroscopic techniques used in the organic laboratory. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** CHEM 1240 with a minimum grade of C- and CHEM 1290 with a minimum grade of C- and CHEM 2410 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 2490 Organic Chemistry Laboratory II for Majors: Synthesis and Identification**

[2 credit hours]

For Chemistry/Biochemistry majors. Application of synthetic methods to elementary organic synthesis with special emphasis on instrumental approaches to problem solving in organic chemistry. Approved chemistry safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 2410 with a minimum grade of C- and CHEM 2480 with a minimum grade of C-) and CHEM 2420 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring

**CHEM 2500 Instrumental Methods For Organic Chemistry**

[0-2 credit hours]

A bridge course for students wishing to major in chemistry or biochemistry at the B.S. level after taking the organic non-major lab sequence. Introduction to major instrumental methods employed in the organic laboratory. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 2470 with a minimum grade of C-)

**Term Offered:** Spring, Summer, Fall

**CHEM 2910 Undergraduate Research I**

[1-3 credit hours]

An introduction to research under the guidance of a faculty member. May be repeated. A maximum accumulated credit of 4 hours in 2910 and total of 10 hours in 2910, 3910, 4910 may be applied toward a degree. May be taken only as P/NC.

**Prerequisites:** CHEM 1240 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 2920 Readings In Chemistry**

[1-2 credit hours]

Readings from the literature of chemistry. May be taken only as P/NC.

**Term Offered:** Spring, Summer, Fall

**CHEM 3310 Analytical Chemistry**

[2 credit hours]

Theory and applications of chemical equilibria to gravimetric, volumetric and separation techniques. Emphasis on the quantitative aspects of analytical chemistry. Two hours lecture per week.

**Prerequisites:** CHEM 1240 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3360 Analytical Chemistry Laboratory**

[2 credit hours]

Practice of quantitative analytical methods of analysis. Six hours laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 3310 with a minimum grade of C- and CHEM 1290 with a minimum grade of C-)

**Term Offered:** Spring

**CHEM 3510 Biochemistry I**

[3 credit hours]

The chemistry of living systems, beginning with the structures and molecular and biological functions of proteins, nucleic acids, carbohydrates and lipids. Other topics include enzyme kinetics and mechanism, biological membranes and membrane transport, and signal transduction.

**Prerequisites:** CHEM 2420 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3520 Biochemistry II**

[3 credit hours]

Continuing study of the chemistry of living systems. Topics include the metabolism of carbohydrates, lipids and amino acids, energy transductions and photosynthesis, mechanisms and regulation of nucleic acid and protein synthesis.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3560 Biochemistry Laboratory**

[2 credit hours]

Practice of biochemistry laboratory techniques. Six hours of laboratory per week.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3610 Inorganic Chemistry I**

[3 credit hours]

The application of modern theories to the elements and their inorganic compounds. Physical chemical principles are used throughout.

**Prerequisites:** CHEM 2420 with a minimum grade of C- or CHEE 2230 with a minimum grade of C- and CHEE 2330 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3710 Physical Chemistry For The Biosciences I**

[3 credit hours]

Physical and mathematical laws applied to chemistry with examples from biologically important processes. No credit given if Chemistry 3730-3740 are taken.

**Prerequisites:** (MATH 1860 with a minimum grade of D- and PHYS 2070 with a minimum grade of D- and PHYS 2080 with a minimum grade of D-) or (MATH 1860 with a minimum grade of D- and PHYS 2130 with a minimum grade of D-) or (MATH 1860 with a minimum grade of D- and PHYS 2140 with a minimum grade of D-)

**Term Offered:** Fall

**CHEM 3712 Recitation for Chem 3710**

[1 credit hour]

Recitation section that discusses concepts and solves practice questions for CHEM 3710. Must be taken simultaneously with CHEM 3710. Not for major/minor credit.

**Prerequisites:** CHEM 2420 with a minimum grade of D- and CHEM 3710 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Fall

**CHEM 3720 Physical Chemistry For The Biosciences II**

[3 credit hours]

Physical and mathematical laws applied to chemistry with examples from biologically important processes. No credit given if Chemistry 3730-3740 are taken.

**Prerequisites:** CHEM 3710 with a minimum grade of D-

**Term Offered:** Spring

**CHEM 3722 Recitation For Chem 3720**

[1 credit hour]

Optional recitation section that discusses concepts and solves practice questions for CHEM 3720. Must be taken simultaneously with CHEM 3720. Not for major/minor credit.

**Prerequisites:** CHEM 3710 with a minimum grade of C- and CHEM 3720 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3730 Physical Chemistry I**

[3 credit hours]

Fundamental theories and basic laws of chemistry with emphasis on their mathematical development. Thermodynamics, equilibrium, electrochemistry, classical chemical kinetics.

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 2470 with a minimum grade of C- or CHEM 2490 with a minimum grade of C-) and MATH 2850 with a minimum grade of C- and PHYS 2140 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3732 Recitation for Chem 3730**

[1 credit hour]

Optional recitation section that discusses concepts and solves practice questions for CHEM 3730. Must be taken simultaneously with CHEM 3730, Physical Chemistry I. Not for major/minor credit.

**Prerequisites:** CHEM 2420 with a minimum grade of C- and CHEM 3730 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 3740 Physical Chemistry II**

[3 credit hours]

Fundamental theories and basic laws of chemistry with emphasis on their mathematical development. Structure of matter, statistical and quantum mechanics, reaction dynamics, spectroscopy.

**Prerequisites:** CHEM 3730 with a minimum grade of C- or CHEE 2230 with a minimum grade of C- and CHEE 2330 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3742 Recitation For Chem 3740**

[1 credit hour]

Optional recitation section that discusses concepts and solves practice questions for CHEM 3740. Must be taken simultaneously with CHEM 3740, Physical Chemistry II. Not for major/minor credit.

**Prerequisites:** CHEM 3730 with a minimum grade of C- and CHEM 3740 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring

**CHEM 3810 CHEMISTRY OF SUSTAINABLE ENERGY RESOURCES**

[3 credit hours]

Application of the principles of chemistry to understand the issues related to implementing and optimizing a sustainable supply of energy.

**Prerequisites:** CHEM 1240 with a minimum grade of C- and CHEM 1290 with a minimum grade of C- and PHYS 3400 with a minimum grade of C-

**Term Offered:** Spring, Fall

**CHEM 3860 Advanced Laboratory I**

[0-2 credit hours]

Laboratory experiments and techniques relating to subjects developed in CHEM 3710, 3730, or 4570. Three-hour laboratory and one-hour discussion per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 2470 with a minimum grade of C-) or CHEM 2490 with a minimum grade of C- and (CHEM 3710 (may be taken concurrently) with a minimum grade of C- or CHEM 3730 (may be taken concurrently) with a minimum grade of C- or CHEM 4570 (may be taken concurrently) with a minimum grade of C-)

**Term Offered:** Fall

**CHEM 3870 Advanced Laboratory II**

[2 credit hours]

Laboratory experiments and techniques relating to subjects developed in 3710/3720, 3730/3740. Six hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** CHEM 3860 with a minimum grade of C- and (CHEM 3740 (may be taken concurrently) with a minimum grade of C- or CHEM 3720 (may be taken concurrently) with a minimum grade of C-)

**Term Offered:** Spring

**CHEM 3910 Undergraduate Research II**

[1-3 credit hours]

Research under the guidance of a faculty member. A written report is required. May be repeated. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied toward a degree. May be taken only as P/NC.

**Prerequisites:** CHEM 2420 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 3920 Readings In Chemistry II**

[1-2 credit hours]

Readings from the literature of chemistry. May be taken only as P/NC.

**Term Offered:** Spring, Summer, Fall

**CHEM 4200 Green Chemistry**

[3 credit hours]

Introduction to the principles and applications of green chemistry, including industrial applications, atom economy, safer solvent substitutions, chemical alternatives assessment, green chemistry metrics, basic life cycle assessment, and an introduction to chemical toxicology. Students need CHEM 2420 or permission of instructor.

**Prerequisites:** CHEM 2420 with a minimum grade of D-

**CHEM 4210 Environmental Chemistry**

[3 credit hours]

This course will focus on the chemistry of air, water, and soil with specific emphasis on the effects of human made chemical products and byproducts on the environment. Connections with green chemistry will be highlighted. Students need CHEM 2420 or permission of instructor.

**Prerequisites:** CHEM 2420 with a minimum grade of D-

**CHEM 4300 Instrumental Analysis**

[2 credit hours]

An introduction to modern chemical instrumentation and applications to chemical analysis. Topics include electrical, magnetic, nuclear and spectroscopic instrumentation.

**Prerequisites:** (CHEM 3310 with a minimum grade of C- and CHEM 3360 with a minimum grade of C-) and CHEM 3710 (may be taken concurrently) with a minimum grade of C- or CHEM 3730 (may be taken concurrently) with a minimum grade of C- or CHEM 4570 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4305 Advanced Analytical Chemistry**

[4 credit hours]

An overview of new techniques in analytical chemistry. Topics include sample preparation and sampling, spectroscopic, separation, electrochemical, surface characterization and thermal methods.

**Prerequisites:** CHEM 3310 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4310 Separation Methods**

[3 credit hours]

The theory, design and application of separation methods. Topics include extraction techniques, gas, liquid, and supercritical fluid chromatography, affinity and chiral separation, and capillary electrophoresis.

**Prerequisites:** CHEM 3310 with a minimum grade of C or CHEM 4300 with a minimum grade of C

**Term Offered:** Spring

**CHEM 4320 Electrochemistry**

[4 credit hours]

A fundamental study of electrochemical concepts, methods, instrumentation and applications.

**Prerequisites:** CHEM 4300 with a minimum grade of C

**Term Offered:** Spring



**CHEM 4330 Spectroscopic Methods**

[4 credit hours]

A comprehensive study of theory and instrumentation. Applications of spectroscopic methods including spectral interpretation. Topics include a study of absorption, emission, Raman, NMR, ESR, mass spectrometry, and related subjects. Important methodology and strategy in organic synthesis including disconnection and retrosynthetic analysis.

**Prerequisites:** CHEM 2410 with a minimum grade of C

**Term Offered:** Spring

**CHEM 4350 Separation Methods Laboratory**

[1 credit hour]

Experiments covering topics discussed in CHEM 4310 lectures. Five hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard 287.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** (CHEM 3310 with a minimum grade of C and CHEM 3360 with a minimum grade of C) or (CHEM 4300 with a minimum grade of C and CHEM 4880 with a minimum grade of C)

**Corequisites:** CHEM 4310

**Term Offered:** Spring

**CHEM 4400 Advanced Organic Chemistry**

[4 credit hours]

This course deals with chemical structure and reactivity correlations applied to the study of organic reaction mechanisms; stereochemical features including conformation and stereoelectronic effects; reaction dynamics, isotope effects and molecular orbital theory applied to pericyclic and photochemical reactions; and special reactive intermediates including carbenes, carbanions, and free radicals.

**Prerequisites:** CHEM 2420 with a minimum grade of B

**Term Offered:** Fall

**CHEM 4410 Organic Synthesis**

[4 credit hours]

Important methodology and strategy in organic synthesis including disconnection and retrosynthetic analysis.

**Prerequisites:** CHEM 2420 with a minimum grade of B

**Term Offered:** Spring

**CHEM 4430 Medicinal Chemistry**

[4 credit hours]

Qualitative and quantitative aspects of the design of new therapeutic agents are discussed. Approaches to the design of drugs and new therapeutic modalities directed at enzymes, receptors, membrane transport proteins and nucleic acids will be examined.

**Term Offered:** Fall

**CHEM 4500 Advanced Biological Chemistry**

[4 credit hours]

The chemistry of cellular and molecular transformations in biochemical systems. Molecular structure of proteins, nucleic acids and membranes. Metabolism and biosynthesis of carbohydrates, amino acids and lipids; gene regulation and replication.

**Prerequisites:** CHEM 3520 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4510 Protein Chemistry**

[4 credit hours]

A detailed analysis of the structure and function of proteins. Current methodology for the analysis of structure, the basis for molecular associations and relationships between structure and biological function.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4520 Enzymology**

[4 credit hours]

Survey of current methods to study enzyme-catalyzed reactions, and application to examples from major enzyme groups. Current topics in enzymology include abzymes and ribozymes, artificial enzymes, and enzymes, and enzyme engineering.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4530 Nucleic Acid Chemistry**

[4 credit hours]

The structural and chemical properties of nucleic acids and the resulting biological consequences. Topics include: 3D structures, conformation, protein/nucleic acid interactions, physical properties and chemical reactions, mutagenesis, damage/repair, and recombination.

**Prerequisites:** CHEM 3510 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4540 Macromolecular Crystallography**

[2 credit hours]

Fundamental theory and practical application of X-ray diffraction to macromolecular structure determination, including protein crystallization and manipulation, data collection and reduction, phase solution, electron density interpretation, structural refinement.

**Prerequisites:** CHEM 4850 with a minimum grade of D-

**CHEM 4550 Practical Protein Crystallography**

[2 credit hours]

Hands-on training in protein crystallography. Laboratory projects include: protein crystallization, crystal manipulation and mounting, X-ray diffraction data collection, data reduction, structure solution, electron density interpretation, and refinement.

**Prerequisites:** CHEM 4850 with a minimum grade of D-

**CHEM 4560 Biophysical Chemistry Laboratory - WAC**

[2 credit hours]

Data Analysis of modern biophysical measurements related to the topics discussed in CHEM 4570 (Biophysical Chemistry), an introduction to scientific writing, and the preparation of scientific manuscripts. Six hours of laboratory per week.

**Prerequisites:** CHEM 3520 with a minimum grade of D-

**Corequisites:** CHEM 4570

**CHEM 4570 Biophysical Chemistry**

[4 credit hours]

Principles and applications of physical chemistry as applied to biological macromolecules (i.e., proteins and nucleic acids in solution), including thermodynamics, kinetics and spectroscopy of macromolecular interactions.

**Prerequisites:** PHYS 2080 with a minimum grade of C- and CHEM 3520 with a minimum grade of C-

**Term Offered:** Fall



**CHEM 4580 Bioinorganic Chemistry**

[4 credit hours]

Survey of biologically important metals and metal-ligand complexes, and the role of metal ions in proteins, metal ion transport and regulation, and metals in medicine.

**Prerequisites:** CHEM 3520 with a minimum grade of C-

**CHEM 4600 Physical Inorganic Chemistry**

[4 credit hours]

Symmetry, bonding theories, magnetism, and spectroscopic characterization of inorganic compounds are described. Coverage of spectroscopic techniques such as NMR, EPR, UV/VIS, IR, AND Mossbauer focus on applications to inorganic systems.

**Prerequisites:** CHEM 3610 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4610 Chemistry of the Transition and Post-Transition Elements**

[4 credit hours]

The organometallic chemistry of the transition metals, lanthanides and actinides is described. Synthesis, structure, bonding, and reactivity are considered. Applications in catalysis, bioinorganic, and materials chemistry are discussed.

**Prerequisites:** CHEM 3610 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4620 Inorganic Chemistry II**

[3 credit hours]

The application of modern theories to the elements and their inorganic compounds-advanced topics. Physical chemical principles are used throughout.

**Prerequisites:** CHEM 3610 with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4625 Chemistry of Main Group Elements**

[4 credit hours]

The inorganic and organometallic chemistry of main group elements is described. Synthesis, structure, bonding, and reactivity are considered. The use of main group reagents in synthesis, catalysis, and materials chemistry are discussed.

**Prerequisites:** CHEM 3610 with a minimum grade of C

**Term Offered:** Spring

**CHEM 4700 Advanced Physical Chemistry**

[4 credit hours]

Chemical systems and processes in the context of classical equilibrium thermodynamics. It introduces non-equilibrium and statistical thermodynamics to elucidate chemical changes and the connection between molecular and macroscopic system properties.

**Prerequisites:** CHEM 3740 with a minimum grade of C- or CHEM 3730 with a minimum grade of C-

**CHEM 4710 Quantum Chemistry and Spectroscopy**

[4 credit hours]

Fundamental principles of quantum mechanics and their application to model systems, atoms and molecules; Introduction to molecular spectroscopy.

**Prerequisites:** CHEM 3740 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4720 Modern Topics in Physical Chemistry**

[4 credit hours]

Advanced topics of current interest in physical chemistry. Examples of topics include nanomaterials science, spectroscopic techniques, or molecular modeling.

**Prerequisites:** CHEM 3740 with a minimum grade of C- or CHEM 3730 with a minimum grade of C-

**Term Offered:** Spring

**CHEM 4800 Advanced Materials Chemistry**

[4 credit hours]

Introduction to important classes of solids, including conductors, magnetic materials, ferroelectrics, glasses, microporous materials, organic solids. Traditional and novel synthetic approaches, structure/property relationships, and characterization methods specific to solids.

**Prerequisites:** CHEM 3740 with a minimum grade of C

**Term Offered:** Spring

**CHEM 4810 Materials Science I**

[4 credit hours]

A generic materials science approach to the study of crystalline structure and defects (point, line and planar) in crystalline materials. The mechanisms and kinetics of diffusion in the condensed state.

**Term Offered:** Fall

**CHEM 4820 Materials Science II**

[4 credit hours]

A materials science approach to the thermodynamics of condensed state equilibria. Phase transformation kinetics.

**Term Offered:** Spring

**CHEM 4850 X-Ray Crystallography**

[4 credit hours]

Theory and practice of structure determination by X-ray diffraction. Basics of symmetry, diffraction, and reciprocal space. Hands-on introduction to single-crystal and powder methods.

**Prerequisites:** MATH 1840 with a minimum grade of C or MATH 1860 with a minimum grade of C

**Term Offered:** Fall

**CHEM 4880 Advanced Laboratory III**

[2 credit hours]

Laboratory experiments and techniques relating to subjects developed in CHEM 4300. Six hours of laboratory per week. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 must be worn by every student during every laboratory class meeting.

**Prerequisites:** CHEM 3860 with a minimum grade of C- and CHEM 4300 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Fall

**CHEM 4910 Undergraduate Research III**

[1-3 credit hours]

Thesis level research under the guidance of a faculty member. May be repeated. A minimum of three hours and an acceptable thesis required for credit toward the B.S. major. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied toward a degree. A written report is required. May be taken only as P/NC. Prerequisite: GPA (overall and in chemistry courses) above 2.5 and permission of department  
Corequisite: CHEM 3740 or 4570

**Prerequisites:** CHEM 3740 (may be taken concurrently) with a minimum grade of C- or CHEM 4570 (may be taken concurrently) with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**CHEM 4920 Readings In Chemistry III**

[1-2 credit hours]

Readings from the literature of chemistry. May be taken only as P/NC.

**Term Offered:** Spring, Summer, Fall

**CHEM 4980 Special Topics In Chemistry**

[2-4 credit hours]

An advanced course for chemistry majors in an important area of chemistry. Consult the undergraduate adviser for details. Course may be repeated for credit under different specialty numbers (topics).

**Prerequisites:** (CHEM 2420 with a minimum grade of C- and CHEM 3740 with a minimum grade of C-)

**Term Offered:** Spring, Fall

# CHINESE (CHIN)

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**CHIN 1090 Chinese Culture**

[3 credit hours]

Through a systematic study of Chinese values and patterns of behaviors, this course builds students' proficiency in cultural competence of Chinese.

**Term Offered:** Spring, Fall

**CHIN 1110 Elementary Chinese I**

[4 credit hours]

An introduction to Chinese language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Term Offered:** Fall

**CHIN 1120 Elementary Chinese II**

[4 credit hours]

An introduction to Chinese language and culture through listening, speaking, reading and writing. Laboratory practice required. Prerequisite: CHIN 1110 or satisfactory score on placement test.

**Prerequisites:** CHIN 1110 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Arts & Humanities

**CHIN 2140 Intermediate Chinese I**

[3 credit hours]

**CHIN 2150 Intermediate Chinese II**

[3 credit hours]

**CHIN 3980 Special topics in Chinese**

[0-6 credit hours]

Study of a selected topic in Chinese language, literature or culture. May be repeated when topic varies.

# CIVIL ENGINEERING (CIVE)

## CIVE 1000 Freshman Civil Engineering Experience

[0-1 credit hours]

Computer literacy, report writing, word processing, table creation, equation, equation writing, data manipulation, data graphical plotting. Introduction to various disciplines in Civil Engineering, Structural, Geotechnical, Transportation, Environmental. Practice in engineering problem solving process.

**Term Offered:** Fall

## CIVE 1100 Civil Engineering Measurements

[0-3 credit hours]

Study of graphical representations of engineering structures and systems and application by hand drawing and computer aided techniques. Instruments and methods for linear and angular measurements. Error theory and propagation. Familiarization with geographical information systems.

**Corequisites:** CIVE 1110

**Term Offered:** Spring, Fall

## CIVE 1110 Computer Aided Drafting for Civil Engineers

[1 credit hour]

Study of graphical representation of engineering structures and systems and application by hand-drawing and computer aided techniques.

**Corequisites:** CIVE 1100

**Term Offered:** Spring, Fall

## CIVE 1150 Engineering Mechanics: Statics

[3 credit hours]

Study of coplanar statics of particles, vector addition, resultant components, equilibrium, free body diagrams, equivalent force systems, vector products, scalar products, 2 & 3 dimensional equilibrium of rigid bodies, analysis of machines, pulleys, trusses. Centroids, moments of inertia, shear and bending moment diagrams.

**Prerequisites:** (MATH 1850 with a minimum grade of D- and PHYS 2130 with a minimum grade of D-) or (MATH 1920 with a minimum grade of D- and PHYS 2130 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## CIVE 1160 Engineering Mechanics: Strength Of Materials

[3 credit hours]

Material properties. Axially loaded members, including eccentric loads and thin wall pressure vessels. Axial load applications: Stress-Strain relationships, Stress & Strain transformations. Torsion: solid sections, circular sections. Torsional load applications: Combined axial and torsion stress. Beams: shear and bending moment diagrams, bending stress, deflection. Beam load applications: Combined shear, torsion and bending stress. Buckling of long columns.

**Prerequisites:** CIVE 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## CIVE 1170 Fluid Mechanics For Civil Engineers

[3 credit hours]

Fundamental concepts of fluid mechanics. Use of hydrostatics, continuity, momentum and energy equations to solve fluid problems applied to pipe flow, open channel flow and boundary layer flow. Introduction to turbo machinery.

**Prerequisites:** PHYS 2130 with a minimum grade of D-

**Term Offered:** Spring

## CIVE 2000 Professional Development

[1 credit hour]

Basic concepts of career planning, co-op performance expectations, necessary skills for maximizing learning from experiences and realities of the professional community.

**Prerequisites:** CIVE 1000 with a minimum grade of D-

**Term Offered:** Spring

## CIVE 2110 Civil Engineering Materials With Laboratory

[0-3 credit hours]

Introduction to properties of aggregates, Portland cement, concrete, steel, glass and bituminous mixtures. Mix designs of cement and asphalt concrete and standard test procedures for strength, workability, serviceability and durability.

**Prerequisites:** CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CIVE 2550 Sustainability Problem Solving

[1 credit hour]

Teams of students work as part of an enterprise to address real-world engineering design projects or problems. Develops group problem-solving skills. Stresses interpersonal, project management, and action planning skills. Frames the problem from a systems and sustainability perspective including the technical, social, economic, and environmental dimensions and solutions of the problem. Students have the option to start a new enterprise or join an existing one from previous cohorts. This course may be repeated for credit.

**Term Offered:** Spring, Summer, Fall

## CIVE 2990 Individual Study In Civil Engineering

[1-3 credit hours]

An opportunity for qualified underclassmen to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.

**Term Offered:** Summer, Fall

## CIVE 3120 Civil Engineering Systems Analysis

[3 credit hours]

Systems Approach, optimization by differential calculus techniques, linear programming, transportation and assignment problems, management of construction projects, critical path method, PERT and decision analysis.

**Prerequisites:** MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CIVE 3210 Soil Mechanics

[0-3 credit hours]

A study of soil as an engineering material. Geologic origins, physical properties, movement of water through soil, soil stresses, consolidation, shear strength. Engineering properties testing of soils in laboratory.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and CIVE 1170 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CIVE 3220 Foundation Engineering**

[3 credit hours]

Application of soil mechanics principles to design for problems encountered in excavations, embankments, foundations, retaining structures, abutments, slope stability. Evaluation of the ability of soil to function in various capacities.

**Prerequisites:** CIVE 3210 with a minimum grade of D-

**Term Offered:** Summer

**CIVE 3310 Structural Analysis**

[3 credit hours]

Analysis of statically determinate structures; analysis of simple and compound trusses, beams and frames; introduction to indeterminate structures; slope deflection and moment distribution. Introduction to computer applications.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and MATH 1890 with a minimum grade of D- or MATH 2890 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CIVE 3410 Steel Design I**

[3 credit hours]

An introduction to the principles underlying design of axial tension members, axial compression members, beams, columns and base plates. Also includes welded and bolted connections.

**Prerequisites:** CIVE 3310 with a minimum grade of D-

**Term Offered:** Summer

**CIVE 3420 Reinforced Concrete Design I**

[3 credit hours]

Introduction to principles and underlying design of basic structural beams, columns, one-way slabs in reinforced concrete. Shear reinforcement.

**Prerequisites:** CIVE 3310 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 3510 Transportation Engineering I**

[3 credit hours]

To provide an overview of transportation systems and operating characteristics of various highway modes. Concept of land use/transportation interaction. Considerations of vehicle and human characteristics in design of highway elements. Introduction to highway capacity and traffic control devices. Transportation planning process leading to local area traffic management with introduction to transportation system management and intelligent transportation systems.

**Prerequisites:** (CIVE 1100 with a minimum grade of D- and MIME 2300 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 3520 Transportation Engineering II**

[3 credit hours]

Survey of various modes of transport with emphasis on service provided by each and facilities required. Introduction to physical and practical aspects of design of transport facilities including drainage, pavements, railroads, ports and harbors, pipelines and transportation terminals.

**Prerequisites:** (CIVE 3510 with a minimum grade of D- and CIVE 3210 with a minimum grade of D- and CIVE 2110 with a minimum grade of D-)

**Term Offered:** Summer

**CIVE 3610 Water Supply And Treatment**

[0-3 credit hours]

This course includes lecture, laboratory exercises and a team-based design project. The topics covered will include water quality, water supply, design of the physical and chemical treatment processes, water distribution systems and contemporary issues related to drinking water.

**Prerequisites:** CIVE 1170 with a minimum grade of D-

**Term Offered:** Fall

**CIVE 3620 Air Pollution Engineering I**

[3 credit hours]

Introduction to sources of air pollution, basic meteorological processes, air quality modeling, technology for air pollution control, odor control and noise pollution. Introduction to health effects of air pollutants, risk assessment and global atmospheric change. The students are required to use the USEPA programs for stack design and computations for ground level concentrations.

**Prerequisites:** CIVE 1170 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 3630 Wastewater Engineering**

[3 credit hours]

This course is focused on wastewater engineering processes. The class format may include lectures, laboratory and field exercises, problem sessions, and team-based design work. The topics covered will include wastewater characterization, collection, treatment process design, discharge, as well as stormwater management and modeling.

**Prerequisites:** CIVE 1170 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 3720 Boundary Surveying**

[3 credit hours]

Analysis of evidence and procedures for boundary location, Researching local survey records, and Platting and Subdivision Design. Basic legal principles for boundary surveying. Evaluation, use, and admissibility of boundary evidence in courts of law. Discussion of surveyor's liability and role in courts of law.

**Prerequisites:** CIVE 1100 with a minimum grade of D- and CIVE 1110 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 3730 Geodetic and Control Surveying**

[0-3 credit hours]

Introduction to Geodesy and Control Surveying including State Plane Coordinates, Azimuths from Celestial Observations, Development of Control Networks for Surveys, Introduction of Global Positioning Systems and Aerial Mapping, high accuracy measurements which account for the curvature of the Earth, and definitions of geodetic data for survey control.

**Prerequisites:** (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030)

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Summer



**CIVE 3760 Route and Construction Surveying**

[0-3 credit hours]

Route Surveying and Geometric Design including Horizontal, Vertical and Spiral Curves, Topographic Surveying and Mapping, Earthwork Volumes, and Construction Layout and Staking. Prerequisites: (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030)

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Summer

**CIVE 3770 Cadastral Surveys and Ohio Land Systems**

[3 credit hours]

Study of the Official Surveys of the United States. Establishment and Retracement of Public Land Survey System Surveys and Colonial Land Surveys. History of Land Systems in the United States and Original Ohio Land Subdivisions. Prerequisites: (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030).

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Spring

**CIVE 3940 Co-Op Experience**

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** CIVE 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CIVE 3950 Co-op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** CIVE 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CIVE 4210 Advanced Soil Mechanics**

[3 credit hours]

A study of soil behavior including stress distributions, deformation, consolidation and shear strength. The course focuses upon the development and use of well accepted solutions and practical applications.

**Prerequisites:** CIVE 3210 with a minimum grade of D-

**CIVE 4240 Design With Geosynthetics**

[3 credit hours]

Use of geosynthetic materials in engineering design for reinforcement, barrier, separation and/or drainage functions. Design applications for geotechnical, transportation and environmental uses.

**Prerequisites:** (CIVE 3210 with a minimum grade of D- and CIVE 3220 with a minimum grade of D-)

**CIVE 4300 Advanced Mechanics Of Materials**

[3 credit hours]

Introduction to theory of elasticity, plane-stress and plane-strain problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetrical bending, torsion, shear center and axisymmetrically loaded members.

**Prerequisites:** CIVE 1160 with a minimum grade of D- and (MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4320 Computer-Aided Analysis of Structures**

[3 credit hours]

Matrix analysis of continuous beams, trusses and frames by force method and displacement method. Methods of consistent deformation and slope deflection will be discussed to complement the matrix analysis. Computer applications.

**Prerequisites:** CIVE 3310 with a minimum grade of D-

**CIVE 4340 Experimental Mechanics**

[3 credit hours]

Application of experimental techniques to stress analysis. Comparison of experimental and analytical methods. Theory of electrical resistance strain gages. Methods of photoelasticity including photostress. Data acquisition systems and their use.

**Prerequisites:** CIVE 2110 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 4430 Structural Steel Design II**

[3 credit hours]

Study of local failure in beams, biaxial bending, plate girders, composite beams, semi-rigid composite connections and beam columns.

**Prerequisites:** CIVE 3410 with a minimum grade of D-

**Term Offered:** Spring

**CIVE 4440 Reinforced Concrete Design II**

[3 credit hours]

Analysis and design of columns under axial compression and biaxial bending. Consideration of bar cut-off, development lengths. Design of two-way slabs and building frames in reinforced concrete. Deflection of beams. Shear design provisions for deep beams.

**Prerequisites:** CIVE 3420 with a minimum grade of D-

**CIVE 4480 Reinforced Masonry Design**

[3 credit hours]

Study of the design of reinforced and unreinforced masonry design, beams and walls and columns. Working stress design, strength design and empirical design are studied.

**Prerequisites:** CIVE 3420 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CIVE 4550 Traffic Control**

[3 credit hours]

To provide a detailed understanding of the basic concepts of traffic engineering together with driver-roadway-vehicle system characteristics. Capacity analysis of freeways, rural highways, multilane and two lane highways. Traffic control devices and traffic signal design and capacity. Traffic studies and data collections; volume, speed and travel time, accident and parking studies. Introduction to other tools to mitigate traffic congestion.

**Prerequisites:** CIVE 3510 with a minimum grade of D-

**Term Offered:** Fall

**CIVE 4610 Hydrology And Water Resources**

[3 credit hours]

This course is directed to application of fluid mechanics, hydrology, and hydraulics to the discipline of water resources engineering. Topics covered include flow in closed conduits, flow in open channels, pump systems, surface water hydrology, and computational modeling for hydraulic systems. At the successful completion of this course, the student will learn to apply the fundamental principles to the practical solution of both analysis and design problems in closed and open conduit flows.

**Prerequisites:** (CIVE 3610 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

**Term Offered:** Spring

**CIVE 4630 Indoor Air Quality**

[3 credit hours]

Characterization of indoor air pollutants, predictions of indoor air quality levels and indoor air quality control. Four to five design problems involving indoor air quality will be discussed/solved in the class. Special emphasis on the indoor radon and asbestos problems in the United States. Use of USEPA program.

**Term Offered:** Fall

**CIVE 4680 Environmental Law**

[3 credit hours]

An overview of the major federal environmental statutes: Clean Air Act, Clean Water Act, RCRA, CERCLA, etc. and legal perspective of why they were developed. Exposure to some basic legal principles which will be integrated into the overall study of environmental law. Provides a practical perspective on how the law can be applied to situations encountered by environmental engineers and scientists in the real world.

**Term Offered:** Fall

**CIVE 4690 Sustainability Engineering**

[3 credit hours]

Course develops students' abilities to apply the principles of sustainability to engineered systems. Course topics include sustainability definition and data, life cycle assessment based design, planetary boundaries, greenhouse gas emissions, green construction.

**Term Offered:** Spring, Fall

**CIVE 4710 Advanced Engineering Systems Modeling**

[3 credit hours]

A systematic approach to the analysis of complicated engineering system involving uncertain and probabilistic phenomena. Decision-making with multiple objectives, monte carlo simulation, reliability based design, and Markov process are studied.

**Prerequisites:** (CIVE 3120 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4720 Boundary Control and Legal Principles**

[3 credit hours]

Establishment and Re-establishment of Land Boundaries, Locating Points and Line for Boundaries, Historical Development of Boundaries, Introduction of Rectangular System of Public Land Surveys, Systems to Describe Properties, Application of Legal Principles to Boundary Analysis.

**Prerequisites:** (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030).  
**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4750 Senior Design Projects**

[0-3 credit hours]

To provide real world civil engineering design experience through a design problem as would be developed in an actual civil engineering consultant's office.

**Term Offered:** Spring, Fall

**CIVE 4770 Legal and Ethical Aspects of Surveying**

[3 credit hours]

Study of Statute and Common Law pertaining to Surveying and Property Rights, Interpretations and Methods to Describe Real Property, Minimum Standards for Surveys, Ethics for Professional Surveyors. **Prerequisites:** (CIVE 1100 or CET 1210) AND (CIVE 1110 or CET 2030)

**Prerequisites:** (CIVE 1100 with a minimum grade of D- or CET 1210 with a minimum grade of D-) and (CIVE 1110 with a minimum grade of D- or CET 2030 with a minimum grade of D-)

**Term Offered:** Fall

**CIVE 4900 Seminars In Civil Engineering**

[1-3 credit hours]

An opportunity for qualified upperclassmen to pursue a relevant area of Civil Engineering of particular personal interest under the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall

**CIVE 4990 Special Topics - Independent Study**

[1-3 credit hours]

An opportunity for a qualified upper class person to pursue a relevant area of Civil Engineering under the supervision of a faculty member.

# CLASSICS (CLC)

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## **CLC 1010 Classical Humanities**

[3 credit hours]

An introduction to the civilization of the Greeks and Romans in which history, literature, mythology, art and philosophy are interrelated and interpreted. (not for major credit)

Core Arts & Humanities, Trans Mod Arts and Humanities

## **CLC 2040 Ancient Near East**

[3 credit hours]

A survey of the history and civilization of ancient Sumer, Babylonia, Assyria, Egypt, Palestine and Persia.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

## **CLC 2050 Ancient Greece**

[3 credit hours]

A survey of the history and civilization of Hellenic and Hellenistic Greece.

Core Arts & Humanities, Trans Mod Arts and Humanities

## **CLC 2060 Ancient Rome**

[3 credit hours]

A survey of the history and civilization of Rome from its origin through the Empire.

Core Arts & Humanities, Trans Mod Arts and Humanities

## **CLC 3100 Classical Mythology**

[3 credit hours]

A survey of Greek and Roman mythology in classical literature, sculpture and art.

**Term Offered:** Spring

# COLLEGE OF ARTS AND LETTERS (AR)

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## **AR 1000 First Year Orientation**

[1 credit hour]

Course will introduce new students to the university and college, provide information on requirements, regulations, campus resources and career exploration and help students develop academic skills. It is required of all new students.

# COMMUNICATION (COMM)

## COMM 1010 Comm Principles And Practices

[3 credit hours]

An introductory course that provides instruction and practice in human communication including interpersonal communication, group discussion, public speaking and mass communication. (not for major credit)

**Term Offered:** Spring, Summer, Fall  
Core Arts & Humanities

## COMM 2000 Mass Communication And Society

[3 credit hours]

Overview of the media of mass communication, which considers social, economic and intellectual impact on American culture and democracy. Exploration of various mass media and their methods of shaping public perceptions.

**Term Offered:** Spring, Summer, Fall  
Core Arts & Humanities

## COMM 2100 News Writing for Media

[4 credit hours]

Theory and practice of news writing as journalistic discourse. Emphasis on news style and values, story structure, types of stories. Ethics, taste and rudiments of law integrated throughout.

**Term Offered:** Spring, Summer, Fall

## COMM 2120 Reporting

[3 credit hours]

Introduction to writing for publication in the student newspaper, developing skills in interviewing, listening, using primary sources, thinking critically, and mastering electronic data-collection methods.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Fall

## COMM 2130 Media Writing 1

[3 credit hours]

Through various assigned readings, discussions, reporting and writing, students will become fully immersed in the media writing process. Students will develop story ideas, interview sources and write publication-ready news articles. Emphasis will be placed on journalistic ethics, credibility, accuracy and news judgment.

**Term Offered:** Spring, Summer, Fall

## COMM 2150 Digital Publishing

[3 credit hours]

Introduction to Writing, Editing, Design approach in editing newspapers, newsletters, electronic and similar publications. Fundamentals of desktop publishing, copy editing, headline writing, typography, layout, design, use of photos, illustrations.

**Term Offered:** Spring

## COMM 2160 Single Camera Production

[3 credit hours]

This is a laboratory/lecture course designed to introduce the student to the terminology and single camera production procedures used in field television production and serve as a foundation for story-telling through this medium.

**Term Offered:** Spring, Summer, Fall

## COMM 2180 Media Producing and Performance

[3 credit hours]

The class is designed to give students experience being in front of the camera through a variety of assignments that will give them practice at interview skills, reading off the Teleprompter, and adlibbing. Also, students will gain experience producing and coordinating productions.

**Term Offered:** Spring, Fall

## COMM 2210 Audio Production I

[3 credit hours]

The class is designed to introduce students to studio recording and editing sound. Students will produce commercials, public service announcements, and demos for announcing jobs. Audio Production I is also designed to be a pre-requisite class for Audio Production II.

**Term Offered:** Spring, Fall

## COMM 2220 Television Studio Production

[3 credit hours]

Students will work together to produce various types of live studio productions and will be introduced to the process of remote video acquisition and editing for use in living productions.

**Prerequisites:** COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

## COMM 2300 Photojournalism

[3 credit hours]

An applied study of the conceptual, ethical, philosophical, historical and commercial aspects of photojournalism.

**Term Offered:** Spring, Fall

## COMM 2400 Information Analysis

[3 credit hours]

Introductory course for all Communication majors. Identification of primary sources that match information needs, gaining access to these sources, retrieving information and using it for responsible media decision making.

**Term Offered:** Spring, Summer, Fall

## COMM 2500 Social Media I

[3 credit hours]

This course covers the practice and use of social media in communicating across the fields of media and business and its effect on society. The topics of Social Media: marketing, advertising and networking will be discussed and students will produce projects using emerging/current social media technology.

**Term Offered:** Spring, Summer, Fall

## COMM 2600 Public Presentations

[3 credit hours]

Applies the principles of informative and persuasive communication in the construction, delivery, and critique of public presentations.

**Term Offered:** Spring, Summer, Fall

## COMM 2810 Nonverbal Communication

[3 credit hours]

Survey, analysis and application of research in nonverbal communication variables and phenomena.

**Term Offered:** Spring, Summer, Fall



**COMM 2820 Group Communication**

[3 credit hours]

Theory and practice of group communication variables and processes with an emphasis on problem-solving approaches.

**Term Offered:** Spring, Summer, Fall

**COMM 2830 Organizational Communication**

[3 credit hours]

This course examines the principles and theories of organizational communication. Particular attention will be devoted to how communication skills, culture, systems, ethics, new technology and power all affect, create and define organizations.

**Term Offered:** Spring, Fall

**COMM 2840 Interpersonal Communication**

[3 credit hours]

Review and application of interpersonal communication theory and research in a variety of one-to-one social contexts.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**COMM 2870 Communication Theory**

[3 credit hours]

An introduction to human communication theory and research directed toward understanding and applying theory and research in various communication contexts and for various communication outcomes.

**Term Offered:** Spring, Summer, Fall

**COMM 2890 Crisis & Conflict in Organizations**

[3 credit hours]

An examination of communication variables that may reduce the potential for workplace conflict. Students survey theoretical models, conduct interviews with professionals and write analyses of case studies of successful conflict management.

**Term Offered:** Summer, Fall

**COMM 2990 Independent Study**

[1-4 credit hours]

A freshman/sophomore seminar in which the student pursues a problem of special interest in communication. A prospectus must be submitted to the faculty member with whom the student will work.

**Term Offered:** Spring, Summer, Fall

**COMM 3120 Media Writing II**

[3 credit hours]

This course will focus on identifying, developing and writing online articles about community and business issues. Students also will become versed in major state, local and national news.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring

**COMM 3150 Feature Writing**

[3 credit hours]

Theory and practice in writing in various kinds of discourse for newspapers, magazines and electronic publications and writing for specialized audiences. Developing context, analysis, background and appropriate standards of evidence for publication.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3180 Mass Communication Law**

[3 credit hours]

Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3210 Audio Production 2**

[3 credit hours]

This advanced course is designed to further enhance students' proficiency of audio and program production skills through project based learning.

**Prerequisites:** COMM 2210 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3260 Live Sports Production**

[3 credit hours]

This is a laboratory/cooperative course where students will work in collaboration with other university departments and clients with the result of producing live video content for streaming on ESPN3 and display in various venues such as the Glass Bowl, Savage Arena, scoreboards and in-house projection systems. All production work will be completed outside the classroom, and students will need to be available for productions during hours outside of standard class meeting times.

**Prerequisites:** COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 3270 Multimedia Newsriting**

[3 credit hours]

Training in the skills required in the preparation, writing and editing of both radio and television news.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Summer, Fall

**COMM 3290 Content Management**

[3 credit hours]

The student will be able to proficiently utilize new media and critically analyze design and content issues in mediated communication. The goal of this course is media design and content literacy.

**Prerequisites:** COMM 2000 with a minimum grade of D- or COMM 2500 with a minimum grade of D-

**COMM 3340 Visual Communication I**

[3 credit hours]

Application of the principles of visual communication to informing, persuading, and entertaining the public through digital photography, layout & design in print, Web design, and a multimedia presentation.

**Term Offered:** Spring, Summer, Fall

**COMM 3350 Graphic Communication 1**

[3 credit hours]

To develop the ability to create successful mediated messages through the use of new technologies and software from concept to the end product. The student will be able to proficiently utilize the Internet, and critically analyze design issues in mediated communication. The students will also develop a foundation for using tools to produce graphics for television and online. This course is the prerequisite for Graphic Communication 2.

**Term Offered:** Spring, Fall

**COMM 3500 Social Media II**

[3 credit hours]

This advanced course covers the practice and use of social media in communicating across the fields of media and business and its effect on society. The student will develop a relationship with a client and develop a brand that will be marketed through social and digital media. Social Media 1 is a prerequisite for this course.

**Prerequisites:** COMM 2500 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 3610 Speech Writing**

[3 credit hours]

Applies principles of effective public relations communication to the practice of developing speeches for others and composing publicity materials.

**Term Offered:** Spring, Fall

**COMM 3720 Public Relations Theory**

[3 credit hours]

Public relations principles, planning and methods in business, government, educational institutions and other organizations. Examination of law, ethics, professionalism, history, theory, strategies and practices of the profession.

**Prerequisites:** COMM 2100 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**COMM 3750 Cross Cultural Communication in Public Relations**

[3 credit hours]

Intercultural Communication examines the basic elements of interpersonal communication and culture as the two relate to one another in a public relations environment. Emphasis is given to the influence of culture on the interpretation of the communication act and to the communication skills that enhance cross-cultural communication while practicing public relations.

**COMM 3760 Health Communication**

[3 credit hours]

Review and application of health communication theory, research, and practice in a variety of contexts.

**COMM 3820 Persuasion Theory**

[3 credit hours]

Examination of the theory and practices used in persuasive communication in public presentations, advertising, sales and political campaigns.

**Term Offered:** Spring, Summer, Fall

**COMM 3830 Basic Principles Of Debate And Forensics**

[3 credit hours]

Theory and practice in reasoned discourse; analysis, evidence, logical forms and fallacies. Problems and procedures in administering a forensic program, teaching and directing debate and individual speaking events.

**Term Offered:** Spring

**COMM 3850 Research Methods**

[3 credit hours]

Introduction to qualitative and quantitative methods in communication research. Focus on evaluating and interpreting reports in various forms of communication.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**COMM 3870 Communication Theory**

[3 credit hours]

A review of human communication theory and research directed toward understanding and applying theory and research in various communication contexts and for various communication outcomes.

**Term Offered:** Spring, Summer, Fall

**COMM 3880 Professional Business Communication**

[3 credit hours]

Developing oral and written business communication skills through practice in public speaking, interviewing, resume writing, and communication in various formats.

**Term Offered:** Spring, Summer, Fall

**COMM 4040 Storytelling in Public and Private Spaces**

[3 credit hours]

Students will apply traditional storytelling techniques to empower sources to tell anecdotes during interviews, to tell their own true stories, to help readers understand the meaning of news as well as life's challenges. Via human-interest articles, writers will show rather than tell things.

**Term Offered:** Spring

**COMM 4090 Mass Communication Ethics**

[3 credit hours]

Investigation of problems and practical application of classical theories as well as current strategies to confront ethical crises in mass-media settings.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**Term Offered:** Fall

**COMM 4100 Multimedia Journalism**

[4 credit hours]

Developing a thorough understanding of researching, writing, and presenting television/online news. Includes studio and remote productions.

**Prerequisites:** COMM 2220 with a minimum grade of D- or COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 4110 High School Publications**

[3 credit hours]

Problems involved in the production of high school newspapers and yearbooks including approaches to design, advertising, content, news, editorials, administration and business management.

**Term Offered:** Fall

**COMM 4220 Advanced Television Production**

[4 credit hours]

Advanced principles and aesthetic considerations in the production of various television programs. Includes working with remote equipment and digital editing.

**Prerequisites:** COMM 2160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**COMM 4250 Mass Communication History**

[3 credit hours]

Historical consideration of the media from colonial era to the present, with special emphasis on learning through problem-solving and critical thinking about the role of mass communication as a force in shaping national identity.

**Prerequisites:** COMM 2000 with a minimum grade of D-

**Term Offered:** Spring

**COMM 4260 Communication in Non-Profit Organizations**

[3 credit hours]

COMM 4260 COMMUNICATING IN NON-PROFIT ORGANIZATIONS.

[3 hours] This course examines the communication strategies Non-Profit Organizations use to publicize their charitable goals to potential donors and how they describe their progress to governmental watchdog committees.

**COMM 4270 Special Event Planning**

[3 credit hours]

Examines the practices, and procedures associated with identification, analysis, planning, evaluation and control of the operational, fiscal, and legal risks of event planning.

**Term Offered:** Spring, Summer, Fall**COMM 4330 Integrated Media**

[3 credit hours]

The goal of this course is media design literacy. Students will develop the ability to create successful mediate messages through various mediums and new technologies.

**Prerequisites:** COMM 2630 with a minimum grade of D- or COMM 3340 with a minimum grade of D- or COMM 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall**COMM 4340 Visual Communication II**

[3 credit hours]

Advanced theory, application, and interpretation of visual communication and rhetoric to inform, persuade and entertain the public through digital photography, layout and design in print, Web design, and digital multimedia.

**Prerequisites:** COMM 2630 with a minimum grade of D- or COMM 3340 with a minimum grade of D-

**Term Offered:** Spring**COMM 4350 Graphic Communication 2**

[3 credit hours]

To develop the ability to create successful mediated messages through the use of new technologies and software from concept to the end product. The student will be able to proficiently utilize new technology, and critically analyze design issues in mediated communication. The goal of this course is advanced visual design literacy. The students will also develop a thorough understanding for using tools to produce graphics for television and online.

**Prerequisites:** COMM 3350 with a minimum grade of D**COMM 4630 Public Relations Practices**

[3 credit hours]

Examination of practices, techniques, tools and strategies used in public relations. Research theory and techniques; strategic planning and management of public relations programs. In-depth study of one detailed project.

**Prerequisites:** COMM 3720 with a minimum grade of D-**Term Offered:** Spring, Fall**COMM 4640 Public Relations Case Studies**

[3 credit hours]

Analysis of successful and unsuccessful public relations efforts and programs. Emphasis on the theoretical and ethical foundations of successful public relations programming.

**Prerequisites:** COMM 3720 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**COMM 4820 Family Communication**

[3 credit hours]

Explores variables and processes of family communication emphasizing theory, definitions of family, roles & rules, conflict, intimacy, societal influences, and effects on the individual and the family as a whole.

**Term Offered:** Spring, Summer**COMM 4830 Gender, Culture & Communication**

[3 credit hours]

Cross-listed as WGST-4350. Explores how gender and culture simultaneously shape and are shaped by communication through relationships, institutions, and society. WAC class.

**Term Offered:** Summer, Fall**COMM 4900 Communication Seminar**

[3-4 credit hours]

An in-depth examination of a communication topic, problem or media event. May be writing intensive.

**Term Offered:** Spring, Summer, Fall**COMM 4910 Communication Studies Capstone**

[3 credit hours]

Application of knowledge and skills through a project or research investigation related to an area of communication.

**Prerequisites:** COMM 2000 with a minimum grade of D- and COMM 2130 with a minimum grade of D- and COMM 2600 with a minimum grade of D- and COMM 2820 with a minimum grade of D- and COMM 2840 with a minimum grade of D- and COMM 2870 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall**COMM 4940 Communication Internship**

[1-6 credit hours]

Professional training in communication relating to newspaper work, public relations, broadcasting etc. Arrangements with the appropriate communication organization must be made in consultation with the internship director prior to enrollment. Course offered P/NC.

**Term Offered:** Spring, Summer, Fall**COMM 4990 Independent Study**

[1-4 credit hours]

A seminar in which the student pursues a problem of special interest in communication. A prospectus must be submitted prior to registration to the participating faculty member.

**Term Offered:** Spring, Summer, Fall

# COMMUNICATION AND THE ARTS (COCA)

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## **COCA 2000 Mindful Creativity**

[3 credit hours]

Introduction to the principles, skills and practice of Mindfulness and their relationship to the development of creativity. Exploration of application to daily life including academic and professional situations.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

# COMPUTER NETWORK TECHNOLOGY (CNET)

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## **CNET 2100 Microsoft Operating Systems**

[3 credit hours]

In-depth study of a contemporary network operating system. Topics include operating system installation and upgrade, configuration, management and troubleshooting.

**Term Offered:** Fall

## **CNET 2150 Computer Hardware**

[3 credit hours]

Knowledge of computer hardware for the purpose of acquisition, installation and maintenance at the equipment level. The curriculum is aligned with the A+ certification standards.

**Term Offered:** Spring, Fall

## **CNET 2200 Network Technologies**

[4 credit hours]

Examines the network technologies utilized in today's networks. Emphasis is placed on understanding hardware and software concepts and protocols referred to in technical publications and advanced network studies.

**Term Offered:** Spring, Summer

## **CNET 2300 Network Operating Systems II**

[4 credit hours]

This course offers an in-depth study of a contemporary network operating system. Topics include operating system installation and upgrade, configuration, management and troubleshooting.

**Term Offered:** Spring, Fall

## **CNET 2400 Network Operating System Support**

[4 credit hours]

Examines the support aspects of a contemporary network operating system in a local area network environment. Topics include operating system installation, upgrade, configuration, management and troubleshooting.

**Term Offered:** Spring, Fall

## **CNET 2410 Network Services and Infrastructures**

[3 credit hours]

This course culminates the CNET server curriculum by focusing on vital network services and supporting network infrastructure. Topics include network budgeting, design, planning and implementation, as well as enterprise-wide internetworking.

**Prerequisites:** CNET 2400 with a minimum grade of D-

**Term Offered:** Spring, Fall



# COMPUTER SCI ENGINEERING TECH (CSET)

## CSET 1100 Introduction to Computer Science and Engineering Technology

[0-4 credit hours]

This course is the first course in computer hardware and software for CSET majors. Introduction to Single and multi-user operating systems, command-line processing and some internet tools are covered. Most of the course focuses on introduction to programming and software development.

**Term Offered:** Spring, Fall

## CSET 1200 Object Oriented Programming and Data Structures

[3 credit hours]

This course teaches object oriented program design, analysis, and verification with an introduction to data structures including but not limited to list, queue, stack and tree. The course emphasizes Programming Methodology and its impact on programs and the use of Data Abstractions and the implementation of Data Abstractions using classes.

**Prerequisites:** CSET 1100 with a minimum grade of D- and ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CSET 2200 PC and Industrial Networks

[0-4 credit hours]

Current concepts and technologies used with personal computers and PLCs in both industrial (factory-floor) and commercial data networks. Topics include PC networking hardware and software, PLC hardware and programming and PLC networking alternatives.

**Prerequisites:** CSET 1100 with a minimum grade of D- and EET 2210 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## CSET 2230 Assembly Language and Computer Architecture

[4 credit hours]

This course focuses on the analysis, design, and programming of computer microprocessor architectures. Topics include performance metrics, the design of a machine's instruction set architecture (ISA). This course examines the bridge between low-level hardware and executable software, and includes programming in assembly language (representing software programs).

**Prerequisites:** CSET 1100 with a minimum grade of D- and EET 2210 with a minimum grade of D-

**Term Offered:** Summer, Fall

## CSET 3100 Advanced Web Site Design

[3 credit hours]

HTML forms, creation of static and animated web graphics, Dynamic Fonts, SMIL (Synchronized Multimedia Integration Language) as it relates to G2, Realtext, Realpix and XML. The course also covers Frames, META Tags, Optimizing Speed, Cookies, Imagemapping (from both sides), HTML, tables and Shockwave.

**Prerequisites:** CSET 1100 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CSET 3150 Introduction to Algorithms

[4 credit hours]

The course covers topics in basic algorithm design and analysis of traditional algorithms such as sorting algorithms, selection algorithms and graph algorithms, with the focus on building correct and efficient algorithms based on the known algorithms. Besides, advanced data structures such as hash tables, binary search trees are covered in the course.

**Prerequisites:** CSET 2230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## CSET 3200 Client/Server Computing

[3 credit hours]

Covers client/server architecture and programming techniques.

Major topics include two-tier and three-tier client server architectures, programming considerations, cleanlayering, advanced graphical user interface controls, database processing, transaction processing and monitoring.

**Term Offered:** Spring, Summer, Fall

## CSET 3250 Client-Side Scripting

[3 credit hours]

Introduction to the Document Object Model (DOM), JavaScript and VBScript scripting languages, cascading style sheets, browser recognition, browser-specific content, data validation and layers.

**Prerequisites:** CSET 3100 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CSET 3300 Database-Driven Web Sites

[4 credit hours]

Creation of dynamic Web applications that interact with a database using client-side scripts, server-side scripts and compiled server programs. Includes database fundamentals, scripting language fundamentals and server considerations.

**Term Offered:** Spring, Summer, Fall

## CSET 3400 Unix System Administration

[3 credit hours]

Commands and methods to install and manage a UNIX system. System administration topics include configuration, user and file management, backup procedures, peripheral devices, performance tuning and troubleshooting.

**Term Offered:** Spring

## CSET 3600 Software Engineering and Human Interfacing

[4 credit hours]

An introduction to software engineering processes for technology students. Includes: user requirements, software specification, design approaches, human-computer interfacing, software tools, validation, modification, maintenance, documentation, lifecycle models, and intellectual property considerations.

**Term Offered:** Spring, Fall

## CSET 4100 SERVER-SIDE PROGRAMMING

[3 credit hours]

Covers Common Gateway Interface (CGI) programming on the Internet using the most popular scripting languages. Topics include client-side programs, server-side programs, distributed database creation and searching.

**Term Offered:** Summer, Fall

**CSET 4150 Web Server Administration**

[3 credit hours]

Installation and configuration of the web server operating systems (e.g., UNIX, Windows NT), installation and administration of web daemon (e.g., Apache, Microsoft IIS). Site management, including file and directory hierarchy, web log analysis, installation and configuration of various utilities for gopher, ftp, text ending and email.

**Prerequisites:** CSET 2200 with a minimum grade of D-

**Term Offered:** Summer, Fall

**CSET 4200 Vlsi Technology**

[4 credit hours]

Introduction to CMOS technology and circuits, MOS transistor switches and CMOS logic. Practical aspects of silicon manufacturing technology including wafer processing, layout design rules and process parameterization. Electrical and physical design of logic gates, clocking schemes, I/O structures and structures design strategies.

**CSET 4250 Applied Programming Languages**

[3 credit hours]

How to select the most appropriate language for a specific engineering technology application. Topics include comparison of programming languages by evolution, formal specifications, structures, features, application domains, programming paradigms, implementation of syntax, semantics and program run-time behavior.

**Term Offered:** Spring, Fall

**CSET 4350 Operating Systems**

[3 credit hours]

This course teaches the fundamentals of operating systems concepts. It discusses the following topics: process scheduling, memory management, kernel and user mode, system calls, context switches, inter-process communication, I/O and file systems.

**Prerequisites:** CSET 2230 with a minimum grade of D-

**Term Offered:** Summer, Fall

**CSET 4450 Video Game Design And Programming**

[4 credit hours]

This is a project-oriented course on Game Design and Programming. Students work in teams to design, implement and test games with interactivity, animation, sound, constraints, and networking capabilities.

**Prerequisites:** CSET 3150 with a minimum grade of D-

**CSET 4750 Computer Networks And Data Communication**

[4 credit hours]

Computer network architectures and their application to industry needs. Major topics include vocabulary, hardware, design concepts, current issues, trends, hardware, multi-user operating systems, network protocols, local and wide area networks, intranet and internet communications, analog and digital data transmissions.

**Prerequisites:** CSET 2200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CSET 4850 Computer and Network Security**

[4 credit hours]

This course provides an introduction to the concepts of computer security, topics include, but not limited to basic cryptography, security policies, network security, program security and systems security. Hands-on lab projects are provided for important topics.

**Prerequisites:** CSET 4750 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

# COMPUTER TECHNOLOGY (CMPT)

## CMPT 1010 Computer Fundamentals

[1 credit hour]

Introduction to computers. Topics covered are hardware, software, computer operation, terminology and applications.

**Term Offered:** Spring, Fall

## CMPT 1020 Computer Concepts

[4 credit hours]

Introduction to computer software, hardware, and processes associated with contemporary computer systems. Topics include operating systems, user applications, e-mail, WWW, and search capabilities. Emphasis is placed on the Internet and networking.

**Term Offered:** Spring, Summer, Fall

## CMPT 1100 Microsoft Office Applications

[3 credit hours]

Concepts and techniques of the application of Microsoft Word, Excel, Access and PowerPoint in the workplace.

**Term Offered:** Spring, Summer, Fall

## CMPT 1110 Pc Operating Systems

[3 credit hours]

A+ certification aligned study of both command line and graphical user-based current PC operating systems. Topics include installation and upgrade, configuration, management, troubleshooting and network connectivity.

**Term Offered:** Fall

## CMPT 1120 Visual Basic Programming

[4 credit hours]

A currently popular programming language, such as Microsoft Visual Studio, will be used to create stand-alone applications. Topics such as object-oriented coding, logical procedures and proper documentation are stressed.

**Term Offered:** Spring

## CMPT 1320 Internet And The World Wide Web

[1 credit hour]

Topics include history of the Internet, IP addressing, World Wide Web, HTML, and CSS. Students will learn the history and functionality of the Internet and create a two-page website using HTML and CSS.

**Term Offered:** Spring, Summer, Fall

## CMPT 1400 Dreamweaver Web Page Development

[3 credit hours]

Using Dreamweaver students will learn how to plan and develop a successful Web site, organize page content, format Web sites using CSS styles, produce dynamic Web pages and add animation using rich media and reusable assets and forms.

**Term Offered:** Spring, Fall

## CMPT 1410 Microsoft Excel Spreadsheet Application

[2 credit hours]

Introduces the basic features of Microsoft Excel and spreadsheet concepts to design and create accurate professional worksheets for use in business and industry. Hands-on exercises include entering data; creating formulas; professional formatting; creating charts; adding visual interest, creating, sorting, and filtering lists; creating and using templates; and working with functions. Focuses on proofing methods to ensure accuracy and critical thinking to determine what data to present and how to present it.

**Term Offered:** Spring, Summer, Fall

## CMPT 1420 Microsoft Access Database Applications

[2 credit hours]

Hands-on analysis of the use of Access in solving workplace problems with an emphasis on the entering, updating, manipulating, storing and retrieving of information.

**Term Offered:** Spring, Fall

## CMPT 1430 Microsoft Word

[2 credit hours]

Introduces the basic features of Microsoft Word and word processing concepts to create, edit, and print documents for use in business, industry, and to enhance professional documents. Hands-on exercises include creating and formatting letters, memos, and business documents; producing multi-page documents; creating headers and footers; becoming familiar with the writing/editing tools; enhancing documents with images; creating and formatting tables, and producing mail-merged letters, envelopes, and mailing labels.

**Term Offered:** Spring, Summer, Fall

## CMPT 1440 Microsoft PowerPoint Presentation

[2 credit hours]

Introduces the basic features of Microsoft PowerPoint and electronic presentation concepts to create, edit, and deliver presentations for use in business, industry, and to enhance informational presentations.

Emphasis includes planning, creating, and editing presentations for delivery on a projection system, personal computer, or to run automatically on a kiosk system. Exercises include designing using themes; applying animations, sound, and transitions; using and customizing templates; and adding tables, charts and graphics for improved comprehension and clarity.

**Term Offered:** Spring, Summer, Fall

## CMPT 1450 Microsoft Outlook

[1 credit hour]

Students will learn a popular messaging and personal information management program used to send and receive e-mail and manage messages, contacts, appointments and tasks.

**Term Offered:** Spring, Fall

## CMPT 1500 Flash Web Animation

[3 credit hours]

This course offers the opportunity to learn entry-level web animation that includes frame by frame animation, animated shapes, using masks, and motion tweens. In this course you will be learning how to create animated holiday e-cards, animated short movies, and much more.

**Term Offered:** Spring, Fall

**CMPT 1510 Digital Design Fundamentals**

[3 credit hours]

Theory and the practical application in working with digitally-produced documents to provide well-designed business communication pieces for print and online distribution. The basic principles of good layout/design, image creation via scanner/camera, font selection/technology, image file formats, and typography are addressed. Also the fundamentals of print technology from the desktop user's perspective with attention to image resolution, halftones/screen frequency, stock selection, bindery, job scheduling concerns, and color use and theory to prepare files for professional print production are covered.

**Prerequisites:** CMPT 1100 with a minimum grade of D-

**CMPT 1520 Beginning Adobe Illustrator**

[3 credit hours]

Introduces the creation of professional vector images using Adobe Illustrator Creative Cloud. Hands-on exercises include creating logos, illustrations, brochures, and posters. Techniques studied include drawing basic shapes, creating vector paths, using the pen and pencil tools, brushes, and symbols, transforming artwork, creating patterns, gradients, blends, symbols, and creating compound paths. Additional topics covered are color theory, typography, 3D vector effects, drawing in perspective, creating illustration components for the web, and importing images.

**Term Offered:** Spring, Fall

**CMPT 1530 Beginning Adobe Photoshop**

[3 credit hours]

Introduces the creation of professional raster photos using Adobe Photoshop Creative Cloud, Camera Raw, and Bridge. Hands-on exercises include photo retouching and repairing; color painting; applying masking, layer styles, and filters; advanced compositing; designing with type; vector drawing techniques; preparing files for the Web; and using Photoshop's automation features. Additional topics covered are image resolution; file formats; color theory; ethical and copyright issues involving photo editing; and using various tools and features.

**Term Offered:** Spring, Summer, Fall

**CMPT 1550 Adobe Acrobat**

[3 credit hours]

Using Adobe Acrobat DC, learn to create, edit, publish, and sign Portable Document Format (PDF) files for distribution of electronic files across Mac and Windows platforms, devices, and among different software programs. Document security, capturing scans and making them editable, creating searchable and interactive PDF forms, and improving workflow collaboration and production speed will be addressed in this hands-on, project-based course.

**CMPT 1600 Internet Design And Publishing**

[3 credit hours]

This course offers a broad overview and extensive practical experience in the design and production of Web pages. Students learn current Web design technology.

**Term Offered:** Spring, Fall

**CMPT 1700 Podcasting, Vodcasting, and Blogging**

[3 credit hours]

This course offers a broad overview and extensive practical experience with blogging and social media. In this course, you will learn about designing a blog site and gain practical experience. You will also be learning about all the new social media available on the web.

**Term Offered:** Spring, Summer, Fall

**CMPT 2030 C Family Programming**

[4 credit hours]

Students are introduced to the C family of programming languages. Students will write computer programs using the most up-to-date versions of this language family.

**Term Offered:** Spring, Fall

**CMPT 2410 Adobe InDesign Desktop Publishing**

[3 credit hours]

Introduces the creation of professional desktop published documents using Adobe InDesign Creative Cloud, to design effective and engaging print publications, such as announcements, fliers, advertisements, and reports. Hands-on exercises include designing and modifying layouts, creating master pages and styles, importing, flowing, and editing text, importing graphics, and designing tables. Additional topics include typography and design basics, creating PDF forms, exploring the publishing cycle, printing and exporting basics, and creating ePubs.

**Term Offered:** Spring

**CMPT 2430 Advanced Microsoft Word**

[2 credit hours]

Covers advanced features of Word through complex formatting techniques such as customizing paragraphs and pages; using bullets and multi-level numbering features; and formatting long documents with separate sections, headers, and footers. Hands-on exercises include proofing with spelling, grammar, and readability tools; using auto-entry and customization features; working with styles and macros; creating reference footnotes for academic papers; generating tables of content and indexes; working with, comparing, and tracking shared documents; and embedding, and linking objects.

**Prerequisites:** CMPT 1430 with a minimum grade of D-

**Term Offered:** Fall

**CMPT 2460 Advanced Microsoft Excel Spreadsheet**

[2 credit hours]

Covers advanced features of Excel to design and create accurate, professional worksheets using advanced functions and formulas. These include financial, logical, statistical, lookup, and database functions. Hands-on exercises include exploring the advanced features of data tables, creating complex graphs, using pivot tables; performing "what-if" data analysis, examining various scenario models, protecting and sharing workbooks, using 3-D cell references, automating with macros; and importing, exporting, and distributing data, and customizing the software to suit various needs.

**Prerequisites:** CMPT 1410 with a minimum grade of D-

**Term Offered:** Spring

**CMPT 2500 Help Desk Concepts**

[3 credit hours]

This course provides students with a core set of technical and communication skills. Topics include hard skills such as security, troubleshooting, working with networks and mobile devices. Personal computer hardware and operating systems and also discussed. Soft skills includes verbal and non-verbal communication, time management and active listening. After taking this course, students will be prepared for positions as a help desk specialist.

**Term Offered:** Fall

**CMPT 2530 Advanced Adobe Photoshop**

[3 credit hours]

An advanced, hands-on application of Adobe Photoshop for Digital Imaging. Students capture, create, manipulate and edit images for high-end output.

**Prerequisites:** CMPT 1530 with a minimum grade of D-

**Term Offered:** Spring

**CMPT 2620 Web Site Maintenance**

[3 credit hours]

This course develops skills for students who will function as Web developers or project managers responsible for increasing Web site traffic, updating Web content and designs. Students learn planning issues related to Web design and redesign.

**Term Offered:** Spring, Fall

**CMPT 2990 Independent Study**

[1-4 credit hours]

Students will study a computer-related subject mutually agreed upon between the student and the instructor. The format may include lecture, computer lab and/or practical experience.

**Term Offered:** Spring, Summer, Fall



# CONSTRUCTION ENGINEERING TECH (CET)

## CET 1010 Intro to Constr Eng Technology

[1 credit hour]

An introduction to Construction Engineering by introducing career sectors, current topics, teamwork, safety and the curriculum in order to provide the freshman CET student with building blocks for success within the program.

**Term Offered:** Fall

## CET 1050 Computers for Construction

[3 credit hours]

This course covers fundamental concepts, techniques and the application of microcomputers to the solution of engineering technology problems. This course provides an introduction to microcomputer operating systems and technical productivity software in construction engineering. The course also serves as an introduction to specialized software used in the profession and in future courses with the curriculum, (AutoCAD, WinEst, Microsoft Project, Sketch-Up).

**Term Offered:** Spring, Fall

## CET 1100 Architectural Drafting

[0-3 credit hours]

"This course covers the basics of architectural graphic techniques beginning with fundamental drafting skills and representational processes, and progressing toward the production of a complete construction documentation package, including plans, sections, elevations and detail views of an architectural project. The course will emphasize methods and procedures of hand drafting, while introducing computer aided drafting and design production techniques."

**Term Offered:** Spring, Fall

## CET 1150 Construction Materials And Codes

[3 credit hours]

This course consists of an introduction to terminologies and properties of construction materials and techniques from foundation, floor, wall and roof systems, as well as thermal and moisture protection and finish work. Sources of manufacturer's material information are discussed. An introduction is made into the various building codes and code organizations as related to new and existing buildings.

**Term Offered:** Spring, Fall

## CET 1200 Engineering Mechanics

[4 credit hours]

This course covers the basics of statics, load tracing and analysis of determinate structures. Special attention is paid to the application of the laws of statics and strength of materials as they relate to construction materials, techniques and methods. The course covers the analysis of direct and indirect stresses in structural members: stress, strain, bending moment, shear and deflection; and begins the structural design course progression with the design of beams, columns and structural connections.

**Prerequisites:** (PHYS 2010 with a minimum grade of D- or PHYS 2070 with a minimum grade of D- or PHYS 2130 with a minimum grade of D-) and (MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-)

**Term Offered:** Fall

## CET 1210 Surveying

[0-3 credit hours]

Study of construction and land surveying techniques, including the use of a steel tape, level, transit and total station. Laboratory will stress surveying measurement and layout techniques. Laboratory exercises will also introduce "AUTOCAD" and associated third party software applications to surveying.

**Prerequisites:** MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-

**Term Offered:** Spring

## CET 1250 Building Systems

[3 credit hours]

This course provides an introduction to selected building systems, equipment technologies and their capabilities. These systems include, but are not limited to: HVAC, plumbing, electrical, and other mechanical operations as they relate to building construction and building operations. Fundamentals of designing and sizing these systems will also be covered.

**Prerequisites:** CET 1100 with a minimum grade of D- and CET 1150 with a minimum grade of D- and (MATH 1320 with a minimum grade of D- or MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D- or MATH 1850 with a minimum grade of D- or MATH 2450 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## CET 2010 Construction Safety

[1 credit hour]

Minimum safety requirements are reviewed and discussed in a practical context for immediate application in the construction site. Course material includes review of the OSH Act, recording and reporting requirements, and citation policies.

**Prerequisites:** CET 1010 with a minimum grade of D-

**Term Offered:** Fall

## CET 2030 Construction Graphics

[3 credit hours]

Computer drafting as related to construction engineering projects such as highways, streets, sanitary and storm sewers, and building sites. The computer drafting portion will use Microstation and associated third party support (e.g. Geopak).

**Prerequisites:** CET 1100 with a minimum grade of D- and CET 1210 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CET 2060 Construction Estimating

[0-3 credit hours]

This course covers the fundamentals, concepts, and strategies used in the process of estimating construction costs. The organization of construction estimates and the bidding process will be discussed while focusing on materials, construction methods and labor strategies and costs. Use of spreadsheet software, as well as dedicated estimating and takeoff software will be explored in the recitation sections of the course.

**Prerequisites:** CET 1100 with a minimum grade of D- and CET 1150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CET 2110 Materials Testing**

[0-3 credit hours]

Design of portland and asphalt cement concrete mixes and associated quality control tests of mortar, aggregates, asphalt cements, portland and asphaltic concrete.

**Prerequisites:** CET 1150 with a minimum grade of D-

**Term Offered:** Fall

**CET 2220 Soil Mechanics**

[0-3 credit hours]

This course covers the characteristics and behavior of soil as it relates to the design and construction of civil engineering projects. The course will focus on identifying types of soils, the methods by which soils act and react under stress and how they can be manipulated and modified. Standard soils testing procedures will be used to produce a basic knowledge of soil and its pertinent properties.

**Prerequisites:** CET 1200 with a minimum grade of D- and ENGL 1110 with a minimum grade of D- and (ENGL 1130 with a minimum grade of D- or ENGL 2950 with a minimum grade of D-)

**Term Offered:** Spring

**CET 2250 Structural Design**

[4 credit hours]

This course covers the principles of statics and strength of materials as applied to structural design of steel and timber products, using applicable codes. Applications of both allowable stress, load factored design and unified design methods will be covered for both spanning and axial elements.

**Prerequisites:** CET 1200 with a minimum grade of D-

**Term Offered:** Spring

**CET 2980 Special Topics**

[1-4 credit hours]

Student performs work on a specialized project of an advanced nature under the supervision of a Construction Engineering Technology faculty member.

**Term Offered:** Spring, Fall

**CET 3010 Architectural CADD**

[4 credit hours]

This course is designed as an introduction to digital architectural documentation techniques for design, building and lifecycle building maintenance. The course explores techniques using both traditional CAD approaches as well as BIM and parametric modeling. The course emphasizes methods and procedures of AutoCAD, parametric modeling through Bentley Building and AutoCAD for Architecture and develops greater skills in BIM through Autodesk's Revit.

**Prerequisites:** CET 1100 with a minimum grade of D-

**Term Offered:** Spring, Fall

**CET 3020 Sustainability for Construction**

[3 credit hours]

This course is an introduction to sustainable design, green building and the LEED rating system. Roles of engineers and constructors are examined within the integrated design approach to green building and sustainable design. Topics covered include sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor air quality and innovative design. The course is structured as a way to prepare for the LEED Green Associate exam.

**Prerequisites:** CET 1150 with a minimum grade of D- and CET 1250 with a minimum grade of D-

**Term Offered:** Spring

**CET 3120 Advanced Construction Materials**

[3 credit hours]

This course focuses on the design and construction of ground based structures such as flexible and rigid pavements, floor slabs and buried pipe loading. Coverage of the construction and preparation of soil is also covered in order to provide a quality subgrade upon which to construct the items. Standard industry manuals and procedures are used to complete design problems.

**Prerequisites:** (CET 2220 with a minimum grade of D- and CET 2110 with a minimum grade of D-)

**Term Offered:** Spring

**CET 3160 Contracts and Specifications**

[3 credit hours]

This course includes the review and understanding of construction contract documents and relationship of drawings, specifications, scheduling, and contracts. This course also includes the review and dissemination of construction specifications for purposes of defining scopes of work.

**Prerequisites:** CET 1100 with a minimum grade of D- and CET 1150 with a minimum grade of D- and (ENGL 1130 with a minimum grade of D- or ENGL 2950 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**CET 3210 Surveying Applications**

[0-3 credit hours]

This course covers the study of surveys for construction layout and mapping, including traverses, horizontal and vertical curves and boundaries. The laboratory stresses the organization of projects under actual field conditions using total stations and data collectors. Hand and computer solutions will be used to solve field problems.

**Prerequisites:** CET 1210 with a minimum grade of D-

**Term Offered:** Fall

**CET 3220 Hydrology And Hydraulics**

[3 credit hours]

This course is designed to give an understanding of basic hydraulic principles as they pertain to stormwater management; from estimating runoff volumes, to channeling the stormwater in conduits and open channels, to detaining flows to reduce downstream flooding and reducing the effects of erosion due to concentrated stormwater flow. The course will utilize numerous methods including manual and computer-aided design tools.

**Prerequisites:** CET 2030 with a minimum grade of D-

**Term Offered:** Spring

**CET 4250 Advanced Structural Design**

[4 credit hours]

This course deals with the design of reinforced concrete structural elements as well the principles of masonry design in accordance with applicable standards and codes. The design of temporary structures for use during construction will also be introduced.

**Prerequisites:** CET 2250 with a minimum grade of D-

**Term Offered:** Fall

**CET 4350 Soils, Foundations And Earth Structures**

[3 credit hours]

This course covers the application of advanced soil mechanics topics which allow for proper design and analysis of foundations. Bearing capacity, shallow and deep foundations (both piles and drilled shafts) as well as soil settlement and slope stability are emphasized. Retaining wall design is also covered.

**Prerequisites:** (CET 2250 with a minimum grade of D- and CET 2220 with a minimum grade of D-)

**Term Offered:** Spring

**CET 4460 Construction Management And Scheduling**

[3 credit hours]

The course focuses on learning the basics of producing construction schedules based on cost estimates and work breakdown structures. Different scheduling methods will be investigated along with associated management techniques needed to plan, track, control and adjust schedules to project conditions.

**Prerequisites:** CET 2060 with a minimum grade of D- and CET 3160 with a minimum grade of D-

**Term Offered:** Spring, Fall

# COUNSELING (COUN)

## COUN 1110 Fundamentals Of Human Mental Health

[4 credit hours]

An introduction to the field of human services, especially mental health, history and current trends in treatment and prevention of disease and the basic skills common to the field. Students will learn skills at the demonstrable level as they will later be used in the field.

**Term Offered:** Spring, Fall

## COUN 1210 Mental Health Skills

[4 credit hours]

This course is designed to enable students to master the therapeutic interpersonal skills required of mental health professionals. Successful completion of this course is a requirement for continuation into advanced courses.

**Prerequisites:** (COUN 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-) or (CMHS 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-)

## COUN 1220 Theories In Mental Health

[3 credit hours]

An overview of current approaches of psychological theory. This course includes an examination of the basic issues in mental health, including ethical issues and personal implications for the mental health professional.

**Prerequisites:** (COUN 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-) or (CMHS 1110 with a minimum grade of D- and PSY 1010 with a minimum grade of D-)

## COUN 1230 Pathology In Mental Health

[3 credit hours]

This course deals with an introduction to the concepts of abnormal psychology with emphasis on understanding the cultural and historical bases for defining abnormality as well as modern classification systems, the biological model, treatment modalities and theoretical perspectives.

**Prerequisites:** PSY 1010 with a minimum grade of D-

## COUN 1240 Substance Abuse Issues In Mental Health

[3 credit hours]

An overview and survey of addictive disorders, use and abuse, and the personal and cultural effects of chemical dependency.

**Term Offered:** Spring, Fall

## COUN 2060 Career Exploration

[3 credit hours]

Designed for the university student undecided about a career. The student is assisted in self-assessment, exploration of occupations and in career decision-making skills.

## COUN 2120 Group And Therapeutic Approaches

[4 credit hours]

A study of various types of groups and activity skills used in mental health environments both inpatient and community based. Focus on design, principles, procedures and applications of various techniques.

**Term Offered:** Fall

## COUN 2130 Assessment And Intervention In Mental Health

[4 credit hours]

The various techniques and requirements of assessment and interventions used in the most important mental health environments will be explored and practiced. Special emphasis is placed on interview assessment and crisis intervention; implications for record keeping in the variety of settings are also examined.

**Prerequisites:** PSY 1010 with a minimum grade of D-

## COUN 2220 Family Theories And Cultural Influences In Mental Health

[3 credit hours]

Study of basic family systems and structures and the influences of cultural patterns as they interact and impact the mental health and therapeutic needs of individual family members.

**Term Offered:** Spring

## COUN 2940 Mental Health Internship

[4 credit hours]

Students are placed in community agencies relevant to mental health and work in a role related to the function of a mental health technician under the guidance of a supervisor.

**Prerequisites:** COUN 1210 with a minimum grade of B or CMHS 1210 with a minimum grade of B

## COUN 2980 Special Topics In Counselor Education

[1-3 credit hours]

This course is open to an undergraduate student pursuing a degree program and may be a requirement of that program.

## COUN 2990 Independent Study

[1-3 credit hours]

A course designed to provide educational opportunities in a specialized academic area under the direct supervision of a faculty member.

## COUN 3070 Family Counseling

[3 credit hours]

Overview of aspects of counseling with families. Major focus is on family as a system and a variety of interventions. Ethnic, gender and socioeconomic considerations of family systems will be stressed.

## COUN 3110 Case Management In Mental Health

[3 credit hours]

The study of and practice of using case management models and skills with clients within the mental health environment. Models appropriate for different agency types will be explored and the various modalities available will be introduced.

**Term Offered:** Spring

## COUN 3120 Mental Retardation And Mental Health

[3 credit hours]

The relationship between retardation and mental health with emphasis on the characteristics making this a population of special concern within the treatment protocols of the mental health profession.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 3130 Advanced Interventions: Crisis And Employee Assistance Programs**

[3 credit hours]

Advanced intervention issues including crisis management, disaster survival, rescue and emergency personnel debriefing and Employee Assistance Programs.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 3140 Substance Abuse Prevention And Community Programming**

[3 credit hours]

An evaluation of prevention programs and community resources available in the prevention and treatment of substance abuse.

**Term Offered:** Fall

**COUN 3150 Models Of Treatment For Substance Abuse**

[3 credit hours]

A review of the various components of substance abuse and philosophies of treatment. Theories of etiology and maintenance are also addressed.

**Term Offered:** Spring

**COUN 3160 Charting And Reporting In The Mental Health Professions**

[3 credit hours]

The importance of coding, charting and record keeping in various fields of mental health professions is examined. Various types of report writing formats and requirements will be learned.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 3220 Theories in Mental Health**

[3 credit hours]

Overview of current approaches of psychological theory. This course includes an examination of the basic issues in mental health, including ethical issues and personal implications for the mental health professional.

**Term Offered:** Fall

**COUN 3230 Pathology in Mental Health**

[3 credit hours]

Introduction to the concepts of psychopathology with emphasis on understanding the cultural and historical bases for defining abnormality, modern classification systems, the biological model, treatment modalities and theoretical perspectives.

**COUN 3380 College Student Leadership Development I**

[1-3 credit hours]

First semester in development of skills for student leaders through didactic experience, simulation exercises and practicum experiences. Especially designed for student government leaders and peer counselor/advisers.

**Term Offered:** Fall

**COUN 3390 College Student Leadership Development II**

[1-3 credit hours]

Second semester in student leadership training. The development of skills for student leaders through didactic experience, simulation exercises and practicum experiences. Especially designed for student government leaders and peer counselor/advisers.

**Prerequisites:** COUN 3380 with a minimum grade of D- or CMHS 3380 with a minimum grade of D-

**Term Offered:** Spring

**COUN 3940 Substance Abuse Internship**

[4 credit hours]

Students are placed in community agencies working in the area of substance abuse under the guidance of a supervisor.

**Prerequisites:** (COUN 2940 with a minimum grade of B and COUN 4240 with a minimum grade of B and COUN 4940 with a minimum grade of B ) or (CMHS 2940 with a minimum grade of B and CMHS 4240 with a minimum grade of B and CMHS 4940 with a minimum grade of B )

**COUN 4080 Essentials Of Helping Relationships**

[3 credit hours]

Emphasis upon skills, concepts and practices in the helping professions. Multicultural and ethical issues along with dealing with crisis situations will be covered.

**COUN 4090 Therapeutic Environments For The Aged**

[3 credit hours]

This course focuses on therapeutic care giving for the aged in institutional settings, addressing techniques for developing activities and responding to sensory changes and social needs of individuals.

**COUN 4110 Consultation And Supervision In Mental Health Services**

[3 credit hours]

Explores the roles and techniques of consultation and supervision within the mental health professions, including individual and group skills, models, strategies and legal and ethical issues.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 4120 Dual Diagnosis: Substance Abuse And Mental Illness**

[3 credit hours]

Issues involving clients with a dual diagnosis are explored. Specific treatment strategies for clients dually-diagnosed with substance abuse and mental illness will be learned.

**Prerequisites:** COUN 1110 with a minimum grade of D- or CMHS 1110 with a minimum grade of D-

**COUN 4240 Substance Abuse Treatment Techniques**

[3 credit hours]

An examination of ethical and legal issues in substance abuse, as well as examination of the specific skills needed by workers in substance abuse programs.

**Term Offered:** Spring

**COUN 4580 Teacher As Advisor**

[3 credit hours]

Introduction to group process, interpersonal and communication skills for teachers in the middle school. Introduction to consultation and collaboration skills for working with counselors, teachers, parents and other resource personnel.

**Prerequisites:** Upper Division with a score of 1

**COUN 4940 Advanced Internship**

[4 credit hours]

Students are placed in community agencies relevant to mental health and work in a role related to the function of an advanced level mental health technician under the guidance of a supervisor.

**Prerequisites:** (COUN 2940 with a minimum grade of B and COUN 3110 with a minimum grade of B ) or (CMHS 2940 with a minimum grade of B and CMHS 3110 with a minimum grade of B )



**COUN 4980 Special Topics In Counselor Education**

[1-3 credit hours]

This course is open to an undergraduate student pursuing a degree program and may be a requirement of that program.

**COUN 4990 Independent Study**

[1-3 credit hours]

Individual study is designed to provide the student to work independently on professional problems under the direction of a faculty member in the department of counseling and mental health services.

# CRIMINAL JUSTICE (CRIM)

## CRIM 1010 Criminal Justice

[3 credit hours]

The overall history, philosophy and functioning of the criminal justice system in the U.S. The integrated roles of law enforcement, the courts and corrections will be analyzed and discussed.

**Term Offered:** Spring, Fall

## CRIM 1040 HUMAN RELATIONS AND DIVERSITY IN CRIMINAL JUSTICE

[3 credit hours]

This class will focus on human relations and cultural diversity faced by the criminal justice system, including the police, courts, corrections, and community organizations, and the course will explore general principles in effective human relations, the importance of diversity, and their application in the field of criminal justice.

**Term Offered:** Spring, Fall

## CRIM 1110 Penology

[3 credit hours]

The study of jails, prisons and other types of specialized correctional institutions. The philosophy of incarceration along with the administration, staffing and operations of these facilities will be reviewed.

**Term Offered:** Spring, Fall

## CRIM 1240 Policing

[3 credit hours]

Introduction to law enforcement practices and agencies in the United States, including the history, philosophy and operation of federal, state and local enforcement agencies.

**Term Offered:** Spring, Fall

## CRIM 2050 Applied Criminology

[3 credit hours]

This course examines the theoretical causes of crime in relation to the duties and responsibilities of police and corrections personnel, and the development of criminal justice policies.

**Term Offered:** Spring, Summer, Fall

## CRIM 2200 Criminal Law

[3 credit hours]

The statutes of Ohio relating to crime and the elements necessary for establishing and providing proof of crimes are studied.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## CRIM 2210 Criminal Investigation I

[3 credit hours]

Introduction to the processes, theories and principles of criminal investigation. Methods of gathering information, report writing, interview/interrogation strategies, surveillance, search warrant information, affidavit preparation and execution are studied.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Fall

## CRIM 2220 Laws Of Evidence

[3 credit hours]

A thorough study of the evidence rules with specific emphasis on the application of these rules in preparing and presenting evidence.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CRIM 2230 Criminal Procedure

[3 credit hours]

An examination of the Bill of Rights of the U.S. Constitution as it appears to arrest, search, seizure, detention, interviews, and interrogations.

**Term Offered:** Spring, Summer, Fall

## CRIM 2250 Juvenile Justice

[3 credit hours]

To analyze the causes of juvenile delinquency and the extent of the problem in the U.S. Also, to discuss the inter-workings of the juvenile justice system in response to the delinquency problem, in conjunction with delinquency prevention programs.

**Term Offered:** Spring, Summer, Fall

## CRIM 2990 Independent Study

[1-6 credit hours]

Supervised independent study.

**Term Offered:** Spring, Fall

## CRIM 3000 Police Academy

[1-15 credit hours]

This course provides students with an experiential learning opportunity in the field of policing.

## CRIM 3110 Hate Crimes

[3 credit hours]

The course examines the genesis, development, theory and practice of hate crimes and how society has and can respond to hate crimes.

**Term Offered:** Summer, Fall

## CRIM 3210 Applied Psychology for Criminal Justice Personnel

[3 credit hours]

This course overviews mental disorders and substance abuse problems common to persons entering the criminal justice system. Related social policies and criminal justice practices are critically examined.

**Term Offered:** Spring, Summer, Fall

## CRIM 3220 Crime Mapping And Criminal Profiling

[3 credit hours]

The course content develops an understanding of the uses of information technologies and psychological profiling in defining criminal behavior as well as the geographic consideration.

## CRIM 3230 White Collar Crime

[3 credit hours]

A historical overview of the evolution of white-collar crime in American Society as well as an understanding of the nature, causes and consequences of different forms of white-collar crime.

## CRIM 3240 Victimology

[3 credit hours]

This course examines the history of victimology and includes topics such as the characteristics of crime victims and specific types of victimization such as hate crimes and sexual assault.

**Prerequisites:** CRIM 1010 with a minimum grade of D-

**Term Offered:** Summer, Fall

## CRIM 3250 Women and Crime

[3 credit hours]

This course will explore the causes and social consequences of crimes by and against women. The course will expose students to feminist theory and examine the interlocking effects of gender, race and class.

**Term Offered:** Fall

**CRIM 3290 Criminal Investigation II**

[3 credit hours]

An introduction to the crime scene, including methods of searching, photography, sketching and gathering of physical evidence. Fingerprint analysis. Methods utilized in drug investigations and development of information sources are studied.

**Prerequisites:** CRIM 2210 with a minimum grade of D-

**Term Offered:** Spring

**CRIM 3300 Sex Crimes**

[3 credit hours]

Overview of a variety of sex crimes, characteristics of sexual predators, theories to explain sex crimes, and current legislation and treatment efforts utilized today to combat sex crimes.

**CRIM 4000 Narcotics Policy and Enforcement**

[3 credit hours]

This course will explore the "War on Drugs" from a historical, pharmacological, economic, political, and practical perspective.

**Term Offered:** Spring

**CRIM 4010 Probation and Parole**

[3 credit hours]

An introduction to the history and dynamics of probation and parole, how they interact within the criminal justice system, and the effective treatment of offender clients.

**Term Offered:** Spring

**CRIM 4100 Criminal Justice Research Methods**

[3 credit hours]

This course provides students with an understanding of criminal justice research, the concepts and logic of research designs and widely used statistical procedures.

**Term Offered:** Spring, Summer, Fall

**CRIM 4200 Ethics In Criminal Justice**

[3 credit hours]

This course is designed to provide students with an opportunity to integrate ethics in their understanding of criminal justice.

**Term Offered:** Spring, Summer, Fall

**CRIM 4300 Theories Of Criminal Justice**

[3 credit hours]

A critical study and appreciation of the theories of criminal justice, including micro and macro theories.

**Term Offered:** Spring, Summer

**CRIM 4410 Criminal Forensic and Trial Practice**

[3 credit hours]

This cross-listed capstone course will allow students to step out of the traditional classroom setting and participate in an applied skills course that will benefit them in the real world of Criminal Justice. Students will be presented with a case and will be responsible for the various stages of the investigative process as well as the trial process.

**Prerequisites:** CRIM 2210 with a minimum grade of D- and CRIM 3290 with a minimum grade of D-

**CRIM 4450 Administration Of Police Services**

[3 credit hours]

The application of management principles to municipal police departments, emphasizing the resources, constraints and strategies of police managers.

**Term Offered:** Spring, Summer, Fall

**CRIM 4490 Current Topics-Crim**

[3 credit hours]

This cross-listed capstone course will allow students to step out of the traditional classroom setting and participate in an applied skills course that will benefit them in the real world of Criminal Justice. Students will be presented with a case and will be responsible for the various stages of the investigative process as well as the trial process.

**Term Offered:** Spring, Summer, Fall

**CRIM 4520 Police And Society**

[3 credit hours]

An examination of the role of the police in contemporary America, emphasizing the ambivalence of the self-image of the police and the social and political forces that compete to redefine police function.

**Term Offered:** Summer, Fall

**CRIM 4590 Administration Of Criminal Justice**

[3 credit hours]

General systems approach to criminal justice from an organizational and legal perspective with emphasis on the interaction of the major components-police, prosecutors, courts and corrections.

**Term Offered:** Spring, Fall

**CRIM 4940 Criminal Justice Internships**

[3-12 credit hours]

Field placement experience within a criminal justice agency to enhance the student's practical knowledge of the field in conjunction with career planning opportunities.

**Term Offered:** Spring, Summer, Fall

**CRIM 4990 Independent Study In Criminal Justice**

[1-3 credit hours]

Individual course of study in a selected topic pertaining to Criminal Justice chosen by the student, with the consent of the instructor.

**Term Offered:** Spring, Summer, Fall

# CURRIC AND INSTR: ERLY CHILDHD (CIEC)

## CIEC 3200 Early Childhood Education: Philosophy And Practice [3 credit hours]

The course emphasizes the role, attitude and characteristics of the effective teacher of young children.

**Term Offered:** Spring, Summer, Fall

## CIEC 3250 Public Policy And Advocacy Issues In Early Childhood [2 credit hours]

Designed to heighten an awareness about the effect of public policy on young children, their educational opportunities and their parents and sensitize students to advocacy and its many manifestations.

## CIEC 3310 Curriculum And Methods For Preschool Education [4 credit hours]

In-depth study of curriculum development, designing learning environments and anti-bias procedures for preschool children. Students will plan and implement learning activities in field placement.

## CIEC 3320 Play And Learning [3 credit hours]

A study of the young child's play and its relationship to learning. Students will design activities and a socio-dramatic play kit to facilitate play in assigned early childhood settings.

## CIEC 3350 Child, Family & Public Policy In Early Childhood [3 credit hours]

This course is designed to establish awareness of public policy issues and advocacy techniques, knowledge of family systems, effective home/school communication and collaborative procedures.

**Term Offered:** Spring, Summer, Fall

## CIEC 3380 Field Experience: Socio-Cultural Dimensions Of Education [3 credit hours]

This course is designed to explore the socio-cultural context of the school, family and community as important influences in learning. Students will be assigned to work with a family, gather data and information about their field sites and attend IEP and IFSP conferences.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

## CIEC 3600 Creating Effective Learning Environments [9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in ECE and explores foundational principles and research in curricula for children from infancy to age 5.

**Corequisites:** CIEC 3610

**Term Offered:** Spring, Summer, Fall

## CIEC 3610 Field: Creating Effective Learning Environments [7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments for young children. This field experience is part of the non-licensure "Fast-Track" ECE program.

**Corequisites:** CIEC 3600

**Term Offered:** Spring, Summer, Fall

## CIEC 3700 Early Literacy, Language, and Social Studies [9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in Early Childhood Education and provides an integrated study of social studies and literacy development and instructional practices in early childhood education.

**Prerequisites:** CIEC 3600 with a minimum grade of C and CIEC 3610 with a minimum grade of C

**Corequisites:** CIEC 3710

**Term Offered:** Spring

## CIEC 3710 Field Early Literacy, Language and Social Studies [7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments and activities related to the learning of the literacy and social studies for young children. This field experience is part of the non-licensure "Fast-Track" ECE program.

**Prerequisites:** CIEC 3600 with a minimum grade of C and CIEC 3610 with a minimum grade of C

**Corequisites:** CIEC 3700

**Term Offered:** Spring

## CIEC 3900 Ece Linking Seminar III [1 credit hour]

A culminating reading and discussion seminar that continues and intensifies the activities of earlier seminars (CIEC 1900 and 2900). Emphasis will be on transforming the content of the Humanities, Sciences and Social Sciences into appropriate Early Childhood curriculum.

## CIEC 4070 Effective Teaching Practices, Pre-K To 3rd Grade [3 credit hours]

This course is designed to apply characteristics of best practice to curriculum development and implementation with adherence to the national and state curriculum standards as they apply to children, age 3 to 8, with diverse educational needs.

**Prerequisites:** Upper Division with a score of 1 and CIEC 3200 with a minimum grade of C and CIEC 4340 with a minimum grade of C

**Term Offered:** Spring, Fall

## CIEC 4150 Setting The Stage For Early Childhood Learning: Inspirations From Reggio Emilia [3 credit hours]

This course will explore Reggio's philosophy of early childhood education and the numerous ways that children explore the "hundred languages." Reggio uses these languages (art, clay, wire, sculpture, light, shadow, etc.) as a way to help children represent their world and what they know about it.

**Term Offered:** Spring, Summer

## CIEC 4340 Infant/Toddler Curriculum [3 credit hours]

Sequential development of the young child from birth to 3 years. Taken in conjunction with placement in early childhood setting, permitting opportunities to participate in the caregiving of infants/toddlers.

**Term Offered:** Spring, Summer, Fall

**CIEC 4460 Science Methods For Early Childhood Education**

[3 credit hours]

This course is designed to help teachers of science in grades Pre-Kindergarten through third to understand the concepts, ideas and applications of science in the real world. Students will learn how scientific thinking involves collecting data, analyzing data, making decisions and taking action based on those decisions. Students will learn how to plan effective science experience for young children that cause them to explore environments and act upon their discoveries. Students will learn how to assess the scientific thinking of young children appropriately, using formal and informal strategies.

**Prerequisites:** CIEC 4480 (may be taken concurrently) with a minimum grade of C

**Corequisites:** CIEC 3380

**Term Offered:** Spring, Fall

**CIEC 4480 Field Experience: Cohort I**

[3 credit hours]

This course aligns with all Cohort I coursework in the undergraduate Early Childhood Teacher Licensure Program.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CIEC 4550 Teaching Methods For Early Childhood Social Studies**

[3 credit hours]

In depth study of methods and materials for teaching social studies from pre-school to third grade. Implementation of early childhood curriculum with the context of current technology and the development of critical thinking skills.

**Prerequisites:** (CIEC 3200 with a minimum grade of C and EDP 3210 with a minimum grade of C)

**Term Offered:** Spring, Fall

**CIEC 4600 Supporting ECE Science and Mathematics**

[9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in Early Childhood Education and explores the study of math and science teaching practices in preschool education (ages birth to five).

**Prerequisites:** CIEC 3700 with a minimum grade of C and CIEC 3710 with a minimum grade of C

**Corequisites:** CIEC 4610

**Term Offered:** Fall

**CIEC 4610 Field Supporting ECE Science and Mathematics**

[7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments and activities related to the learning of mathematics and science for young children (infants, toddlers, or preschoolers). This field experience is part of the non-licensure "Fast-Track" ECE program.

**Prerequisites:** CIEC 3700 with a minimum grade of C and CIEC 3710 with a minimum grade of C

**Corequisites:** CIEC 4600

**Term Offered:** Fall

**CIEC 4750 Developmental Assessment In Early Childhood**

[3 credit hours]

This course focuses on methods of assessment in early childhood classrooms. Issues covered include methods of observation, interpreting formal assessment results and using information gained from assessment to plan curriculum.

**Term Offered:** Spring, Fall

**CIEC 4770 Practicum: Primary Grades**

[3 credit hours]

Practicum experience in primary grade settings (grades K-3) where students will observe, plan, implement and evaluate activities.

**Term Offered:** Spring, Fall

**CIEC 4900 Internship/Student Teaching Seminar**

[3 credit hours]

A seminar designed to reflect on the student teaching experience and to enhance the student teacher's final preparation for employment.

Professional issues, ethical behavior, resume and interview techniques and other processes and professional entry concerns. For early childhood student teachers.

**Prerequisites:** Upper Division with a score of 1

**Corequisites:** CIEC 4930

**Term Offered:** Spring, Fall

**CIEC 4930 Internship/Student Teaching**

[8-16 credit hours]

Planned experience in public school classrooms under direction of University supervisor. Observation of teaching of experienced teacher; gradual acceptance of full responsibility by student teacher for planning, instruction, evaluation and related duties.

**Prerequisites:** Upper Division with a score of 1

**Corequisites:** CIEC 4900

**Term Offered:** Spring, Fall

**CIEC 4950 Workshop I Early Childhood Education**

[1-5 credit hours]

Workshop developed around topics of interest and concern for pre-service and in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.

**CIEC 4980 Special Topics In Early Childhood Education**

[1-5 credit hours]

Topics of interest and concern to preservice, inservice and non-degree teachers within districts and community agencies served by the Center for Educational Development. May be included in an undergraduate degree program.

**Term Offered:** Spring

**CIEC 4990 Undergraduate Independent Study In Early Childhood Education**

[1-5 credit hours]

Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of the Early Childhood faculty.

**Term Offered:** Spring, Fall



# CURRICULUM AND INSTRUCTION (CI)

## CI 3400 Foundations of Literacy

[3 credit hours]

An introduction to contemporary literacy instruction to (a) develop a deep understanding of the central role literacy plays in education, (b) understand the theoretical and evidence-based foundations of reading and writing processes and instruction and, (c) develop awareness, understanding, respect, and a valuing of differences in our society as they relate to literacy instruction. Issues related specifically to the needs of English Language Learners and learners with dyslexia introduced.

**Term Offered:** Spring, Summer, Fall

## CI 3430 Phonics And Word Identification For Early Childhood Education

[3 credit hours]

Phonological and morphological underpinnings of English spelling, reading disabilities such as dyslexia, sound awareness in spoken language examined. Instructional approaches for assessing and teaching phonics, word recognition, and vocabulary introduced. Extensive use of case study data included.

**Prerequisites:** CI 3400 with a minimum grade of D-

**Term Offered:** Spring, Fall

## CI 3440 Phonics And Word Identification For Middle Childhood Education

[3 credit hours]

Phonological and morphological underpinnings of English spelling, reading disabilities such as dyslexia, sound awareness in spoken language examined. Instructional approaches for assessing and teaching phonics, word recognition, and vocabulary introduced. Extensive use of case study data included.

**Prerequisites:** CI 3400 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## CI 3460 Literacy And Reading Development For Young Children

[3 credit hours]

An examination of professional standards for literacy/language arts with specific attention to diverse learners preK through grade 3. Developmentally-appropriate classroom design and methods including Readers' and Writers' Workshop, Guided Reading, Interactive Read Alouds, Interactive Writing, and Integrated Inquiry. Attention to instructional and cognitive strategies as well as reading-writing connections and oral language development.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

## CI 4050 Teaching Methods in Middle Grades English Language Arts

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle grades English Language Arts.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4320 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

## CI 4060 Teaching Methods in Middle Grades Mathematics

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle mathematics.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4320 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

## CI 4070 Teaching Methods in Middle Grades Science

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle grades science.

**Prerequisites:** CI 4190 with a minimum grade of D- and CI 4680 with a minimum grade of D- and Upper Division with a score of 1 and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

## CI 4080 Teaching Methods in Middle Grades Social Studies

[3 credit hours]

In-depth study of the methods, standards and materials for teaching middle grades social studies.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4720 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring

## CI 4110 Developing Instruction for Middle Grades 4-5 Literacy and Social Studies

[3 credit hours]

A course in pedagogy and content for pre-service teachers currently working on Ohio's Early Childhood PK-3 licensure program and licensed teachers who have completed Ohio's Early Childhood PK-3 licensure program and are seeking to extend their license to be eligible to teach all content in grades four and five. The course will focus on the English language arts and social studies as outlined in the Ohio Academic Content Standards.

**Term Offered:** Spring, Fall

## CI 4120 Developing Instruction in Mathematics and Science for Grades 4-5

[3 credit hours]

A course in pedagogy and content for pre-service teachers currently working on Ohio's Early Childhood PK-3 licensure program and licensed teachers who have completed Ohio's Early Childhood PK-3 licensure program and are seeking to extend their license to be eligible to teach all content in grades four and five. The course will focus on mathematics and science as outlined in the Ohio Academic Content Standards.

**Term Offered:** Spring, Fall

## CI 4140 Teaching Methods For Foreign Languages

[3 credit hours]

Consideration of current theory and practice in teaching foreign languages in elementary and secondary schools. Focus on planning instruction, materials selection and methods for teaching communication skills and culture.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Fall

**CI 4150 Methods of Teaching AYA English Language Arts**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching English Language Arts at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4320 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4160 Methods of Teaching AYA Mathematics**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching mathematics at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4550 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4170 Methods of Teaching AYA Science**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching science at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4680 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4180 Methods of Teaching AYA Social Studies**

[3 credit hours]

In-depth study of the methods, standards and materials for teaching social studies at the secondary level.

**Prerequisites:** CI 4190 with a minimum grade of C and CI 4720 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4290

**Term Offered:** Spring, Fall

**CI 4190 Practicum I**

[3 credit hours]

Teacher candidates will be immersed in a classroom studying the student as a learner of content and the classroom as community. Teacher candidate will co-teach lessons and independently teach two or more lessons.

**Prerequisites:** (CI 4320 (may be taken concurrently) or CI 4680 (may be taken concurrently) or CI 4720 (may be taken concurrently) or CI 4550 (may be taken concurrently)) and Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4210 Advanced Teaching Methods in Middle Grades English Language Arts**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle grades English language arts.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4050 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4220 Advanced Teaching Methods in Middle Grades Mathematics**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle mathematics.

**Prerequisites:** CI 4060 with a minimum grade of C and CI 4290 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4230 Advanced Teaching Methods in Middle Grades Science**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle science.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4070 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4240 Advanced Teaching Methods in Middle Grades Social Studies**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in middle grades social studies.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4080 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Fall

**CI 4250 Advanced Methods of Teaching AYA English Language Arts**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary English language arts.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4150 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4260 Advanced Methods of Teaching AYA Mathematics**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary mathematics.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4160 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4270 Advanced Methods of Teaching AYA Science**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary science.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4170 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4280 Advanced Methods of Teaching AYA Social Studies**

[3 credit hours]

The focus of this course is advanced planning and methods with special attention placed on the varied needs of students, disciplinary specific assessment, and related current issues in secondary social studies.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4180 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4390

**Term Offered:** Spring, Fall

**CI 4290 Practicum II**

[3 credit hours]

Teacher candidates will continue field placement studying the role of the teacher and community in learning as well as a variety of students.

Teacher candidate will co-teach lessons and independently teach two small units of study.

**Prerequisites:** CI 4190 with a minimum grade of C and Upper Division with a score of 1 and (CI 4050 (may be taken concurrently) or CI 4060 (may be taken concurrently) or CI 4070 (may be taken concurrently) or CI 4080 (may be taken concurrently) or CI 4150 (may be taken concurrently) or CI 4160 (may be taken concurrently) or CI 4170 (may be taken concurrently) or CI 4180 (may be taken concurrently))

**Term Offered:** Spring

**CI 4300 Literature For Children**

[3 credit hours]

Emphasis on all genres of literature for children, including poetry, traditional literature, fantasy, realistic fiction, biography and other information books, particularly for early childhood and middle grades learners. Instructional strategies for engaging learners with children's literature and ways of increasing home-school connections through use of children's literature also introduced.

**Term Offered:** Spring

**CI 4320 Literature For Young Adults**

[3 credit hours]

Survey of literature materials written for the junior and senior high school student. Emphasis is placed on all genres, literary elements and the use of literature across the curriculum.

**Prerequisites:** Upper Division with a score of 1 and CI 4190 (may be taken concurrently)

**Term Offered:** Spring, Fall

**CI 4390 Practicum III**

[3 credit hours]

Candidate will be placed in their student teaching site(s) and focus on developing and teaching instructional unit(s) in their licensure area(s) with a focus on the role of assessment throughout the planning-teaching-reflection process.

**Prerequisites:** CI 4290 with a minimum grade of C and Upper Division with a score of 1 and (CI 4210 (may be taken concurrently) or CI 4220 (may be taken concurrently) or CI 4230 (may be taken concurrently) or CI 4240 (may be taken concurrently) or CI 4250 (may be taken concurrently) or CI 4260 (may be taken concurrently) or CI 4270 (may be taken concurrently) or CI 4280 (may be taken concurrently))

**Term Offered:** Fall

**CI 4400 Reading In Middle Grades**

[3 credit hours]

Using various genres of literature, students focus on instructional approaches across the curriculum for supporting middle grades students to become literate in multiple subject domains. Teaching methods to support comprehension of text-based content-area materials and writing across the curriculum emphasized. Attention to instructional and cognitive strategies as well as reading-writing connections and oral language development.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4430 Issues In Second Language Teaching**

[3 credit hours]

A critical study of teaching foreign languages and English as a second language in secondary schools including current curriculum, materials, teaching strategies and evaluation.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring

**CI 4470 Literacy Assessment and Remediation**

[3 credit hours]

Examine current literacy practices in assessment and remediation. Emphasis on knowledge and skill needed to diagnose and assess students in reading and writing by working with an at-risk learner in a public school setting. Apply word identification, comprehension, fluency, vocabulary and writing instructional strategies for supporting readers in an experiential learning environment.

**Prerequisites:** CI 3430 with a minimum grade of D- or CI 3440 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**CI 4490 Content Area Reading For Adolescent Young Adult, Multi-Age, And Career And Technical Education Teach**

[3 credit hours]

Study of the integration of reading comprehension, writing, oral language and word skill development in content reading. Attention will be given to instructional methods as well as assessment practices.

**Term Offered:** Spring, Summer, Fall

**CI 4510 Mathematics For The Young Child**

[3 credit hours]

Development of mathematical understanding in young children, appropriate learning and assessment experiences and analysis of curriculum. Mathematical focus on place value, number sense, geometry, measurement, algebra, data analysis and probability.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4550 Teaching Problem Solving In Mathematics**

[3 credit hours]

Focuses on the art of problem solving and its implementation in the classroom. Basic problem solving strategies are developed; materials and methods for their integration in mathematics teaching are provided.

**Prerequisites:** Upper Division with a score of 1 and CI 4190 (may be taken concurrently)

**Term Offered:** Fall

**CI 4640 Environmental Education**

[3 credit hours]

An experiential course for those interested in developing their knowledge and expertise in Environmental Education. Participants will develop a personal response to current environmental issues and learn how to help others do the same. Participants include teachers, naturalists, environmental science professionals and anyone interested in environmental education. The course will take a practical approach to the NAEE standards for environmental and conservation education as well as the NGSS and relevant Common Core State Standards.

**CI 4680 The Nature of Science**

[3 credit hours]

This course focuses on nature of science education as to teaching science and is designed for pre-service teachers.

**Prerequisites:** CI 4190 (may be taken concurrently) and Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4720 Best Practices for Teaching Social Studies**

[3 credit hours]

An introduction to lesson planning, pedagogy, and how these principles relate to the Social Studies classroom.

**Prerequisites:** Upper Division with a score of 1 and CI 4190 (may be taken concurrently)

**Term Offered:** Spring, Fall

**CI 4730 Seminar Managing the English Language Arts Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in English language arts education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** CI 4390 with a minimum grade of C and CI 4250 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4740 Seminar: Managing the Mathematics Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in mathematics education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** CI 4290 with a minimum grade of C and CI 4260 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4760 Seminar: Managing the Science Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in science education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** CI 4390 with a minimum grade of C and CI 4270 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4790 Seminar: Managing the Social Studies Classroom**

[3 credit hours]

A professional teaching and reflection seminar that places internship experience in the context of issues in Social Studies education including Ohio mandates for practicing teachers, classroom management, diverse learners and learning environments, and professional portfolio development.

**Prerequisites:** Upper Division with a score of 1 and CI 4390 with a minimum grade of C and CI 4280 with a minimum grade of C and Upper Division with a score of 1

**Corequisites:** CI 4930

**Term Offered:** Spring

**CI 4900 Student Teaching Seminar**

[2-4 credit hours]

Focuses reflectively on common experiences in Student Teaching. Attention to resume preparation, portfolio use, job interviews.

**CI 4930 Internship/Student Teaching**

[6-12 credit hours]

Full-time supervised classroom teaching for 8-15 weeks.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**CI 4950 Workshop In Curriculum And Instruction**

[1-5 credit hours]

Workshops developed around topics of interest and concern for pre-service and in-service teachers and other education personnel. Practical application of workshop topics will be emphasized.

**Term Offered:** Spring, Summer

**CI 4980 Special Topics In Curriculum And Instruction**

[1-5 credit hours]

Topics of interest and concern to preservice, inservice and non-degree teachers within school districts and community agencies. The course may be included in an undergraduate degree program.

**Term Offered:** Spring, Summer, Fall

**CI 4990 Undergraduate Independent Study In Curriculum And Instruction**

[1-5 credit hours]

Provides student the opportunity to work individually on professional problems under the direction of faculty in Curriculum and Instruction.

**Term Offered:** Spring, Summer, Fall

# DISABILITY STUDIES (DST)

## DST 2020 Introduction to Disability Studies

[3 credit hours]

An overview of the emergence of disability rights in the U.S. with an emphasis on the independent living movement, disability history, culture and representation in mass media. (Not for credit in the minor).

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## DST 2410 Introduction to Deaf Studies

[3 credit hours]

Introduces students to Deaf culture and history, varieties within deaf experiences, and contemporary issues shaping the lives of those with hearing impairments. Recommended: DST 2020.

## DST 2980 SPECIAL TOPICS IN DISABILITY STUDIES

[3 credit hours]

Special topics in Disability Studies. Topics vary by instructor; may be repeated for credit.

**Term Offered:** Fall

## DST 3030 Disability Culture

[3 credit hours]

An interdisciplinary exploration of the history and culture of disability, including the issues of stigmatizing and stereotyping, communication barriers and breakthroughs, educational segregation and mainstreaming and the experience of "passing."

**Prerequisites:** ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## DST 3060 U.S. Disability History

[3 credit hours]

This course provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States of America. We will consider how major historical forces such as capitalism, industrialization, colonialism, and democratic ideals have impacted and been shaped by people with disabilities.

**Term Offered:** Spring, Fall

## DST 3090 Disability in American Literature

[3 credit hours]

Disability In American Literature addresses a wide range of contemporary literary productions, including novels, graphic novels, plays, short stories, poetry, memoir, and personal essays, connecting these productions to an American literary genealogy and recognizing the deployment and resistance to ableism in American Literature. At the course's conclusion, students will be able to understand how literature interacts with cultural stereotypes, ultimately understanding how literature can be utilized for disability justice and social change.

**Term Offered:** Spring, Summer

## DST 3100 Disability and Chronic Illness

[3 credit hours]

This course investigates the relationship between chronic illness and disability, asking questions such as: Is chronic illness itself a disability? Does chronic illness cause disability? How do the social and medical models of disability affect our understanding of chronic illness? The course uses interdisciplinary texts (investigative journalism, memoir and literary nonfiction, philosophy, history, political science) to interrogate causes, treatments, cures and non-cures for people living with chronic illness.

**Term Offered:** Spring

## DST 3250 Disability and Life Narratives

[3 credit hours]

This course will examine a diverse selection of disability life narratives and consider what they reveal about disability and the dominant culture.

**Term Offered:** Fall

## DST 3700 Disability and Communication

[3 credit hours]

In this course we will explore several key communication aspects of disability in society. We will examine the rhetoric of disability, including the ways disability is conceptualized and talked about as well as the growth of disability movements; communication technology and disability; mass media and disability, including the ways the media portray people with disabilities and disability-related issues; and a number of other topics, including interpersonal communication issues around disability.

**Term Offered:** Spring, Fall

## DST 3980 Special Topics in Disability Studies

[3 credit hours]

Special topics in Disability Studies. Topics vary by instructor, may be repeated for credit.

**Term Offered:** Spring, Summer, Fall

## DST 4000 Global Issues in Disability Studies

[3 credit hours]

Special focus will be on global and contemporary issues as they arise in changing political and social environments. Geopolitical area of focus may vary based on instructor expertise.

**Term Offered:** Fall

## DST 4100 Disability and Sexuality

[3 credit hours]

Utilizing a cultural studies approach, this course investigates complex questions of how someone becomes understood as abnormal in contemporary culture. The course looks at the disability justice and LGBTQA+ justice; trans studies and disability studies; public health and private rights. The course uses interdisciplinary texts including memoir and life writing, philosophy, history, public health and sexuality studies to address questions central to disability justice and lived experience.

**Term Offered:** Spring, Fall

## DST 4200 Crip Arts, Crip Culture

[3 credit hours]

This course explores disability art across media and considers its relationships both with disability culture and with the culture-at-large.

**Term Offered:** Spring



**DST 4300 Disability and Children's Literature - WAC**

[3 credit hours]

Disabled characters and disability themes abound in texts presented to young readers. This course explores the use of disabled characters in a variety of nonfiction and fiction for young through young-adult readers.

**Term Offered:** Spring, Fall**DST 4400 Gender and Disability**

[3 credit hours]

This course examines gender and disability from both theoretical and lived perspectives, particularly as intersecting with other structures of power such as race, nationality, sexuality, and rights. Recommended: DST 2020, DST 3020.

**Term Offered:** Spring**DST 4500 Asylums, Prisons and Total Institutions**

[3 credit hours]

This course is an important addition to our curriculum that builds on the research focuses of both Dr. Ben-Moshe and other campus scholars. Institutionalization has been a major factor in the daily experiences and understandings of disability in U.S. culture.

**Term Offered:** Fall**DST 4640 Disability Law and Human Right**

[3 credit hours]

Explores the intersections between disability rights and human rights by examining the development, the ideological framework, and the legal contexts of disability law in the U.S. and global contexts. Recommended: DST 2020, 3020, 3030, or 3060.

**Term Offered:** Spring, Fall**DST 4800 Autism and Culture**

[3 credit hours]

This course examines the ongoing construction of autism and the autism spectrum, exploring the many controversies around this remarkable range of human conditions.

**Term Offered:** Spring, Summer**DST 4890 Disability Studies Research And Methodologies**

[3 credit hours]

An interdisciplinary exploration and review of research issues and methodologies suited to the study of disability.

**Prerequisites:** DST 2020 with a minimum grade of D-**Term Offered:** Spring, Fall**DST 4940 Internship In Disability Studies**

[3 credit hours]

This course is a service learning model internship with on-campus and/or community agencies addressing disability studies issues. Sites must be approved by the instructor.

**Prerequisites:** DST 2020 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**DST 4950 Independent Study**

[1-4 credit hours]

Students engage in independent research projects with the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall**DST 4960 Honors Thesis and Capstone Project**

[1-4 credit hours]

Independent study projects for students seeking departmental honors.

**Term Offered:** Spring, Summer, Fall**DST 4980 Special Topics in Disability Studies**

[3 credit hours]

This course allows Disability Studies minors to take disability studies-related courses for DST credit.

**Term Offered:** Spring, Fall**DST 4990 Capstone in Disability Studies**

[3 credit hours]

Provides students with an opportunity to engage with professionals and professors in a seminar format for the intensive study of a topic related to Disability Studies. The focus of the seminar will change from year to year.

**Prerequisites:** DST 2020 with a minimum grade of D-**Term Offered:** Spring, Fall

# EARTH ECOL AND ENVIRONMNTL SCI (EEES)

## EEES 1010 Physical Geology

[3 credit hours]

Introduction to the physical processes and composition of the Earth, including plate tectonics, internal structure, origin and classification of rocks and minerals, causes of geologic hazards such as earthquakes and volcanoes, surficial processes, water and natural resources, and geologic time. No credit if EEES2100 is taken. Natural sciences core course. Optional 1-credit lab, EEES 1020.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## EEES 1020 Introductory Geology Laboratory

[1 credit hour]

Investigations of fundamental geological processes, the materials of the Earth, and geologic time. Identification of rocks and minerals.

Interpretation of geologic features and processes from maps, aerial images and physical models. This lab supports the introductory geology courses EEES 1010, 1050 and 2100. Natural sciences lab core course.

**Prerequisites:** EEES 1010 (may be taken concurrently) with a minimum grade of D- or EEES 2100 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## EEES 1050 Geological Hazards And The Environment

[3 credit hours]

Introduction to risk mitigation involving hazardous geological processes and materials: volcanic eruptions, earthquakes, floods, ground subsidence and collapse, radon, asbestos and others.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

## EEES 1130 Down To Earth: Environmental Science

[3 credit hours]

Evaluation of environmental controversies using ecology, economics and human values. Issues range from global change, overpopulation, food production, pollution, disease, endangered species, to unique habitats including rainforests and coral reefs. (not for credit in the major)[Fall, Spring]. Natural Sciences core course.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## EEES 1140 Environmental Solutions Laboratory

[1 credit hour]

Basic scientific methods are used to conduct laboratory and field studies relevant to contemporary environmental issues.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

## EEES 1150 Marine Biology

[3 credit hours]

An exploration of life in the world's oceans, emphasizing how marine organisms thrive in broadly diverse environments. Topics include the major ocean habitats, and ecological relationships among associated flora/fauna.

**Term Offered:** Spring

Core Natural Sciences

## EEES 1160 Plants And Society

[3 credit hours]

This course centers on the importance of plants to our planet. Includes an introduction to botany and discussion of plants that provide food, materials, spices, medicines, drugs and poisons. (not for major credit)

Core Natural Sciences

## EEES 1170 Microbes And Society

[3 credit hours]

A survey course focused on how microbes impact everyday life including discussions of infectious disease, food safety, and bioterrorism. Natural Sciences core course.

**Term Offered:** Spring, Summer

Core Natural Sciences

## EEES 1180 Marine Biology Coral Reef Lab

[1 credit hour]

A virtual laboratory-based exploration of the coral reef environment and the dynamics of the coral reef ecosystem. The web of life on reefs will be examined at multiple levels, including living and non-living components and specialized roles among species, with emphasis on the delicate balance of natural processes and impacts of various stressors. Online data labs will be enhanced with at-home activities including creating and manipulating a physical model of a reef ecosystem. This course fulfills the university requirement for a natural science laboratory.

**Term Offered:** Spring

Core Natural Sciences

## EEES 2010 Introduction To Environmental Studies

[3 credit hours]

Introduction to issues currently affecting environmental quality. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.

**Term Offered:** Spring, Fall

## EEES 2020 Introduction to the Environment: Energy and Climate

[3 credit hours]

Introduction to issues currently affecting environmental quality associated with energy production and the impacts to climate change. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.

**Term Offered:** Spring, Fall

Core Natural Sciences

**EEES 2030 Introduction to the Environment Land-Use and Water**

[3 credit hours]

Introduction to issues currently affecting environmental quality associated with land-use (e.g. agriculture and urbanization) and focusing on the impacts to biodiversity and aquatic systems. Fundamental scientific concepts relating to those issues and ethical, economic, legal and political considerations that affect the resolution of environmental problems.

**Term Offered:** Spring, Fall**EEES 2100 Fundamentals Of Geology**

[4 credit hours]

Consideration of earth materials and the dynamic external and internal processes active on earth; the physical and biological history of the earth. Intended for science majors.

**EEES 2150 Biodiversity**

[4 credit hours]

Exploration of biodiversity and general biological processes and problems as they are experienced by all living organisms: genetics, reproduction, evolution, and ecology.

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**EEES 2160 Biodiversity Laboratory**

[1 credit hour]

Laboratory exercises designed to complement the material covered in EEES 2150.

**Corequisites:** EEES 2150**Term Offered:** Spring, Fall

Core Natural Sciences

**EEES 2200 Climate Change**

[3 credit hours]

An overview of the understanding of climate change and role of human activities, including atmospheric processes, greenhouse effect, carbon cycling, physical evidence, impacts, and proposed global actions in response.

**Term Offered:** Spring, Summer, Fall**EEES 2230 Earth History: Historical Geology and Paleontology**

[4 credit hours]

The morphology and paleoecology of fossil taxa, significant strata, and tectonic events important to the interpretation of paleoenvironments and Earth history are stressed. Field trip(s) required.

**Prerequisites:** EEES 2100 with a minimum grade of D-**Term Offered:** Spring**EEES 2400 Oceanography And Water Resources**

[3 credit hours]

An exploration of the geological, physical, chemical and biological nature of the oceans. Emphasis on the origin and evolution of ocean basins, plate tectonics, properties of seawater, and physical processes of circulation, especially as related to climate, the hydrologic cycle, and life in the oceans.

**Term Offered:** Spring, Fall**EEES 2500 Computer Applications In Environmental Sciences**

[1 credit hour]

Desktop computers used by scientists: word processing, spreadsheets, databases, GPS, processing GPS files, contour and mapping software.

**Term Offered:** Spring, Fall**EEES 2510 Advanced Computer Applications**

[2 credit hours]

Collecting and analyzing spatial data, digital elevation models, mathematical modeling of natural processes and introduction to matrix operations in Excel.

**Prerequisites:** EEES 2500 with a minimum grade of C-**Term Offered:** Spring**EEES 2600 Techniques for Environmental Sciences**

[3 credit hours]

A "hands-on" active-learning lab-based course exploring a range of commonly-used analytical techniques used in environmental sciences, as well many other fields. The techniques covered include: nutrient analysis, gas exchange, growth analysis, electrophoresis, immuno-detection techniques such as ELISA, and metabolite analysis.

**Prerequisites:** EEES 2150 with a minimum grade of C- and EEES 2500 with a minimum grade of C- and CHEM 1230 with a minimum grade of C-**Term Offered:** Spring**EEES 2760 Field Methods Lab**

[3 credit hours]

Field exercises relevant to data collection, data analysis, and use of standard field methods and equipment in local ecosystems around Toledo. Field trips will focus on developing testable hypotheses, collecting data to answer those hypotheses using standard methods and equipment, analyzing data, and writing and presenting results in a scientific format.

**Prerequisites:** EEES 2150 with a minimum grade of D-**Term Offered:** Fall**EEES 2980 Special Topics**

[1-4 credit hours]

A lower division undergraduate course covering some aspect of environmental sciences not covered in the formal course offerings of the department. Students may repeat the course for different topics.

**Term Offered:** Spring, Fall**EEES 2990 Independent Study**

[1-4 credit hours]

Student selects an appropriate approved subject for individualized study and prepares a report or gives equivalent evidence of mastery of the selected subject.

**Term Offered:** Summer, Fall**EEES 3000 Geology Of National Parks**

[3 credit hours]

Study of regional geology of the U.S., focusing on national parks and monuments with the aim of furthering the student's geological knowledge and encouraging visitation as a tourist.

**Prerequisites:** EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-**Term Offered:** Fall**EEES 3050 General Ecology**

[3 credit hours]

The structure, function and regulation of populations, communities and ecosystems, emphasizing human activities and their ecological consequences.

**Prerequisites:** EEES 2150 with a minimum grade of C- or BIOL 2150 with a minimum grade of C-**Term Offered:** Spring, Fall

**EEES 3060 General Ecology Laboratory**

[1 credit hour]

Laboratory and field exercises demonstrating ecological principles.

**Corequisites:** EEES 3050**Term Offered:** Fall**EEES 3100 Surficial Processes**

[3 credit hours]

Description and study of the earth's surface features from the point of view of their origin, including landforms created by glaciers, rivers, the wind, along coasts, tectonics and erosional/depositional processes. Field trip required.

**Prerequisites:** EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-**Term Offered:** Fall**EEES 3210 Mineralogy and Petrology**

[4 credit hours]

Mineralogy: Occurrence, characteristics and crystal chemistry, identification and geologic environments of formation of common minerals. Igneous and Metamorphic Petrology: Igneous and metamorphic rock characteristics, origins, classification and interpretation of conditions of formation. Laboratory: Using megascopically observable physical properties to identify and classify common minerals and infer crystal chemistry. Megascopic identification and classification of igneous and metamorphic rocks, identification of mineral associations and interpretation of conditions of formation.

**Prerequisites:** (EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-) and CHEM 1230 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 3220 Sedimentary Petrology and Stratigraphy**

[3 credit hours]

Megascopic description of sediments and sedimentary rocks, including their characteristics, classification and diagenesis; introduction to depositional processes and environments of sediments, and stratigraphic relationships of sedimentary rocks.

**Prerequisites:** EEES 2100 with a minimum grade of C- or EEES 1010 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 3250 Engineering Geology**

[3 credit hours]

An introduction to the application of geologic principles to engineering practices through a series of readings, laboratory exercises and practical problems. First the fundamentals of geology are presented including: plate tectonics and the resulting distributions of geologic materials and phenomena; mineral, rock and soil characterization; geologic structures; and construction and use of geologic maps. The remainder of the course investigates specific geologic processes and applications to engineering practices.

**Prerequisites:** MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 2450 with a minimum grade of C-**Term Offered:** Fall**EEES 3310 FIELD METHODS: STRUCTURAL GEOLOGY AND MAPPING**

[3 credit hours]

Rock deformation and its expression on maps; applying geometrical and trigonometric principles to solve problems involving dipping strata; stereonet applications, interpreting geological maps, constructing cross sections, geological GIS applications.

**Prerequisites:** EEES 2100 with a minimum grade of C- or EEES 1010 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 3800 Botany**

[4 credit hours]

A detailed introduction for science majors to general plant biology, via lecture and laboratory. Topics include plant structure, function, evolution, diversity, agriculture and other non-food uses, and ecology.

**Prerequisites:** EEES 2150 with a minimum grade of D- and BIOL 2170 with a minimum grade of D-**Term Offered:** Spring**EEES 3810 Science of Gardening**

[3 credit hours]

This course explores the science underlying gardening, and it is designed to foster understanding of basic scientific knowledge and the scientific process, as well as the practical application of science. The course focuses on how plants are affected by their biotic and abiotic environment, especially light, water, temperature, nutrients, soil, and enemies and partners.

**Prerequisites:** EEES 2150 with a minimum grade of C-**EEES 3900 Literature And Communications In The Environmental Sciences**

[3 credit hours]

Survey and analysis of environmental issues featuring guest experts from a variety of environment-related occupations, readings from the environmental literature and student reports.

**Prerequisites:** EEES 2150 with a minimum grade of C- or BIOL 2150 with a minimum grade of C-**Term Offered:** Spring, Fall**EEES 4100 Glacial Geology**

[3 credit hours]

To understand glaciers and glacial landscapes. Topics include mass balance, ice flow, hydrology, erosion, deposition, landforms, glacial lakes and development of the Ohio glacial landscape. Field trip is mandatory.

**Prerequisites:** EEES 3100 with a minimum grade of C-**Term Offered:** Spring**EEES 4150 Evolution**

[3 credit hours]

The modern theory of evolution is presented within a general framework of biological and geological evidence focusing on the fossil record, early biomolecules, protein synthesis, genetics, phylogeny and vertebrate evolution.

**Prerequisites:** (EEES 2150 with a minimum grade of C- or BIOL 2150 with a minimum grade of C-) and CHEM 1230 with a minimum grade of C-**Term Offered:** Spring, Summer, Fall

**EEES 4160 Environmental Data Management**

[3 credit hours]

An introductory course in data management for environmental science seniors covering the basics of data management practices and the use of Excel and R for data preparation, evaluation, analysis, visualization, and interpretation. Prerequisite: EEES 2500 or approval of instructor.

**Prerequisites:** EEES 2500 with a minimum grade of C-

**Term Offered:** Fall

**EEES 4200 Quaternary Geology**

[3 credit hours]

To provide understanding of such cyclical events as climate change, sea level fluctuations, vegetation change and ice sheet paleogeography during the Quaternary Period and to explore future changes for planet Earth. Field trip is mandatory.

**Prerequisites:** EEES 3100 with a minimum grade of C-

**Term Offered:** Spring

**EEES 4220 Environmental Geochemistry**

[3 credit hours]

Chemical reactions of environmental concern. Water and soil chemistry related to contaminant fate and mobility. Computer software used.

**Prerequisites:** CHEM 1230 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4240 Soil Science**

[3 credit hours]

Basic principles of soil formation, physics, and chemistry with emphasis on their influence on fluid and chemical migration and preservation of soil quality from geological, agricultural and environmental perspectives.

**Prerequisites:** CHEM 1230 with a minimum grade of C- or CHEM 1090 with a minimum grade of C-

**Term Offered:** Spring

**EEES 4250 Soil Ecology**

[3 credit hours]

Underlying concepts and theory of modern soil ecology will be reviewed including the biogeochemical cycles and ecological functions of soil, and the effects of human activities. (Spring, alternate years, odd)

**Prerequisites:** EEES 3050 with a minimum grade of C- or EEES 4240 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4260 Soil Ecology Laboratory**

[1 credit hour]

Laboratory exercises designed to complement the material covered in EEES 4250.

**Corequisites:** EEES 4250

**Term Offered:** Spring, Fall

**EEES 4300 Field Botany**

[3 credit hours]

Introduction to the principles and methodology of plant taxonomy with particular attention to the native plant species.

**Prerequisites:** EEES 2150 with a minimum grade of D- or BIOL 2150 with a minimum grade of D-

**EEES 4330 Vertebrate Ecology And Systematics**

[4 credit hours]

Ecology, systematics and conservation of the vertebrates, with special emphasis on forms native to North America.

**Prerequisites:** EEES 2150 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4350 Ecology and Conservation of Reptiles and Amphibians**

[3 credit hours]

The ecology, diversity, evolution, and conservation of amphibians and reptiles. Lectures will discuss natural history, trait diversity, evolutionary context, and ecological implications of amphibians and reptiles. Hands-on activities include taxonomy and identification of local species, survey and field methods, and discussions of scientific literature. Throughout this course, the biology of amphibians and reptiles will be emphasized in the context of conservation.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**EEES 4355 Ecology and Conservation of Reptiles and Amphibians Lab**

[1 credit hour]

Laboratory and field exercises relevant to the conservation and biology of reptiles and amphibians. This course includes field trips, data collection, and analysis of data and samples. Field trips will focus on standard methods of catching, handling, and marking reptiles and amphibians, along with field techniques relevant to studying the ecology and conservation of reptiles and amphibians.

**Corequisites:** EEES 4350

**EEES 4410 Hydrogeology**

[3 credit hours]

Fundamentals of groundwater/earth interactions are introduced concentrating on physical aspects of groundwater flow with applications to the field of water resources and contaminant investigations.

This course is designed as the fundamental course in groundwater for students who plan to use hydrogeology in their careers, e.g., environmental geologists, civil and environmental engineers, environmental specialists and scientists, and petroleum geologists.

**Prerequisites:** MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 2450 with a minimum grade of C-

**Term Offered:** Spring

**EEES 4450 Hazardous Waste Management**

[3 credit hours]

Environmental regulations concerning hazardous waste, characteristics of hazardous waste and disposal technologies, toxicology, characteristics of organic chemicals and heavy metals, biodegradation, soil science, groundwater contamination, risk assessment, site investigation.

**Prerequisites:** CHEM 1230 with a minimum grade of D-

**Term Offered:** Fall

**EEES 4480 GIS Applications in Environmental Science**

[3 credit hours]

An applications course focused on using GIS techniques and applications in environmental problems and research.

**Prerequisites:** EEES 2500 with a minimum grade of C- and EEES 2100 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4490 Remote Sensing of The Environment**

[4 credit hours]

Introduction to theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition.

**Prerequisites:** GEPL 2010 with a minimum grade of C- or EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-

**Term Offered:** Fall



**EEES 4510 Environmental Microbiology**

[3 credit hours]

The diversity of microbial life and activities, the functioning of microbial ecosystems in energy and carbon flow and remediation of polluted environments, and the detection and control of pathogens.

**Prerequisites:** (EEES 2150 with a minimum grade of C- and CHEM 1230 with a minimum grade of C-)

**Term Offered:** Fall

**EEES 4520 Bioremediation**

[3 credit hours]

The environmental fate and transport of contaminants; their transformation and biodegradation by plants and microorganisms; bioremediation strategies, including solid phase, slurry phase, and vapor-phase treatments, and natural attenuation.

**Prerequisites:** (EEES 2150 with a minimum grade of C- and CHEM 1230 with a minimum grade of C-)

**EEES 4540 Microbial Ecology**

[3 credit hours]

Students will learn the underlying processes that drive microbial population structure and function in the environment and become familiar with classical and current methodology used in microbial community analysis.

**Prerequisites:** EEES 2150 with a minimum grade of C- or BIOL 2170 with a minimum grade of C-

**Term Offered:** Fall

**EEES 4550 Methods Of Microbial Investigation**

[3 credit hours]

Student will learn the classical and current methodologies (biochemical and molecular) used in microbial community analysis while developing an understanding of experimental design sample handling and data analysis.

**Prerequisites:** EEES 4540 with a minimum grade of C-

**EEES 4610 Geophysics**

[3 credit hours]

Survey of theory, field applications, interpretation principles of solid earth and exploration geophysics. Two hours lecture, three hours methods laboratory.

**Prerequisites:** (EEES 1010 with a minimum grade of C- or EEES 2010 with a minimum grade of C-) and (MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 2450 with a minimum grade of C-)

**Term Offered:** Spring, Fall

**EEES 4630 Numerical Methods In Geophysics**

[3 credit hours]

Numerical filters and matrix operations used to process potential field data and wave forms, isolating anomalies and signals of interest; derivative maps, upward and downward continuation; current interpretation software. Term project.

**Prerequisites:** EEES 4610 with a minimum grade of C-

**Term Offered:** Spring

**EEES 4650 Geology Field Course**

[1-4 credit hours]

Intensive field studies in various areas of geologic interest. Studies may involve various geologic field methods and descriptive techniques. Course may be repeated multiple times. Fall and Spring.

**Prerequisites:** EEES 1010 with a minimum grade of C- or EEES 2100 with a minimum grade of C-

**EEES 4730 Aquatic Ecology**

[3 credit hours]

The biology of populations, communities and ecosystems with emphasis on aquatic environments. Includes the application of principles and theory from aquatic ecology to help understand and solve management problems in aquatic systems.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Fall

**EEES 4740 Aquatic Ecology Laboratory**

[1 credit hour]

Laboratory exercises on the biology of aquatic populations, communities and ecosystems.

**Corequisites:** EEES 4730

**Term Offered:** Fall

**EEES 4750 Conservation Biology**

[3 credit hours]

The application of principles of ecology, biogeography, genetics, economics, philosophy and other disciplines to the study and maintenance of biological diversity in temperate, subtropical and tropical systems.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4755 Conservation Biology Lab**

[1 credit hour]

Laboratory and field exercises relevant to the conservation biology of populations, communities and ecosystems. This course includes field trips, sample analyses and computer-based approaches to biodiversity inventories and reserve design.

**Prerequisites:** EEES 4750 (may be taken concurrently) with a minimum grade of C-

**EEES 4760 Landscape Ecology**

[3 credit hours]

A general introduction to the theory and practice of landscape ecology, including landscape-analysis, pattern-process relationship, and potential management applications at multiple spatial and temporal scales.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4790 Ecology Field Trip**

[2-4 credit hours]

Field study of globally significant ecosystem(s), including analysis of structural and functional relationship within and between ecosystems. Opportunities for individual student projects. Prerequisite: EEES 3050 or equivalent.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Summer

**EEES 4910 Directed Research**

[1-5 credit hours]

Research under guidance of faculty member. An acceptable thesis is required for credit toward major.

**Term Offered:** Spring, Summer, Fall

**EEES 4920 Senior Geology Seminar**

[2 credit hours]

Survey of geology at a senior level using readings, class discussions and some lectures. The final exam will be one of the assessment vehicles of the department.

**Term Offered:** Spring

**EEES 4940 Internship**

[1-4 credit hours]

Student gains up to 4 credits for relevant professional experience with an adviser-approved organization. Student must enroll during the term service is performed.

**Term Offered:** Spring, Summer, Fall

**EEES 4960 Senior Seminar**

[1 credit hour]

The intent of the course is to provide senior students with an opportunity to identify relevant positions, create appropriate resumes/CVs and cover letters, and develop necessary interview skills as they plan for their professional careers. Prerequisite: senior standing in ENST, ENSC, GEOL, or BIOL, requiring permission of instructor.

**Term Offered:** Fall

**EEES 4970 Senior Environmental Capstone**

[3 credit hours]

A project-based capstone course focused on integration, synthesis and applications of course work students have taken in their program of study. Departmental majors with different academic backgrounds work in small teams to complete a practical, interdisciplinary project for a client culminating in a scope of work, team-presentation and project report. Clients might include a conservation organization, governmental agency, private industry, school, or other.

**Prerequisites:** EEES 3050 with a minimum grade of C-

**Term Offered:** Spring, Fall

**EEES 4980 Special Topics: Advanced Undergraduate**

[1-4 credit hours]

An advanced undergraduate course covering some aspect of the environmental sciences not covered in the formal upper- division undergraduate curriculum. Students may repeat the course for different topics.

**Term Offered:** Spring, Summer, Fall

**EEES 4990 Independent Study: Advanced Undergraduate**

[1-4 credit hours]

Student selects an appropriate approved subject for individualized study and prepares a report or gives equivalent evidence of mastery of the selected subject.

**Term Offered:** Spring, Summer, Fall

# ECONOMICS (ECON)

## ECON 1010 Introduction To Economic Issues

[3 credit hours]

Basic concepts and theory applications to major economic problems and controversies. Designed primarily to meet requirements of students not planning to take upper level economics courses. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## ECON 1150 Principles Of Macroeconomics

[3 credit hours]

Explaining the level and the growth of economic activity, its fluctuations and ways of achieving greater stability, including the roles of money, banking and international finance.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## ECON 1200 Principles Of Microeconomics

[3 credit hours]

Theories of consumer behavior; determination of input and output; prices and quantities in factor and product markets; analysis of international trade and policy; applications include labor markets and income distribution.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## ECON 2400 The American Economy In The Twentieth Century

[3 credit hours]

American economic growth in the recent past. Evolution of governmental roles, development of labor markets with respect to race and sex, effects of wars and depressions. Status of American competitiveness.

## ECON 2500 Topics In International Economics

[3 credit hours]

Why nations trade; comparative advantage and gains from trade; free trade versus protectionism; free versus "fair" trade; balance of payments problems.

## ECON 2810 Introduction to Econometrics

[3 credit hours]

Introduction to econometrics with an emphasis on the intuitive understanding and practical applications of the basic tools of regression analysis. Course covers hypothesis testing, single and multiple regression equations, and the problems and possible solutions to data that are associated with multicollinearity, autocorrelation and heteroskedasticity

**Prerequisites:** MATH 2600 with a minimum grade of D- or MATH 3610 with a minimum grade of D- or BUAD 2060 with a minimum grade of D-

**Term Offered:** Spring, Fall

## ECON 3030 Consumer Economics

[3 credit hours]

Economic role of the consumer, theory of choice-making - rational purchasing of food, housing, health care, transportation, insurance, credit, budgeting, investing and tax returns.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

## ECON 3050 Economics Of Gender

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportions of female-headed and same sex households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## ECON 3070 Economics And Law

[3 credit hours]

Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law, Common Law Process; Economics of Crime and Punishment.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

## ECON 3080 Economics Of Crime

[3 credit hours]

Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Fall

## ECON 3120 Topics In Monetary And Financial Economics

[3 credit hours]

Current issues in money, banking and finance; interest rate theory; international money and banking; monetary policy and modeling monetary economies.

**Prerequisites:** ECON 1150 with a minimum grade of D-

**Term Offered:** Fall

## ECON 3150 Intermediate Macroeconomic Theory

[3 credit hours]

National income accounting; theory of income determination; causal relationships; analysis of consumption, investment, government and foreign demand functions; integration of theories of income, output, money and interest.

**Prerequisites:** ECON 1150 with a minimum grade of D-

**Term Offered:** Spring, Fall

## ECON 3200 Intermediate Micro-Economic Theory

[3 credit hours]

Consumer theory, utility and indifference curve analysis, theory of the firm, industry pricing in perfect and imperfect competition and distribution theory.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ECON 3240 Environmental Economics

[3 credit hours]

Economic analysis of the causes of environmental problems; Examination of various economic policies for addressing current environmental issues such as pollution control policies and optimal use of resources.

**Term Offered:** Spring, Summer

**ECON 3250 Economics Of Sports**

[3 credit hours]

This course will survey the theoretic and applied economic issues within the world of professional and amateur sports, focusing on industrial organization, labor economics and public finance.

**Prerequisites:** ECON 1200 with a minimum grade of D- or ECON 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ECON 3260 The Economics of Climate Change**

[3 credit hours]

Climate change can be viewed as a fundamentally economic problem. However, climate change has a unique set of attributes that make standard economic analysis difficult to apply. It is a global problem requiring unprecedented international cooperation. Economists view climate change as a risk that creates uncertainty about the future. Students will learn how people value alternative reductions in climate risk. An understating of this trade-off is necessary to help design more cost-effective climate change policy.

**ECON 3270 Natural Resource Economics**

[3 credit hours]

Economic analysis of natural resource conservation and use, considering the objectives of efficiency and sustainability. Topics include energy, minerals, marine resources, land and agriculture, outdoor recreation, biodiversity and wildlife management.

**Prerequisites:** ECON 1200 with a minimum grade of D- or ECON 3240 with a minimum grade of D-

**Term Offered:** Spring

**ECON 3300 BENEFIT-COST ANALYSIS**

[3 credit hours]

The study of the evaluation of competing public policy alternatives and projects to more efficiently allocate society's resources. Applications include transportation, public health, criminal justice, education, and the environment.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D- or ECON 3240 with a minimum grade of D- or ECON 3270 with a minimum grade of D-

**Term Offered:** Fall

**ECON 3410 World Economic History**

[3 credit hours]

Study of economic growth throughout the world, particularly in Europe, Asia, Africa and Latin America. Analysis of economic institutions, technological change, industrialization and living standards.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 3500 Comparative Economic Systems**

[3 credit hours]

Theory and ideology of market, socialist and mixed economic systems. Case study of the economies of U.S., Russia, China and India.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer  
Multicultural Non-US Diversity

**ECON 3600 Urban Economics**

[3 credit hours]

Analysis bearing on intermetropolitan and intrametropolitan growth processes.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 3810 Applied Econometrics**

[3 credit hours]

Topics emphasize applications of a wide range of statistical approaches to time-series, cross-sectional, panel, and other types of data. Included are micro-econometric topics such as panel data models, qualitative choice models, hazard models and others. The time series macro-economic topics include model solidarity, cointegration, error correction mechanisms, ARCH and GARCH models, economic forecasting, and others.

**Prerequisites:** ECON 2810 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ECON 3900 Undergraduate Seminar**

[1-4 credit hours]

Small group study of special topics initiated either by student or a faculty member.

**Term Offered:** Spring, Fall

**ECON 3910 Honors Research**

[1-4 credit hours]

Study of special topics initiated either by student or a faculty member.

**Term Offered:** Spring, Fall

**ECON 3920 Honors Reading**

[1-4 credit hours]

Study of special topics initiated either by student or a faculty member.

**Term Offered:** Spring, Fall

**ECON 3980 Current Economic Issues**

[3 credit hours]

Course content varies as changes in the interaction between economic topics and writing assignments occur.

**ECON 4050 Population Economics**

[3 credit hours]

Interaction of economic changes and demographic variables; topics include birth rates, women's employment, marriage and divorce, aging and mortality, migration and overpopulation.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4120 Monetary Theory**

[3 credit hours]

Modern theories of financial markets, money and the theory of interest rates, money's role in general equilibrium and growth models and money's ability to cause inflation.

**Prerequisites:** ECON 3150 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4130 Monetary And Fiscal Policy**

[3 credit hours]

Changes in the quantity of money and alternative government spending, taxation and debt policies, interrelations of fiscal and monetary policies in stabilization programs.

**Prerequisites:** ECON 3150 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4150 Advanced Macroeconomic Theory**

[3 credit hours]

Theories of consumption and investment. Empirical estimates. Cycle and growth theory, multiplier-accelerator analysis and growth models. The theory and instruments of macroeconomic policy. Dynamic Macroeconomic Theory.

**Prerequisites:** ECON 3150 with a minimum grade of D-

**Term Offered:** Fall

**ECON 4200 Advanced Microeconomic Theory**

[3 credit hours]

Advanced topics in microeconomic theory, consumer behavior, the firm and market structure, distribution theory, equilibrium conditions, welfare economics.

**Prerequisites:** ECON 3200 with a minimum grade of D-

**Term Offered:** Fall

**ECON 4230 Poverty And Income Distribution**

[3 credit hours]

Causes and consequences of current trends in poverty and income distribution in the U.S.; analysis of policies dealing with problems in these areas.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 4240 Applied Environmental Economics**

[3 credit hours]

The economics of the environment and natural resources using applied welfare theory, benefit-cost analyses, and nonmarket valuation. Examination of economic instruments, such as marketable permits, for solving environmental problems.

**Prerequisites:** ECON 1200 with a minimum grade of D- or ECON 3240 with a minimum grade of D- or ECON 3270 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4250 Labor Economics**

[3 credit hours]

The labor market is studied. Topics include labor force characteristics, wage determination, hours and condition of work, human capital models, unemployment, labor union structure and growth, and modern labor legislation.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4260 Behavioral Economics**

[3 credit hours]

Behavioral Economics is an increasingly common course offered by Economics departments. We are creating this course to meet demands of students.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4280 Energy Economics**

[3 credit hours]

This course explores the theoretical and empirical perspectives on the demand and supply sides of the energy markets. This course starts with an energy outlook in both domestic and global scales. Then it discusses the natural resource modelling, energy supply, and the behavioral underpinnings of the energy demand. The course continues with current and historical aspects of national and global markets for oil, natural gas, coal, electricity, nuclear power, and renewable energy.

**Prerequisites:** ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D-

**ECON 4300 Mathematical Economics**

[3 credit hours]

Development and applications of the mathematical tools used by economists. Differential and integral calculus, linear algebra, transcendental functions and series.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Fall

**ECON 4410 American Economic History**

[3 credit hours]

Exploration of economic growth in America from pre-Columbian times to the present day. Analysis of economic institutions, technological change, industrialization and standards of living.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 4510 International Economics I**

[3 credit hours]

Theory of international trade; commercial policy; costs and benefits, economic integration; trade and economic growth and balance of payments problems.

**Prerequisites:** ECON 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer

**ECON 4550 Economic Development**

[3 credit hours]

Economic problems and policies in less-developed countries, including such topics as schooling, population growth, urbanization, landholding, income distribution, capital formation and development strategies.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**ECON 4620 Regional Economics**

[3 credit hours]

Examination of regional income estimates and social accounts, regional multipliers, diverse location theories, supplemented with techniques of regional analysis.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**ECON 4660 Public Finance Economics**

[3 credit hours]

An analysis of the government sector in the economy, government expenditures, taxation and borrowing and their effects on employment, price levels and growth.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring



**ECON 4750 Health Economics**

[3 credit hours]

Economic analysis of health and health services. Topics currently include medical and allied manpower, hospitals, drugs and cost-benefit analysis of selected health programs.

**Prerequisites:** ECON 1200 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4810 Econometrics Models And Methods I**

[3 credit hours]

An introduction to econometric methods and their use in quantitative analysis of economic theories. Diagnostics for problems typically encountered are detailed along with techniques for correcting these problems.

**Prerequisites:** (ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D- and MATH 2600 with a minimum grade of D-) or (ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D- and ECON 2810 with a minimum grade of D-)

**Term Offered:** Fall

**ECON 4820 Econometrics Models And Methods II**

[3 credit hours]

An introduction to forecasting methods for economic time-series including Bayesian methods. Both theory and application of forecasting models and methods are covered.

**Prerequisites:** ECON 4810 with a minimum grade of D-

**Term Offered:** Spring

**ECON 4830 Econometrics Models And Methods III**

[3 credit hours]

Econometric methods that apply to survey, spatial and cross-sectional/ time-series data along with other specialized modeling techniques are covered.

**Prerequisites:** ECON 4810 with a minimum grade of D-

**ECON 4910 Research**

[1-4 credit hours]

**ECON 4920 Readings**

[1-4 credit hours]

**ECON 4940 Economics Internship**

[1-4 credit hours]

A prearranged work-study experiential learning course where students gain practical experience applying their economic knowledge with a specific firm, government agency, or nonprofit group. The course is variable credit from 1 to 4 credits. Each academic credit hour requires 40 hours of internship work, e.g., a 3 credit ECON 4940 course requires 120 hours. ECON 4940 will be graded as "credit/ no credit".

**Prerequisites:** ECON 1150 with a minimum grade of D- and ECON 1200 with a minimum grade of D- and ECON 2810 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ECON 4960 Senior Honors Thesis**

[1-4 credit hours]

# EDUC TECH AND PERFORMANCE TECH (ETPT)

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## **ETPT 2020 Technology And Multimedia In Educational Environments**

[3 credit hours]

Emphasizes the development of computing skills with a focus on productivity tools in organizing, managing, multimedia authoring, homepage development, software evaluation and presenting lessons for professional communication in K-12.

**Term Offered:** Spring, Fall

## **ETPT 4200 Computer Skills For Instructional Professionals**

[3 credit hours]

Emphasizes developing skills in the use of this common productivity software and the use of computer technology in solving typical classroom problems.

## **ETPT 4950 Workshop In Educational Technology & Performance**

### **Technology**

[1-5 credit hours]

Workshops are developed around topics of interest in all areas of educational technology and performance technology. Students should discuss specific content for each offering with educational technology faculty.

## **ETPT 4990 Independent Study In Educational Technology & Performance**

### **Technology**

[1-5 credit hours]

Individual study designed to provide a student the opportunity to work individually on professional problems under the direction of educational technology & performance technology faculty.

**Term Offered:** Fall

# EDUCATION (EDU)

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## **EDU 1000 Orientation To Education**

[1 credit hour]

Academic and student development course offering an introduction to College and University community. Offers strategies for successful transition to University environment by examining University resources, procedures, academic programs and advising.

**Term Offered:** Fall

## **EDU 1700 Introduction to Education**

[3 credit hours]

Exploration of purposes of schools in society, focusing on professionalism, standards & accountability, education for democracy, legal & organizational issues, diversity, and curriculum & instruction, as well as knowledge and dispositions required to be an effective teacher.

**Term Offered:** Spring, Fall

# EDUCATIONAL ADMIN AND SUPERVSN (EDAS)

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## **EDAS 4100 Supervisory Skill Development**

[3 credit hours]

A study of supervisory skills for education and allied professions. The focus is on the supervisor and how she engages in activities to develop personal growth and development of staff members.

## **EDAS 4260 Leadership For Supervisors**

[3 credit hours]

An examination of different leadership styles within the organization is the focal point of this course. Participants will conduct research related to directive and non-directive supervisory skills.

## **EDAS 4280 Organizational Development**

[3 credit hours]

The course explores the concepts of organizations and people who work in organizations. Participants will be involved in exercises and procedures of organizational diagnosis, evaluation and development.

## **EDAS 4290 Labor Relations**

[3 credit hours]

The course examines methods and procedures for improving labor relations in organizations. Participants will analyze a variety of models and issues that confront labor relations in education and allied professions.

## **EDAS 4940 Administrative Field Experience**

[3-6 credit hours]

Working in a guided reflective practice environment, the student will apply knowledge gained in previous coursework to working situations in positions in the private sector.

# EDUCATIONAL PSYCHOLOGY (EDP)

## EDP 1500 Thinking, Knowing and Learning: From Self Determination to the Collective Good

[3 credit hours]

This course will help students acquire knowledge, skills, and dispositions about their own learning and thinking and how to apply these competencies in their personal and professional lives in a global society.

## EDP 1550 Adaptive Learning In College

[3 credit hours]

Examines a variety of cognitive, affective and social factors associated with academic performance in college. Major emphasis is placed on applications to learning and college success.

## EDP 3110 Learning And Individual Differences

[3 credit hours]

Focuses on selected research findings and theoretical principles on learning and individual differences. Considers relationships of this body of information to learning and performance in a variety of contexts.

## EDP 3120 Psychology Of Coping And Adaptation

[3 credit hours]

Reviews and analyzes principles, research findings, coping models, as well as personal and situational factors associated with coping and adaptational processes in a variety of life circumstances.

## EDP 3200 Applied Psychology For Teachers

[3 credit hours]

Examination of the ways in which psychological principles can be applied to the planning and implementation of meaningful instruction in elementary and secondary classrooms.

**Term Offered:** Spring, Summer, Fall

## EDP 3210 Child Development For Early Childhood Educators

[3 credit hours]

Students in early childhood education will be introduced to emotional, social and cognitive factors in child development (birth to age eight) and examine how teachers can create optimal environments for students.

**Term Offered:** Spring, Summer, Fall

## EDP 3230 Human Development For P-12 Educators

[3 credit hours]

This course will examine concepts in the physical, cognitive, social, emotional and personality development of children and adolescents. It will provide a necessary background for future teachers to deal effectively with children and youth and to better understand the issues and problems they face. Integrated field and clinical experiences will provide contexts for these concepts as they are exemplified in the lives of young people.

**Prerequisites:** EDP 3200 with a minimum grade of D-

**Term Offered:** Spring, Fall

## EDP 3240 Child And Adolescent Development For Middle Grades Educators

[3 credit hours]

Students will consider the ways in which an understanding of development can be used to guide teacher behavior. Biological, social and psychological factors will be considered.

**Prerequisites:** Upper Division with a score of 1

## EDP 3250 Adolescent Development And Learning

[3 credit hours]

The purpose of this course is to provide pre-service teachers with an understanding of the psychological principles of adolescent development and learning as well as the application of these principles to classroom instruction, assessment, and management. Students develop ways of thinking about teaching and learning in order to make informed decisions concerning various aspects of student learning and instruction. The course focuses on learning theories, cognitive development, personal and social development, achievement motivation, and diversity and their application.

**Prerequisites:** Upper Division with a score of 1

## EDP 3280 Foundations Of Teaching And Learning

[3 credit hours]

This course will focus on major conceptions of learning as applied to education, including basic principles of conditioning, information processing and social learning. Concepts such as designing instructional events, classroom management, student assessment and evaluation will be explored.

## EDP 3290 Life Span Development

[3 credit hours]

This course will examine concepts delineating the physical (including genetic influences), cognitive, social and personality development across the life span. The course is designed to provide a necessary background in the concepts of development as they pertain to a life span orientation for students in special education. An emphasis will be placed on the application of developmental data issues and problems extant in working with special populations.

**Term Offered:** Fall

## EDP 4120 Alternative Approaches To Discipline

[3 credit hours]

Reviews a variety of models, constructs and methodologies for addressing behavior and discipline problems, especially within school and family settings. Emphases are placed on individual and group approaches to discipline.

## EDP 4210 Child Behavior And Development

[3 credit hours]

Examines the physical, cognitive, social, emotional and personality development of children. Provides helping professionals with background to identify and solve problems related to child growth and development.

**Term Offered:** Spring, Summer, Fall

## EDP 4220 Adolescent Behavior And Development

[3 credit hours]

Examines the physical, cognitive, social, emotional and personality development of adolescents. Provides helping professionals with background to identify and solve problems related to adolescent growth and development.

**Term Offered:** Spring, Summer, Fall

## EDP 4230 Adult Development

[3 credit hours]

An overview of life-span development analyzing cognitive, physical, personality and social development from early adulthood through the later years.



**EDP 4330 Behavior Management**

[3 credit hours]

Theoretical and practical study of behavioral and cognitive approaches to behavior management. Students will design, develop, implement and evaluate management plans for themselves and others.

**EDP 4990 Independent Study In Educational Psychology**

[1-3 credit hours]

]Directed study of a current topic in educational psychology. The student meets with the instructor at arranged intervals without formal classes.

**Term Offered:** Spring, Fall

# ELECTRICAL ENG AND COMPUTR SCI (EECS)

## EECS 1000 EECS First Year Design

[0-3 credit hours]

Orientation to the University, college and departmental facilities, procedures and methodologies available to the student for the academic journey. Introduction to engineering design to EECS freshmen with emphasis on a semester long team-based design project.

**Term Offered:** Fall

## EECS 1100 Digital Logic Design

[0-4 credit hours]

Number representation and Boolean Algebra. Combinational circuit analysis and design. K-map and tabulation methods. Multiplexers, decoders, adders/subtractors and PLD devices. Sequential circuit analysis and design. Registers, counters and recognizers.

**Term Offered:** Spring, Fall

## EECS 1500 Introduction to Programming

[0-3 credit hours]

Covers the concept and properties of an algorithm, analysis and decomposition of computational problems, use of modern programming practices. Introduction to arrays and classes. Uses the C++ language.

**Term Offered:** Spring

## EECS 1510 Introduction To Object Oriented Programming

[0-3 credit hours]

Introduces the basics of programming using the Java language. Covers number types, objects, methods, control structures, vectors, files, and inheritance. Utilizes the Java platform to develop GUI interfaces.

**Term Offered:** Spring

## EECS 2000 EECS Professional Development

[1 credit hour]

Preparation for entry to the professions of Electrical Engineering and Computer Science and Engineering, including ethics and social responsibilities, employment practices, continuing education and professional registration.

**Term Offered:** Spring

## EECS 2110 Computer Architecture and Organization

[3 credit hours]

Fundamentals of computer architecture, computer arithmetic, memory systems, interfacing and communication, device subsystems, processor design, cpu organization, assembly programming, performance, distributed models and multiprocessing.

**Prerequisites:** EECS 1100 with a minimum grade of D- and EECS 1500 with a minimum grade of D- or EECS 1510 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## EECS 2300 Electric Circuits

[0-4 credit hours]

An introduction to electrical circuit components and laws, including ideal op-amps, DC circuit analysis, AC circuit analysis, transient analysis of RL and RC circuits and computer-aided circuit analysis.

**Prerequisites:** PHYS 2140 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## EECS 2340 Electric Circuits For Nonmajors

[3 credit hours]

For students not majoring in EECS. An introduction to electrical circuit components and laws, resistive circuit analysis, AC circuit analysis, phasers, three-phase circuits and computer-aided circuit analysis.

**Prerequisites:** PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## EECS 2500 Linear Data Structures

[3 credit hours]

This course looks at stacks, queues, and lists as well as the order of algorithms used to access and modify these structures. In addition recursion, hashing, sorting, and set representation are examined in depth.

**Prerequisites:** EECS 1510 with a minimum grade of D-

**Term Offered:** Fall

## EECS 2510 Non-Linear Data Structures

[3 credit hours]

The data structures introduced in EECS 1570 are extended to include trees (binary, balanced, and n-ary), graphs, and advanced sorting techniques. In addition, the C++ language is used as the main vehicle and is introduced in the course. Students are expected to have a strong background in Java prior to this course.

**Prerequisites:** EECS 2500 with a minimum grade of D- and EECS 2520 with a minimum grade of D-

**Term Offered:** Spring, Fall

## EECS 2520 Discrete Structures

[3 credit hours]

An introduction to the discrete structures used in computer science to develop software including proof techniques, Boolean logic, graphs, trees, recurrence relations, functions, combinatorics, and number theory.

**Prerequisites:** PHIL 1010 with a minimum grade of D- and EECS 1510 with a minimum grade of D-

**Term Offered:** Spring, Summer

## EECS 3100 Embedded Systems

[0-4 credit hours]

Microcontroller interfacing, assembly and C language programming for embedded systems, timer, input/output synchronization; analog to digital conversion, digital to analog conversion, interrupts, and embedded system debugging techniques.

**Prerequisites:** EECS 2110 with a minimum grade of D- and EECS 3210 with a minimum grade of D- and EECS 3400 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## EECS 3150 Data Communications

[3 credit hours]

Analog and digital data transmission, transmission media, Modulation techniques. Data encoding, asynchronous and synchronous transmissions, USART, RS232-C, RS-449 standards. Data link configuration and control, error control, multiplexing and demultiplexing.

**Prerequisites:** (EECS 1100 with a minimum grade of D- and EECS 3210 with a minimum grade of D-)

**Term Offered:** Summer, Fall

**EECS 3210 Signals and Systems**

[3 credit hours]

Signal and system representation. Convolution and impulse response. Fourier series, Fourier transform and Laplace transform. Discrete-time systems and Z-transforms. Computer simulation using MATLAB.

**Prerequisites:** EECS 2300 with a minimum grade of D- and (EECS 1500 with a minimum grade of D- or EECS 1510 with a minimum grade of D-) and MATH 2890 with a minimum grade of D- and (MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EECS 3220 Electric Circuits II**

[3 credit hours]

Advanced topics including three-phase systems, magnetically-coupled systems, resonance and second-order systems, Laplace transform circuit analysis, Fourier series for periodic waveforms and applications to electric circuits, ideal filters, system modeling and two-port networks.

**Prerequisites:** EECS 2300 with a minimum grade of D-

**Corequisites:** EECS 3210

**Term Offered:** Spring, Fall

**EECS 3300 Probabilistic Methods In Engineering**

[3 credit hours]

Techniques for modeling and analysis of random phenomena in EECS, including communication, control and computer systems. Distribution, density and characteristic functions. Computer generation. Functions of random variables.

**Prerequisites:** EECS 3210 with a minimum grade of D-

**Term Offered:** Spring

**EECS 3400 Electronics I**

[0-4 credit hours]

Large-signal and incremental characteristics of the pn diode, BJT, MOSFET and JFET. Large-signal analysis and computer simulation of devices and digital circuits. Logic gate implementation. Laboratory experiments and projects.

**Prerequisites:** EECS 2300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3420 Electronics II**

[3 credit hours]

Analog transistor, diode and integrated circuit analysis and design. Incremental analysis techniques, frequency response and feedback techniques.

**Prerequisites:** (EECS 3210 with a minimum grade of D- and EECS 3400 with a minimum grade of D-)

**Term Offered:** Summer, Fall

**EECS 3440 Electronics Laboratory**

[1 credit hour]

Laboratory experiments and projects in the testing and design of analog and mixed-signal electronic circuits.

**Prerequisites:** EECS 3420 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3460 Electrical Energy Conversion**

[3 credit hours]

Traditional and renewable electrical energy sources, principles of electromechanical energy conversion, magnetic circuits and transformers, steady state performance of synchronous machines, dc machines, single phase and three phase induction motors.

**Prerequisites:** EECS 3710 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Summer, Fall

**EECS 3480 Energy Conversion Laboratory**

[1 credit hour]

Laboratory studies of power transformers, synchronous machines, DC machines, single and three phase induction motors.

**Prerequisites:** EECS 3460 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3540 Systems And Systems Programming**

[3 credit hours]

Examines the external and internal characteristics of computer operating systems and related software. Details of at least one operating system and comparison with other operating systems. An introduction to systems level programming.

**Prerequisites:** EECS 2110 with a minimum grade of D- and EECS 2510 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3550 Software Engineering**

[3 credit hours]

An introduction to the Software Engineering process. Includes: the software lifecycle, user requirements, human-computer interaction, functional specification, software design, software tools, testing and modification. A major term project is assigned.

**Prerequisites:** EECS 2510 with a minimum grade of D- and (ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1020 with a minimum grade of D-)

**Term Offered:** Spring

**EECS 3710 Electromagnetics I**

[3 credit hours]

The nature of electromagnetism, Complex numbers, Transmission lines, Smith chart, Impedance matching, Vector analysis, Coordinate transformations, Electrostatics, Electrical properties of materials, Boundary conditions, Magnetostatics, Magnetic properties of materials, Boundary conditions.

**Prerequisites:** EECS 2300 with a minimum grade of D- and PHYS 2140 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 3720 Electromagnetics II**

[3 credit hours]

Maxwell's equations, Boundary conditions for electromagnetics, Plane-wave propagation in lossless and lossy media, Reflection, Transmission, Waveguides, Cavity resonators, Radiation, Antenna radiation characteristics, Antennas, Satellite communication systems, Introduction to CAD tools.

**Prerequisites:** EECS 3710 with a minimum grade of D-

**Term Offered:** Spring

**EECS 3940 Co-Op Experience**

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** EECS 2000 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**EECS 3950 Co-Op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience.

Course may be repeated.

**Prerequisites:** EECS 3940 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**EECS 4000 Senior Design Project**

[4 credit hours]

Student teams select and research a design project and propose a design which is implemented, tested and evaluated. Progress reports, a written final report and an oral presentation are required.

**Prerequisites:** EECS 3100 with a minimum grade of D- or EECS 3420 with a minimum grade of D-**Term Offered:** Spring, Fall**EECS 4010 Senior Design Project I**

[1 credit hour]

Student teams select and research a design project and propose a design. Topics covered include entrepreneurship, business plan, technical communications, design process, design teams, standards, ethics, safety and environment, and intellectual property. A fully developed senior design project proposal is required.

**Prerequisites:** EECS 3100 with a minimum grade of D- or EECS 3420 with a minimum grade of D-**Term Offered:** Spring, Fall**EECS 4020 Senior Design Project II**

[3 credit hours]

Student teams implement, test and evaluate a design previously proposed in EECS 4010. Written reports on progress and final project are required. Preliminary design and critical design reviews may be performed. Oral presentation and senior design exposition participation are needed.

**Prerequisites:** EECS 4010 with a minimum grade of D-**Term Offered:** Spring, Fall**EECS 4100 Theory of Computation**

[3 credit hours]

Examines formal models of automata and languages. Finite-state automata, regular languages, pushdown automata, context-free languages, Turing machines, decidability, reducibility, and P vs NP complexity classes.

**Prerequisites:** EECS 2510 with a minimum grade of D- and EECS 2520 with a minimum grade of D-**Term Offered:** Spring, Fall**EECS 4120 Introduction to Fuzzy Systems and Applications**

[3 credit hours]

[3 hours] Introduction to Fuzzy Rule Based Intelligent Systems. Basic Concepts of Fuzzy logic, Fuzzy Sets, Fuzzy Arithmetic, Fuzzy Relations, Fuzzy Graphs, Approximate Reasoning and Fuzzy Implications. Applications in Real World Domains. Prerequisite: EECS 2110.

**Prerequisites:** EECS 2110 with a minimum grade of D-**EECS 4130 Digital Design**

[4 credit hours]

The design of digital systems, design methodologies, hardware description language such as VHDL: behavioral-, data flow- and structural-level description of digital systems. Implementation technologies including PLDs and FPGAs.

**Prerequisites:** EECS 2110 with a minimum grade of D-**Term Offered:** Spring**EECS 4170 Real-Time Embedded Systems Design**

[3 credit hours]

Programming applications in a real-time environment. C language is used to program various microcontroller functions, including timers, A/D and D/A converters, RS-232 communication and CAN networking.

**Prerequisites:** EECS 3100 with a minimum grade of D-**EECS 4200 Feedback Control Systems**

[3 credit hours]

Feedback methods for the control of dynamic systems. Topics include characteristics and performance of feedback systems, state variable analysis, stability, root locus and frequency response methods and computer simulation.

**Prerequisites:** EECS 3220 with a minimum grade of D-**Term Offered:** Spring**EECS 4220 Programmable Logic Controllers**

[3 credit hours]

An introduction to programmable logic controllers (PLCs), process control algorithms, interfacing of sensors and other I/O devices, simulation and networking.

**Prerequisites:** (EECS 1100 with a minimum grade of D- and EECS 3210 with a minimum grade of D-)**Term Offered:** Spring, Fall**EECS 4240 Power Systems Operation**

[3 credit hours]

Single line diagrams and per unit calculations, network matrices and Y-bus, load flow techniques, large system loss formula, real and reactive power dispatch, power system relays and protection.

**Prerequisites:** EECS 3460 with a minimum grade of D-**Term Offered:** Spring, Fall**EECS 4260 Control Systems Design**

[3 credit hours]

A general study of computer-aided design of control systems. Topics include: stability, compensation, pole placement, nonlinear systems and digital systems.

**Prerequisites:** EECS 4200 with a minimum grade of D-**Term Offered:** Fall**EECS 4330 Image Analysis And Computer Vision**

[3 credit hours]

Imaging geometry, image filtering, segmentation techniques, image representation and description, stereo vision and depth measurements, texture analysis, dynamic vision and motion analysis, matching and recognition.

**Prerequisites:** EECS 3300 with a minimum grade of D-**Term Offered:** Fall

**EECS 4360 Communication Systems**

[3 credit hours]

Fourier transform applications in signal analysis and communication. Signals spectra, filtering, AM and FM modulation, noise and optimum receiver, sampling theorem, multiplexing, PCM, introduction to digital modulators and demodulators.

**Prerequisites:** EECS 3300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4370 Information Theory And Coding**

[3 credit hours]

Coding concepts, Huffman code, entropy analysis, channel and mutual information, channel capacity and Shannon's theorem, algebraic coding theory and application to blockcode and cyclic code, introduction to convolutional code.

**Prerequisites:** EECS 3300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4380 Digital Signal Processing**

[3 credit hours]

Discrete Fourier Transform (DFT), discrete convolution and correlation, Fast Fourier Transform (FFT) and its applications, design of IIR and FIR digital filters, multirate/channel digital systems, decimation and interpolation.

**Prerequisites:** EECS 3210 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4390 Wireless And Mobile Networks**

[3 credit hours]

Mobile radio propagation; the cellular concept; multiple radio access; multiple division techniques; channel allocation; mobile communication systems; existing wireless systems; network protocols; AD HOC and sensor networks; wireless LANS and PANS; recent advances.

**Prerequisites:** (EECS 3210 with a minimum grade of D- and EECS 3300 with a minimum grade of D-) or (EECS 3210 with a minimum grade of D- and MIME 4000 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EECS 4400 Solid State Electronics**

[3 credit hours]

A comprehensive treatment of the theory and operation of physical electronic devices emphasizing electrical transport in metals and semiconductors and various models of BJT's and FET's.

**Prerequisites:** (EECS 3400 with a minimum grade of D- and PHYS 3070 with a minimum grade of D-)

**Term Offered:** Fall

**EECS 4410 Electro-Optics**

[3 credit hours]

Introduction to laser physics, optics, optical waveguides, optical communication systems and electro-optics. Design of light processing and communication systems will be considered with emphasis on optics and optical communication.

**Prerequisites:** EECS 3710 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4460 Power System Mangement**

[3 credit hours]

An advanced study of the management and operation of today's power system. Included are historical developments, utility and operational costs and economics, power generation alternatives, fuel alternatives, renewable applications, transmission and distribution practices, and a discussion of current power system issues, both in the U.S. and abroad.

**Prerequisites:** EECS 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4470 Electronic Design**

[3 credit hours]

Principles and techniques of analog active circuit design. Selected design problems are given and circuits using standard parts are designed and laboratory tested. A design notebook is kept.

**Prerequisites:** EECS 3210 with a minimum grade of D- and EECS 3420 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4480 Power Electronics**

[3 credit hours]

Electronic power switching circuits. Half-wave and full-wave rectification. Characteristics of wide bandgap semiconductors. Analysis and design of inverters (dc-ac converters). Isolated and non-isolated dc-dc converters.

**Prerequisites:** EECS 3420 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4490 Electronic Energy Processing II**

[3 credit hours]

Resonant dc-dc converters. DC-AC inverters and harmonic analysis. Variable-speed motor drives. Laboratory design and analysis of various electronic energy processing circuits.

**Prerequisites:** EECS 4480 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4500 Programming for the World Wide Web**

[3 credit hours]

Fundamental concepts and programming languages for constructing contemporary websites. Differences and similarities between procedural, object-oriented, and scripting languages. Topics include HTML, Javascript, CSS, XML, Ajax, PHP, ASPnet, Three.js, and related technologies, as well as their impact on the programming process.

**Prerequisites:** EECS 2510 with a minimum grade of D- and EECS 4100 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4520 Advanced Systems Programming**

[4 credit hours]

Pertinent concepts of systems programming. Topics covered include: synchronization, distributed programming models, kernel design, peripheral handling, file systems and security history and methods.

**Prerequisites:** EECS 3540 with a minimum grade of D-

**Term Offered:** Spring



**EECS 4530 Computer Graphics I**

[4 credit hours]

An introduction to typical computer graphics systems and their operation. Interactive techniques will be introduced as well as representations and projections of three-dimensional images. Exercises using graphics equipment are assigned.

**Prerequisites:** EECS 1500 with a minimum grade of D- or EECS 1510 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4540 Computer Graphics II**

[4 credit hours]

Examines current topics related to realistic and representative 3D computer graphics. Topics include curve and surface geometry, solid modeling, ray tracing, radiosity and real-time computer graphics.

**Prerequisites:** EECS 2510 with a minimum grade of D- and EECS 4530 with a minimum grade of D-

**EECS 4560 Database Management Systems**

[3 credit hours]

Introduction to Database Systems, Data Modeling, Entity-Relationship Diagrams, The Relational Model, SQL, Relational Algebra, Relational Calculus, Normal Forms (1NF, 2NF, 3NF, BCNF, 4NF, PJNF/5NF), Candidate keys, superkeys, schema decomposition, Functional dependency, Entity and Referential Integrity.

**Prerequisites:** EECS 2510 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4580 Human Computer Interface Design**

[3 credit hours]

[3 hours] The design of human-computer interfaces and their importance to human-computer interaction. Human engineering, implementation techniques, prototyping, and current and future research areas.

**Prerequisite:** EECS 3550

**Prerequisites:** EECS 3350 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4590 Algorithms**

[3 credit hours]

Techniques for devising efficient computer algorithms. Topics include: divide-and-conquer techniques, dynamic programming, linear programming, graph algorithms, greedy algorithms, NP and P complexity classes, and approximation algorithms for NP complete problems.

**Prerequisites:** EECS 2510 with a minimum grade of D and EECS 4100 with a minimum grade of D-

**EECS 4600 Solid State Devices**

[0-4 credit hours]

Theory and operation of physical electronic devices. Electrical transport in metals, semiconductors and models of BJT's and FET's. Optoelectronic devices and integrated circuits. Laboratory includes hands-on experimentation with basic semiconductor fabrication processes.

**Prerequisites:** EECS 3400 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4610 Digital Vlsi Design I: Basic Subsystems**

[4 credit hours]

CMOS process technologies, CMOS logic families, custom and semi-custom design. Subsystem design of adders, counters and multipliers. System design methods and VLSI design tools.

**Prerequisites:** EECS 3400 with a minimum grade of D-

**EECS 4640 Inside Cryptography**

[3 credit hours]

Examines the inner workings of several cryptographic algorithms, including the discrete math behind them. Introduces operations in a Galois Field, and covers some Prime Number Theory. Symmetric algorithms include Feistel (DES) and non-Feistel (AES) designs; Asymmetric algorithms include Merkle-Hellman and RSA. Block and stream modes are explored, as are cryptographic hash functions, and ECB and Chained modes of encryption.

**Prerequisites:** EECS 2520 with a minimum grade of D- and EECS 3100 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4720 Fundamentals of Cyber Security**

[3 credit hours]

Introduces to cyber security, its interdisciplinarity, relation to nation, businesses, society, and people. Discusses cyber security terminologies, technologies, protocols, threat analysis, security principles, security mechanisms, policies, forensics, incidence response and methods/practices to secure systems. Additional real-world security problems are discussed using hands-on experiments.

**Prerequisites:** EECS 2110 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4730 Open Source Software**

[3 credit hours]

History and description of the open source movement, who participates, how it works, and why it works. Evolution patterns of open source development, the code itself, and the open source community as a whole. Open source licenses, legal issues, and commercial markets. Survey of real-world implementations.

**Prerequisites:** EECS 3550 with a minimum grade of D-

**EECS 4740 Artificial Intelligence**

[3 credit hours]

This course explores the topic of intelligent software agents with a emphasis on hands-on design of adaptive problem-solving agents for environments of increasing complexity ranging from single-agent computer games to complex real-world multi-agent environments.

**Prerequisites:** EECS 2510 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EECS 4750 Machine Learning**

[3 credit hours]

This course emphasizes learning algorithms and theory including concept, decision tree, neural network, computational, Bayesian, evolutionary, and reinforcement learning.

**Prerequisites:** (MIME 4000 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and EECS 2110 with a minimum grade of D-)

**Term Offered:** Fall

**EECS 4760 Computer Security**

[3 credit hours]

Foundational concepts in Computer Security: The CIA Triad, Authentication, Access Control, Least Privilege, Complete Mediation, Economy of Mechanism, Reference Monitors, Defensive Programming, Threats and Attacks, Network Security, Introduction to Cryptography, Database Security.

**Prerequisites:** EECS 2110 with a minimum grade of D- and EECS 3540 with a minimum grade of D-

**Term Offered:** Fall

**EECS 4770 Computer Hacking and forensic Analysis**

[3 credit hours]

Hacking ethics, beneficial vs. malicious hacking, unconventional (extreme) programming techniques, casing networks and operating systems, exposing system vulnerabilities through penetration, collecting and analyzing digital evidence, forensic tools, case studies.

**Prerequisites:** EECS 2110 with a minimum grade of D-

**EECS 4790 Network Security**

[4 credit hours]

Theory and practice of network security. Topics include firewalls, Windows, UNIX and TCP/IP network security. Security auditing, attacks, viruses, intrusion detection and threat analysis will also be covered.

**Prerequisites:** EECS 4720 with a minimum grade of D-

**Term Offered:** Spring

**EECS 4980 Special Topics In EECS**

[1-4 credit hours]

Pilot offerings of new courses involving emerging topics of interest are introduced using this number. One credit per lecture/recitation hour and/or 2.5 lab hours per week.

**Term Offered:** Spring, Summer, Fall

**EECS 4990 Independent Study In Eecs**

[1-4 credit hours]

Selected topics in electrical engineering or computer science and engineering. The instructor will specify the scope of the investigation and will meet regularly with the student(s). The study is expected to require an average of 3 hours student effort per week per credit.

**Term Offered:** Spring, Summer, Fall

# ELECTRICAL ENGINEERING TECH (EET)

## EET 1010 DC Circuits

[0-4 credit hours]

This course constitutes an introduction to electrical components, direct current circuit analysis, circuit theorems and basic electrical measurements. An introduction to sinusoidal waveforms, complex numbers, phasors and Pspice is also included.

**Prerequisites:** MATH 1330 (may be taken concurrently) with a minimum grade of D- or MATH 1340 (may be taken concurrently) with a minimum grade of D-

**Corequisites:** MATH 1330

**Term Offered:** Spring, Fall

## EET 1020 AC Circuits

[4 credit hours]

This course involves transient analysis of first order, reactive DC circuits and steady state analysis of reactive circuits under AC conditions. Frequency response, three-phase analysis, oscilloscope usage and PSpice simulation methods are included.

**Prerequisites:** EET 1010 with a minimum grade of D- and (MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-)

**Term Offered:** Spring

## EET 1410 Electrical Drafting

[3 credit hours]

Use of electrical and electronic symbols, familiarization with industry standards and codes and familiarization with different kinds of schematics and other electrical drawings. Course work performed on personal computers using CAD software.

**Term Offered:** Spring

## EET 2010 Electronic Principles

[0-4 credit hours]

Semiconductor devices and applications with emphasis on power supplies and amplifiers. AC/DC analysis of small-signal amplifiers using both bipolar junction and field effect transistors in various biasing configurations.

**Prerequisites:** EET 1020 with a minimum grade of D- and EET 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## EET 2020 Electronic Device Applications

[4 credit hours]

This course covers principles and applications of electronic circuits and devices such as oscillators, power supplies, thyristors regulators and op amps.

**Prerequisites:** EET 2010 with a minimum grade of D- and EET 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## EET 2210 Digital Logic Fundamentals

[0-4 credit hours]

This course covers the fundamentals of digital logic circuits.

Topics include number systems, logic gates, Boolean algebra, logic simplification, Karnaugh maps, adders, multipliers, multiplexers and decoders. Elementary digital circuits including flip-flops, counters, shift registers, memory devices, programmable logic devices and integrated circuits are also covered.

**Prerequisites:** EET 1010 with a minimum grade of D- or EET 2420 with a minimum grade of D-

**Term Offered:** Spring, Fall

## EET 2230 Assembly Language Programming

[0-4 credit hours]

The study of machine and assembly language programming and circuit and system applications. Microprocessor architecture and organization are also presented.

**Prerequisites:** (EET 2210 with a minimum grade of D- and CSET 1100 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## EET 2410 Mechatronics I

[0-4 credit hours]

A study of programmable controllers emphasizing program development, logic development and troubleshooting. Emphasis on relays, timers, counters, integer math and scan-dependent programming. Factory floor control concepts are stressed.

**Prerequisites:** EET 2210 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## EET 2420 Electrical Instrumentation Laboratory

[1 credit hour]

Provides an opportunity for freshman Computer Science and Engineering Technology students to gain laboratory experience with basic electrical instrumentation and basic computer components.

**Term Offered:** Spring, Fall

## EET 2980 Special Topics

[1-4 credit hours]

Student performs work on a specialized project of an advanced nature under the supervision of an Electrical Engineering Technology faculty member.

**Term Offered:** Spring

## EET 3150 C Programming

[0-4 credit hours]

This course emphasizes C programming. Design of a microcontroller system including hardware, interface, and programming using C is implemented. Lab exercises cover the areas of interrupts, structures and other programming concepts.

**Prerequisites:** EET 2210 with a minimum grade of D-

**Term Offered:** Spring, Fall

## EET 3250 Network Analysis

[3 credit hours]

This course consists of analysis of electrical wave-forms and first order time domain circuits, transient analysis of reactive circuits using Laplace transforms, system transfer functions, Bode plots and the interpretations of Fourier series and transforms.

**Prerequisites:** (EET 1010 with a minimum grade of D- and EET 1020 with a minimum grade of D- and ENGT 3020 with a minimum grade of D-)

**Term Offered:** Spring, Summer

**EET 3350 Embedded Systems Design**

[0-4 credit hours]

This course covers different aspects of real-time embedded systems implementation with low-level access to hardware resources of microcontrollers. Topics include but not limited to low-level and high-level microcontroller programming covering assembly and C, I/O access, interrupt-driven programming, timers, serial interfacing, analog-to-digital (ADC), and digital-to-analog (DAC). Uses system design approach, such as flow charts, finite state machines (FSM) while implementing embedded systems is emphasized.

**Prerequisites:** (EET 2210 with a minimum grade of D- and EET 3150 with a minimum grade of D-) or (EET 2210 with a minimum grade of D- and CSET 2230 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**EET 4150 Analog Systems Design**

[0-4 credit hours]

This course emphasizes the design and analysis of analog applications including transistor and integrated circuits using computer-aided engineering techniques. Specifically, this includes the design of small signal amplifiers, multistage amplifiers, operational amplifier circuits and power supplies by applying derived equations and scientific concepts.

**Prerequisites:** EET 2020 with a minimum grade of D- and EET 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EET 4250 Database Applications for Industry**

[0-4 credit hours]

This course covers fundamentals of database architecture, database management systems, and database systems. Principles and methodologies of database design, and techniques for database application development. It provides needed introductory database fundamentals for Microsoft MS-SQL Server. Applications from industry are included.

**Prerequisites:** EET 3350 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EET 4300 Motors and Generators**

[0-4 credit hours]

This course constitutes a study of AC-DC machines, including transformers, power transmission and the regulations governing them as specified by industry and the National Electrical Code.

**Prerequisites:** EET 1010 with a minimum grade of D- and EET 1020 with a minimum grade of D- and MATH 2460 with a minimum grade of D-

**Term Offered:** Spring

**EET 4350 Electric Power Systems**

[0-4 credit hours]

This course constitutes a study of AC-DC machines, including transformers, power transmission and the regulations governing them as specified by industry and the National Electrical Code.

**Prerequisites:** EET 1010 with a minimum grade of D- and EET 1020 with a minimum grade of D- and ENGT 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EET 4450 Automatic Control Systems**

[0-4 credit hours]

This course covers theoretical and practical aspects of analog control.

Included are open and closed loop analysis of processes, causes of instability and corrective actions. Also included are practical applications of closed loop systems.

**Prerequisites:** ENGT 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**EET 4550 Mechatronics II**

[4 credit hours]

Use of programmable controllers and computers in factory automation.

Topics included are process control, supervisory software, PLC networking, PLC/CNC integration, device configuration, use of programming software and PLC languages standards.

**Prerequisites:** (EET 2410 with a minimum grade of D- and CSET 2200 with a minimum grade of D-)

**Term Offered:** Spring, Summer

# ELECTRONIC COMMERCE (EBUS)

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## **EBUS 3090 Doing Business Digitally**

[3 credit hours]

This course is an introduction to the networked economy, e-commerce and business transformation. It covers the technological trends, business opportunities, competitive threats, marketing responses and public policy issues concerning e-commerce.

**Term Offered:** Spring, Summer, Fall

## **EBUS 3180 Web Design and Data Analytics**

[3 credit hours]

A study of Web site design and management process for effective business communication, including authoring software, graphic tools, scripting techniques, java applets and related technical, legal ethical and managerial issues.

**Term Offered:** Fall

## **EBUS 4040 Digital Business Intelligence**

[3 credit hours]

A study of business intelligence management in an e-commerce environment, including the use of data mining and inbound marketing analytics tools for market analysis and business decision supports.

**Prerequisites:** EBUS 3090 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **EBUS 4150 Social Media Marketing**

[3 credit hours]

A hands-on course involving case studies of successful e-commerce business models and a team-based project to develop e-commerce plan for established and start-up businesses.

**Prerequisites:** EBUS 3090 with a minimum grade of D-

**Term Offered:** Spring

## **EBUS 4940 Internship**

[3 credit hours]

Course description: Gain practical, hands –on professional experience while working in an organization.



# EMERGENCY MEDICAL SERVICES (EMS)

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## **EMS 1200 First Responder**

[3 credit hours]

An Emergency Medical Services (EMS) course that prepares students to provide medical care at the scene of an emergency. Completion of course makes student eligible for state certification.

## **EMS 1210 EMT - Basic**

[7 credit hours]

A course providing fundamental knowledge and training across the breadth of Emergency Medical Services (EMS). Completion of course makes student eligible for state certification.

## **EMS 1310 Paramedic I**

[8 credit hours]

This is the first of three courses that provide training for students to become certified paramedics. The course covers a variety of preparatory topics such as legal considerations, assessment, pharmacology, venous access, medication administration, EKG interpretation, and assessment/management of cardiovascular emergencies. It also incorporates hands-on application thru skill labs, simulation, and direct patient contact in a clinical environment. Upon successful completion of this course, the student will be eligible enroll in Paramedic II. In addition to Ohio EMS certification, an applicant for this course must have successfully completed an approved Anatomy class and an EMS Program Entrance Examination.

**Term Offered:** Summer, Fall

## **EMS 1320 Paramedic II**

[9 credit hours]

This is the second of three courses that provide training for students to become certified paramedics. This course covers a variety of medical emergencies (ie: respiratory, neurology, endocrinology, etc.) as well as obstetric and gynecological emergencies, childbirth and neonatology, assessment and management of various conditions that involve pediatrics and geriatrics. It also incorporates hands-on application thru skill labs, simulation, and direct patient contact in a clinical environment. Upon successful completion of this course, the student will be eligible enroll in Paramedic III.

**Prerequisites:** EMS 1310 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **EMS 1330 Paramedic III**

[7 credit hours]

This is the last of three courses that provide training for students to become certified paramedics. This course will complete the remaining paramedic curriculum with Operational topics such as Rescue, Mass Casualties, etc. The student will also finish all necessary field and clinical requirements, and must demonstrate "street readiness" while completing EMS field Internship hours. Upon successful completion, take the National Registry Examination for certification as a Paramedic.

**Prerequisites:** EMS 1310 with a minimum grade of D- and EMS 1320 with a minimum grade of D-

**Term Offered:** Spring, Summer

# ENGINEERING TECHNOLOGY (ENGT)

## ENGT 1000 Engineering Technology Orientation

[1 credit hour]

Overview of careers in engineering technology, information about each program in Engineering Technology, and skills required for success in technological fields, such as computer skills.

**Term Offered:** Spring, Fall

## ENGT 2000 Professional Development

[1 credit hour]

An introduction to the performance expectations of the engineering profession. Topics covered include resume writing, public speaking, interviewing skills, ethics, social responsibilities and the value of continuing education and professional registration.

**Prerequisites:** ENGT 1000 with a minimum grade of D-

**Term Offered:** Spring, Fall

## ENGT 2500 Technical Project Management

[3 credit hours]

General methodology of managing a technical project from concept to operational use. Emphasis is on the functions and responsibilities of the project manager related to maintaining project control and team management.

**Term Offered:** Spring, Fall

## ENGT 3010 Applied Statistics And Design Of Experiments

[4 credit hours]

Introduction to probability, statistical inference and design of experiments. Topics include confidence intervals, tests of hypothesis, regression, analysis of variance, factorial experimental designs and propagation of experimental errors.

**Prerequisites:** MATH 2460 with a minimum grade of D- or MATH 1860 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ENGT 3020 Applied Engineering Mathematics

[3 credit hours]

Introduction to partial derivatives, series expansions, complex variables, differential equations and Laplace transform analysis. Application of computers for numerical solution techniques.

**Prerequisites:** (MATH 2460 with a minimum grade of D- or MATH 1860 with a minimum grade of D-) and ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ENGT 3050 Fundamentals Of Electricity

[0-4 credit hours]

An introduction to basic analytical techniques for resistive and reactive DC and AC electric circuits, and an introduction to electronic devices, including diodes and transistors. No credit towards EET degree.

**Prerequisites:** MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ENGT 3600 Engineering Economics

[3 credit hours]

Fundamentals of analysis of engineering projects and capital investment decisions. Review of break-even analyses, rate of return, cost benefit ratios and tax and inflation implications will be performed.

**Term Offered:** Spring, Fall

## ENGT 3940 Co-Op Experience

[1 credit hour]

Approved co-op work experience. Course may be repeated.

**Prerequisites:** ENGT 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ENGT 3950 Co-op Experience

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** ENGT 3940 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## ENGT 4050 Senior Technology Capstone

[3 credit hours]

A comprehensive problem in engineering technology is assigned to a group of students who work together as a team to present a solution in a formal written and oral report.

**Term Offered:** Spring, Fall

## ENGT 4900 Engineering Review For Professional Certification

[3 credit hours]

A review and application of general engineering principles and procedures in preparation for the Fundamentals of Engineering (FE) exam. Offered for students preparing to take the exam and for those considering it.

## ENGT 4980 Special Topics In Engineering Technology

[1-4 credit hours]

Selected topics in engineering technology with emphasis on intensive investigation of recent literature in areas of special interest.

**Term Offered:** Spring, Summer, Fall

# ENGLISH (ENGL)

## ENGL 1010 College Composition 1 Co-Requisite

[3 credit hours]

Explanatory and persuasive writing in both personal and public genres; instruction and practice in generating, focusing, developing, researching and presenting ideas in ways consistent with one's subject, purposes and intended audiences. Placement: ACT score below 18, SAT below 480, Accuplacer Sentence Skills below 88, or HS GPA below 2.76. Students who receive a grade of C or better enroll in Composition II; those who receive No Credit enroll in ENGL 1110. From Composition I Co-requisite, Composition I and Composition II, no more than 6 hours apply to graduation.

Core English Composition

## ENGL 1020 Writing And Grammar For Students Of English As A Second Language

[3 credit hours]

Course work focuses on the major grammatical patterns of academic writing in English as well as accuracy in the mechanics of academic writing. The primary emphasis is on these features in the context of the students' own written work. Eligibility by placement exam only. A maximum of 3 semester hours in ENGL 1020 and 1120 may be counted toward fulfilling the 124 hour requirement for graduation.

**Prerequisites:** English Placement with a score of 1020

**Term Offered:** Spring, Fall

## ENGL 1110 College Composition I

[3 credit hours]

Explanatory and persuasive writing in both personal and public genres; instruction and practice in generating, focusing, developing, researching and presenting ideas in ways consistent with one's subject, purposes and intended audience. ESL students must have completed ENGL 1020 with grade of Pass. From Composition I with Workshop, Composition I and Composition II, no more than 6 hours apply toward graduation.

**Prerequisites:** ACT Composite with a score of 18 or Accuplacer Sentence Skills Engl with a score of 88 or Accuplacer NG Writing with a score of 263 or TOTAL SCORE with a score of 940

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

## ENGL 1130 College Composition II: Academic Disciplines And Discourse

[3 credit hours]

Reading and analyzing documents from specific disciplines to synthesize results from multiple perspectives and produce disciplinarily appropriate writing from your research. A significant focus on academic argument and advanced research writing skills included. Discipline-specific sections offered. Web enhanced. Critical reading, research papers required.

**Prerequisites:** ENGL 1110 with a minimum grade of D- or ENGL 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

## ENGL 2010 Advanced Composition

[3 credit hours]

Instruction and practice in writing expository and persuasive prose for a variety of audiences with particular attention to the effect of content and style upon readers. Introduction to advanced methods for critical thinking, argumentation, and research writing. Writing for discipline-specific and/or public audiences encouraged.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

## ENGL 2710 Reading Fiction

[3 credit hours]

Exploration of various kinds of fiction with goals of literary appreciation and analytical insight. (not for major credit)

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## ENGL 2720 Reading Drama

[3 credit hours]

Exploration of various kinds of drama with goals of literary appreciation and analytical insight. (not for major credit)

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## ENGL 2730 Reading Poetry

[3 credit hours]

Exploration of various kinds of poetry with goals of literary appreciation and analytical insight. (not for major credit)

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## ENGL 2770 American Minority Writers

[3 credit hours]

Study of literature by underrepresented groups in the United States. A particular group may be specified; consult Time Schedules for specific topic.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural US Diversity

**ENGL 2800 Writing About Literature**

[3 credit hours]

A writing-intensive (WAC) course introducing the process of writing various types of papers and analyzing literary works. Special emphasis on discovering a topic and on revision and structure in expository writing.

**Prerequisites:** ENGL 1100 with a minimum grade of D- or ENGL 1110 with a minimum grade of D- or HON 1010 with a minimum grade of D- or ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or HON 1020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**ENGL 2950 Science And Technical Report Writing**

[3 credit hours]

Instruction and practice in multiple forms of technical and scientific communication for varied scientific and technical audiences. Emphasis on writing informational and analytical reports and documents in medical, scientific or technical fields. Additional focus on writing for multiple audiences and in different mediums, including online mediums.

**Prerequisites:** ENGL 1010 with a minimum grade of D- or ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

**ENGL 2960 Professional and Business Writing**

[3 credit hours]

Instruction and practice in multiple forms of professional and business writing within an organizational context. Emphasis on the analytical report based on research. Additional focus on writing for multiple audiences and in different mediums, including online mediums.

**Prerequisites:** ENGL 1110 with a minimum grade of D- or ENGL 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core English Composition, Trans Mod English Composition

**ENGL 3010 Creative Writing**

[3 credit hours]

A basic introduction to creative writing. Students write poems, stories or creative nonfiction which serve as the basis for classroom discussion and for conferences with instructor.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGL 3020 Readings for Writers**

[3 credit hours]

Through the analysis of a diverse range of literary genres, this course will teach writers how to develop their own material by studying as models the formal strategies of other writers, including but not limited to language, structure, narrator or speaker, character, dialogue, plot, tone, and the many other elements of literature. This course will also offer a unit on professionalization.

**Prerequisites:** ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 3040 Playwriting - WAC**

[3 credit hours]

This course involves a practical analysis of plays, emphasizing character development, dialogue, and story structure. Students' plays will be workshopped, critiqued, and read aloud.

**ENGL 3050 Persuasive Writing**

[3 credit hours]

Analysis of and practice in the techniques of persuasive writing. Emphasis varies from writing about legal issues to writing about issues of public controversy.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 3060 Screenwriting**

[3 credit hours]

This course involves practical analysis of screenplays, emphasizing story structure and characterization. Students plan, write and refine story lines before writing actual scripts.

**Term Offered:** Spring, Summer, Fall

**ENGL 3070 Writing Within the Community**

[3 credit hours]

This service learning course will teach students how to teach creative writing with compassion in small communities with a need to have their voices heard.

**ENGL 3080 The Art And Process Of The Book**

[3 credit hours]

This course examines all aspects of the printed book - from scrolls to Gutenberg to contemporary publishing - as students work towards designing, printing and binding a finely printed edition.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**ENGL 3150 Linguistic Principles**

[3 credit hours]

An introduction to modern linguistic theories about the nature and structure of language with emphasis on English.

**Term Offered:** Spring, Fall

**ENGL 3250 The Detective Story**

[3 credit hours]

A selective study of the genre from its beginning in the 19th century to the present, with attention to the variety of sub-genres and styles.

**ENGL 3260 Contemporary Fiction**

[3 credit hours]

A study of recent trends in American, British, and World fiction.

**ENGL 3360 Introduction to Poetry and Poetics**

[3 credit hours]

This course serves as an introduction to the techniques and ideas that underlie poetry. It will feature a broad array of poems from multiple times and places, major statements on poetics, and discussion of how poets conceive of what poetry is and how poetics affects reading.

**ENGL 3600 American Literary Traditions**

[3 credit hours]

Introduction to literary history, and the terminology and techniques of the historical study of American literature, intended as preparation for the English major. Texts may include works from the colonial period to the 21st-century.

**Term Offered:** Spring, Summer, Fall**ENGL 3610 British Literary Traditions**

[3 credit hours]

Introduction to literary history, and the terminology and techniques of the historical study of British literature, intended as preparation for the English major. Texts may include works from the Medieval period to the 21st-century.

**Term Offered:** Spring, Fall**ENGL 3620 Children's and Young Adult Literature**

[3 credit hours]

Study of the history and major themes of children's and young adult literature. Appropriate for both majors and non-majors.

**ENGL 3630 American Literature, Beginnings to 1865**

[3 credit hours]

Study of the writing of colonial North America and the United States before 1865, in literary and historical contexts. 3 credits.

**ENGL 3640 American Literature 1865 to the Present**

[3 credit hours]

Study of the writing of the United States after 1865, in literary and historical contexts. 3 credits.

**ENGL 3650 Science Fiction And Fantasy Literature**

[3 credit hours]

This course examines literary works of science fiction and fantasy, and related scholarship, from a variety of perspectives. Readings are selected from prominent writers in both genres.

**Term Offered:** Spring, Fall**ENGL 3670 Literature of Diverse and Nonwhite Communities**

[3 credit hours]

Introduction to study of non-white authors representing formerly colonized countries or other nonwestern and diasporic communities. May include African-American, Caribbean, Central and South Asian, or African literature. Will include texts written in English and/or translated from other languages. Intended as preparation for the English major.

**Term Offered:** Spring**ENGL 3680 British Literature from the Middle Ages to 1789**

[3 credit hours]

Study of the writing of the British isles before 1789, in literary and historical contexts. 3 credits.

**ENGL 3690 British Literature from 1789 to the Present**

[3 credit hours]

Study of the writing of the British isles after 1789, in literary and historical contexts. 3 credits.

**ENGL 3710 Literature Of The Old Testament**

[3 credit hours]

A study of the Old Testament from the literary point of view, including ancient poetry, history, romance, short story, hymn, prophecy, and wisdom writing.

**Term Offered:** Spring, Summer, Fall**ENGL 3720 Literature And Mythology**

[3 credit hours]

Study of classical and biblical mythologies in modern Western literature, private mythologies and literary adaptations of patterns from legend and folklore.

**Term Offered:** Spring, Fall**ENGL 3730 Folklore**

[3 credit hours]

A survey of the field of folklore with an emphasis on folk narrative, folk music and material culture in America.

**Term Offered:** Spring, Fall**ENGL 3740 Folklore And Literature**

[3 credit hours]

A study in the relationship of oral and written literature. Focus is on the literary uses of folk forms and use of tradition by specific writers and schools.

**Term Offered:** Fall**ENGL 3750 Women And Literature**

[3 credit hours]

Offered as Writing Across the Curriculum (WAC) course. Examines literary works in light of major issues raised by feminist criticism and gender studies.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**ENGL 3760 European Literature To The Renaissance**

[3 credit hours]

Offered as Writing Across the Curriculum (WAC) course. A selective study of works of European literature (in translation) from the Ancient Greeks and Romans and Medieval and Renaissance European cultures other than Britain. Particular texts vary, but may include a variety of genres and authors across the periods. Recommended: ENGL 3600, 3610, or 3790.

**Term Offered:** Fall**ENGL 3770 World Literature And Cultures**

[3 credit hours]

This course examines texts and cultures from around the world (and in particular the non-western world). The genres examined include autobiography, poetry, short fiction, novels, plays and histories.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**ENGL 3780 Modern European Literature**

[3 credit hours]

Literature of Europe other than Britain from the 16th century to the present, in English translation.

**Term Offered:** Fall



**ENGL 3790 Foundations Of Literary Study**

[3 credit hours]

Writing Across the Curriculum Course. An overview and introduction to the discipline of literary study.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 3810 Shakespeare I**

[3 credit hours]

An introduction to the study and interpretation of Shakespeare's works in literary, theatrical, and historical context, with a focus on his drama.

**Term Offered:** Spring, Fall

**ENGL 3980 Special Topics in Literature**

[3 credit hours]

Group study of a period, genre, author, or special literary topic. May be repeated with change of specialty number. Topics will be announced in the semester Time Schedules.

**Term Offered:** Spring, Fall

**ENGL 4030 Writing Workshop In Nonfictional Prose**

[3 credit hours]

Directed study of nonfiction genres, rhetorical forms and elements of style; extensive practice in the writing and critical evaluation of prose.

**Prerequisites:** ENGL 2010 with a minimum grade of D- or ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4060 Screenwriting II**

[3 credit hours]

For students familiar with the fundamentals of screenplays, this course devotes attention to writing a complete script. Students are expected to come to the class with a planned story line.

**Prerequisites:** ENGL 3060 with a minimum grade of D- or FILM 3350 with a minimum grade of D-

**Term Offered:** Spring

**ENGL 4070 Writing Workshop In Poetry**

[3 credit hours]

An advanced workshop in writing poetry emphasizing a wider range of readings, craft and technique.

**Prerequisites:** ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4080 Writing Workshop In Fiction**

[3 credit hours]

An advanced workshop emphasizing a wider range of readings, craft and technique. May be repeated once for credit.

**Prerequisites:** ENGL 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4090 Current Writing Theory**

[3 credit hours]

A study of current theory and research connecting reading, critical thinking, and writing with applications of theory to students' writing practice.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D- or ENGL 1170 with a minimum grade of D- or ENGL 1190 with a minimum grade of D- or ENGL 1210 with a minimum grade of D- or ENGL 1220 with a minimum grade of D- or ENGL 1230 with a minimum grade of D-

**Term Offered:** Spring, Fall

**ENGL 4100 The History Of English**

[3 credit hours]

Study of the changes that have taken place in the English language from the earliest days to the present.

**Term Offered:** Spring, Summer, Fall

**ENGL 4110 Old English**

[3 credit hours]

A study of phonology, morphology and syntax with representative readings in verse and prose.

**Term Offered:** Fall

**ENGL 4120 Middle English**

[3 credit hours]

Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.

**ENGL 4150 Applied Linguistics Research And Theory I**

[3 credit hours]

Focus on the methods of applied linguistics in the broad sense, including their use in studies of first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

**Prerequisites:** ENGL 3150 with a minimum grade of D- or LING 3150 with a minimum grade of D-

**Term Offered:** Fall

**ENGL 4170 Applied Linguistics Research And Theory II**

[3 credit hours]

Study of theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

**Prerequisites:** ENGL 4150 with a minimum grade of D- or LING 4150 with a minimum grade of D-

**Term Offered:** Spring

**ENGL 4200 British Fiction: 18th Century**

[3 credit hours]

The development of British fiction in the 18th Century. Recommended: ENGL 3610 or 3790.

**ENGL 4210 Issues in ESL Writing**

[3 credit hours]

Course content includes key concepts in ESL writing instruction and research; characteristics of second language writers and their texts; curricular options; and responding to and assessing ESL writing.

**Term Offered:** Spring, Fall

**ENGL 4280 American Fiction: 20th Century**

[3 credit hours]

Major developments in the 20th-century American short story and novel.

Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall**ENGL 4300 Medieval and Early Tudor Drama**

[3 credit hours]

A study of drama and performance from the British Isles and relevant continental traditions in the late Middle Ages through the early 16th century, in their cultural, material, and performance contexts. Course may include performance traditions and texts such as monastic and liturgical drama, civic Creation-to-Doomsday play cycles, manuscript collections of drama, morality plays, passion plays, miracle and saints' plays, folk plays, courtly interludes and mummings, and royal entries, as well as modern revivals.

**ENGL 4310 British Drama To 1642**

[3 credit hours]

A study of drama in England from the opening of the first public theaters to their closing in 1642. May include plays produced for public performance and other dramatic works. Emphasis will be on playwrights other than Shakespeare. Recommended: ENGL 3610, 3790, or 3810

**ENGL 4340 Modern Drama**

[3 credit hours]

Drama in English or translation from the 1870s to the 1930s.

**ENGL 4400 British Literature: The Medieval Period**

[3 credit hours]

The study of British literature before 1500, often in translation. Topics vary between early medieval texts and culture (8th to 11th centuries), late medieval texts and culture (12th to 15th centuries, excluding Chaucer), and specific themes or genres across sub-periods. Check departmental course descriptions for the specific topic in a given semester. May be repeated for credit if topics are different. Recommended: ENGL 3610, 3810, or 3790.

**Term Offered:** Spring, Fall**ENGL 4420 British Literature: Renaissance**

[3 credit hours]

Poetry and prose of the 16th century, with emphasis on the Elizabethan period. Recommended: ENGL 3610, 3790, or 3810.

**Term Offered:** Spring, Fall**ENGL 4440 Early 17th Century English Literature**

[3 credit hours]

Poetry and prose from 1603 to 1660. Recommended: ENGL 3610, 3790, or 3810.

**Term Offered:** Spring, Fall**ENGL 4460 British Literature: Restoration And 18th Century**

[3 credit hours]

Drama, poetry, and prose of the Restoration, neo-classical and pre-Romantic periods. Recommended: ENGL 3610, 3790, or 3810.

**Term Offered:** Spring**ENGL 4500 British Literature: The Romantic Period**

[3 credit hours]

Study of major authors, genres, and ideas of the Romantic period: approximately 1789 to 1837.

**Term Offered:** Spring, Fall**ENGL 4520 British Literature: The Victorian Period**

[3 credit hours]

Study of major authors, genres, and ideas of the Victorian period: approximately 1837 to 1901.

**Term Offered:** Spring, Fall**ENGL 4540 British Literature: The 20th Century**

[3 credit hours]

Study of major authors, genres, and ideas of 20th-century British literature.

**ENGL 4560 Literature of the British Empire 1850 to the Present**

[3 credit hours]

Studies in texts from Britain and its former colonies. Genres may include the novel, travel writing, memoir, and film.

**Term Offered:** Spring, Fall**ENGL 4600 Early American Literature**

[3 credit hours]

The poetry and theology of the New England Puritans, especially Bradstreet and Taylor, the literature of the American Enlightenment, the beginnings of American Romanticism in Bryant and Cooper. Recommended: ENGL 3600 or 3790.

**Term Offered:** Fall**ENGL 4620 American Romanticism**

[3 credit hours]

Literature of the United States from the early nineteenth century through about 1865, with concentration on the literary production between 1840 and 1865. Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall**ENGL 4630 American Literary Realism**

[3 credit hours]

American literature from the post-Civil War period to the early 20th Century. Recommended: ENGL 3600 or 3790.

**Term Offered:** Fall**ENGL 4640 Early 20th Century American Poetry**

[3 credit hours]

Study of American poetry from 1900 to 1950. Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall**ENGL 4650 African American Writers Before The 20th Century**

[3 credit hours]

A survey of African-American prose, poetry, drama and fiction from 1760 to 1915. Recommended: ENGL 2800, or 3790.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**ENGL 4660 African American Literature In The 20th Century**

[3 credit hours]

A course focused on 20th- and 21st-century African-American poetry, fiction, nonfiction, and drama.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**ENGL 4680 American Literature Since World War II**

[3 credit hours]

An exploration of American literature from 1945 to the present day with a focus on both poetry and fiction, and possibly drama and other literary forms. Recommended: ENGL 3600 or 3790.

**Term Offered:** Spring, Fall

**ENGL 4690 Native American Literature And Culture**

[3 credit hours]

Study of texts by and about Native Americans, including the oral traditions of storytelling and mythology.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**ENGL 4730 World Cinemas And Cultures**

[3 credit hours]

Study of cinematic representations across cultures and the relations between film, its subjects and the camera.

Multicultural Non-US Diversity

**ENGL 4780 Principles Of Literary Criticism**

[3 credit hours]

A comparative study of the principles of literary criticism, including readings from representative critics of all ages, and of basic aesthetic theories underlying the major approaches to literature. Recommended: ENGL 2800, or 3790.

**ENGL 4800 Chaucer**

[3 credit hours]

A study of Geoffrey Chaucer's major works and cultural, literary, and critical contexts. All works will be read in Chaucer's original Middle English. Course has two variations: one focusing on The Canterbury Tales and another on the dream visions and Troilus and Criseyde. Consult Time Schedules or departmental course descriptions for the specific topic. May be repeated for credit with different topic. Recommended: ENGL 3610, 3790 or 3810.

**Term Offered:** Spring, Fall

**ENGL 4810 Shakespeare II**

[3 credit hours]

Advanced study of Shakespeare's plays, particularly his later plays.

Recommended: ENGL 3810.

**Term Offered:** Fall

**ENGL 4820 Milton**

[3 credit hours]

A study of the poetry and selected prose of John Milton. Recommended: ENGL 3610, 3810, or 3790.

**Term Offered:** Spring, Fall

**ENGL 4850 Studies In The Work Of A British Author**

[3 credit hours]

Author changes with each offering. Consult Time Schedules for authors to be studied. Can be repeated for credit if topic is different. Recommended: ENGL 3610, 3810, or 3790.

**Term Offered:** Spring, Fall

**ENGL 4860 Studies In The Work Of An American Author**

[3 credit hours]

Author changes with each offering. Consult Time Schedules for authors to be studied. Can be repeated for credit if topic is different. Recommended: ENGL 3600, 3810, or 3790.

**Term Offered:** Spring, Fall

**ENGL 4900 English Honors Seminar**

[2 credit hours]

The Honors Seminar is taken in conjunction with the Honors Thesis (ENGL 4960). Required of all candidates for departmental Honors.

**Term Offered:** Fall

**ENGL 4940 Internship In English**

[1-4 credit hours]

Internship with an approved program, company or agency employing research, writing editing or linguistics expertise. Student must submit proposal for approval by advisory and a departmental committee. (Repeatable for a maximum of 4 hours credit.)

**Term Offered:** Spring, Summer, Fall

**ENGL 4950 Special Topics For Writers**

[3 credit hours]

An advanced course in genre writing. Content varies with each offering. May be repeated once for credit.

**Term Offered:** Spring, Fall

**ENGL 4960 English Honors Thesis**

[1-4 credit hours]

Research and writing of a thesis on a topic in English or linguistics required of all candidates for departmental honors.

**Term Offered:** Spring, Fall

**ENGL 4980 Special Topics In Literature**

[3 credit hours]

An undergraduate course on a special topic. Consult Time Schedules for topic to be studied and semester offered.

**Term Offered:** Spring, Fall

**ENGL 4990 Independent Study**

[1-3 credit hours]

Supervised independent study in special topics of British and American language and literature. Courses may be repeated more than once for credit.

**Term Offered:** Spring, Summer, Fall

# ENTREPREN, FAM AND SMALL BUSN (EFSB)

## EFSB 3480 Entrepreneurial Finance

[3 credit hours]

Course focuses on basics of using financial tools to create and analyze financial statements in new ventures and to understand the sources and management of capital for start-ups and growing businesses.

**Prerequisites:** BUAD 2040 with a minimum grade of D- or ACTG 1040 with a minimum grade of D-

**Term Offered:** Fall

## EFSB 3500 Introduction To Entrepreneurship for Non-Business Students

[3 credit hours]

Course provides an extensive overview of issues and opportunities involved in starting new businesses. Focus is on the entrepreneurial environment and opportunities, technopreneurship, and the entrepreneurial mindset. (This course may not be taken with or after taking EFSB 3590).

**Term Offered:** Fall

## EFSB 4010 Growing Family And Entrepreneurial Businesses

[3 credit hours]

Advanced study of issues pertaining to family and entrepreneurial businesses. Issues of family psychology, growth strategies, financing, valuation, and harvesting the business are studied using hands-on consulting and case analysis.

**Prerequisites:** (EFSB 3480 with a minimum grade of D- and EFSB 4590 with a minimum grade of D-) or (BUAD 3040 with a minimum grade of D- and EFSB 4590 with a minimum grade of D-)

**Term Offered:** Spring

## EFSB 4590 Entrepreneurship and Small Business Management

[3 credit hours]

A study of entrepreneurship and the process of starting and/or managing a new venture. Tools for developing and managing in all areas in a new or small business are applied in hands-on consulting with local companies and case analysis.

**Prerequisites:** EFSB 3480 (may be taken concurrently) with a minimum grade of D- or BUAD 3040 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Fall

## EFSB 4690 Innovation and Technology Commercialization

[3 credit hours]

The course addresses the entire technology commercialization process from an innovative idea to market. A strategic technology plan to bring the idea forward to a launch of a new product is required.

**Term Offered:** Fall

## EFSB 4790 Franchising

[3 credit hours]

Franchising is a major form of business ownership and a strategy for growing businesses in the United States and the world. It has been increasing rapidly which has led to increasing demand for employees with franchising knowledge. This course addresses franchising from the perspectives of the entrepreneur as a franchisee and the entrepreneur as a franchisor. Specific attention is given to the franchisor-franchisee relationship and how both sides could work together. Junior Status Required.

**Term Offered:** Spring

## EFSB 4940 Internship In Entrepreneurship And Family Business

[3 credit hours]

Receive practical entrepreneurship experience working in a family or small business.

**Term Offered:** Spring, Summer, Fall

## EFSB 4980 Special Topics In Entrepreneurship And Family Business

[3 credit hours]

This course is designed to focus on current issues in entrepreneurship and family business.

## EFSB 4990 Independent Study

[1-3 credit hours]

Individually supervised study in Entrepreneurship and Family Business. Student must submit a proposal to be approved by the Program Advisor or Chair prior to enrolling in the course.

**Term Offered:** Spring, Summer, Fall

# EXERCISE SCIENCE (EXSC)

## EXSC 1060 Understanding Human Body Structure and Function

[3 credit hours]

This introductory course in human anatomy and physiology emphasizes critical thinking, functional concepts and interactive exercises.

This course does not meet the Natural and Physical Science Core Requirements for the University.

**Term Offered:** Fall

## EXSC 1460 Fundamentals of Anatomy and Physiology Lab

[1 credit hour]

Laboratory sessions designed to provide the fundamentals of anatomy and physiology of the cell, tissues, and major organ systems of the human body using a systemic approach. Topics include scientific method, anatomical terminology, the cell, the four tissues

**Corequisites:** EXSC 1560

**Term Offered:** Spring, Fall

Core Natural Sciences

## EXSC 1560 Fundamentals of Anatomy and Physiology

[3 credit hours]

This course describes the fundamentals of anatomy and physiology of the cell, tissues, and major organ systems of the human body using a systemic approach. Topics include anatomical terminology, homeostasis, the cell, the four tissue types, and the eleven organ systems of the human body. Co-requisite: KINE 1460.

**Corequisites:** EXSC 1460

**Term Offered:** Spring, Fall

Core Natural Sciences

## EXSC 1700 Intro to Exercise Science

[2 credit hours]

An introduction to the professions involving exercise science, sports science, athletic training and rehabilitation therapy. Emphasis is on basic concepts of anatomical, neurological, physiological, biomechanical and psychological function in human movement.

**Term Offered:** Spring, Fall

## EXSC 2460 Human Anatomy And Physiology I Lab

[1 credit hour]

Laboratory exercise in anatomical terminology, cell division and transport, histology, and dissection, identification, and physiology of the skeletal system, skeletal muscle system, and nervous system; including the eye and ear. Co-requisite: KINE 2560.

**Corequisites:** EXSC 2560

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

## EXSC 2470 Human Anatomy And Physiology II Lab

[1 credit hour]

Laboratory exercises in endocrine, cardiovascular, respiratory, digestive, lymphatic, urinary, and reproductive anatomy, histology, physiology, including computer assisted experiments.

**Corequisites:** EXSC 2570

**Term Offered:** Spring, Summer, Fall

## EXSC 2510 Human Anatomy

[3 credit hours]

An integrated study of both regional anatomy and musculoskeletal, cardiovascular, lymphatic, respiratory, neurologic, digestive, renal, endocrine and reproductive systems. Required for students in exercise science and allied health professional programs.

**Prerequisites:** KINE 1700 with a minimum grade of C or EXSC 1700 with a minimum grade of C

**Corequisites:** EXSC 2520

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

## EXSC 2520 Human Anatomy Lab

[1 credit hour]

Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory anatomy.

**Corequisites:** EXSC 2510

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences

## EXSC 2530 Human Physiology

[3 credit hours]

This course provides foundational information on human physiology. Emphasis is placed on cell physiology, metabolism, as well as the musculoskeletal, cardiovascular, respiratory, endocrine, and immune systems in the maintenance of normal body function.

**Prerequisites:** (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

## EXSC 2540 Human Physiology Lab

[1 credit hour]

Laboratory exercises in musculoskeletal, neurological, cardiovascular and respiratory physiology.

**Corequisites:** EXSC 2530

**Term Offered:** Spring, Summer, Fall

## EXSC 2560 Anatomy and Physiology I

[3 credit hours]

Anatomy and physiology of the human body. Study of cells, tissues, special senses, and the skeletal, muscle, and nervous systems. Co-requisite: KINE 2460. Natural science core course.

**Corequisites:** EXSC 2460

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## EXSC 2570 Human Anatomy and Physiology II

[3 credit hours]

Anatomy and physiology of human endocrine, blood, cardiovascular, lymphatic, respiratory, digestive, urinary and electrolyte, and reproductive systems. Pre-requisite: KINE 2460 and KINE 2560 or permission of instructor; Co-requisite: KINE 2470.

**Prerequisites:** (KINE 2460 with a minimum grade of C and KINE 2560 with a minimum grade of C) or (EXSC 2460 with a minimum grade of C and EXSC 2560 with a minimum grade of C)

**Corequisites:** EXSC 2470

**Term Offered:** Spring, Summer, Fall



**EXSC 2580 Human Pathophysiology For Health Care**

[3 credit hours]

Study of pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries of organ systems.

**Prerequisites:** (KINE 2460 with a minimum grade of D- and KINE 2470 with a minimum grade of D- and KINE 2560 with a minimum grade of D- and KINE 2570 with a minimum grade of D-) or (KINE 2510 with a minimum grade of D- and KINE 2520 with a minimum grade of D-) or (EXSC 2460 with a minimum grade of D- and EXSC 2470 with a minimum grade of D- and EXSC 2560 with a minimum grade of D- and EXSC 2570 with a minimum grade of D-) or (EXSC 2510 with a minimum grade of D- and EXSC 2520 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**EXSC 2590 Microbiology and Infectious Diseases**

[3 credit hours]

This course describes and differentiates basic Microbiology topics as well as covering bacterial, viral, and protozoan infections within various body systems.

**Prerequisites:** BIOL 2150 with a minimum grade of C or BIOL 2170 with a minimum grade of C or EEES 2150 with a minimum grade of C or KINE 2510 with a minimum grade of C or KINE 2530 with a minimum grade of C or KINE 2560 with a minimum grade of C or EXSC 2510 with a minimum grade of C or EXSC 2530 with a minimum grade of C or EXSC 2560 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**EXSC 2610 Evaluation of Lower Extremity Injuries**

[3 credit hours]

Study of the pathology, etiology and physiology of lower extremity injuries common in athletics as well as life-threatening head and neck injuries. Signs, symptoms and specific tests will be discussed.

**Corequisites:** EXSC 2630

**Term Offered:** Fall

**EXSC 2620 Evaluation of Upper Extremity Injuries**

[3 credit hours]

Study of the pathology, etiology and physiology of Upper extremity injuries common in athletics as well as non-life-threatening head and neck injuries. Signs, symptoms and specific tests for the upper extremity and trunk will be discussed.

**Prerequisites:** KINE 2710 with a minimum grade of B- or EXSC 2710 with a minimum grade of B-

**Corequisites:** EXSC 2640

**Term Offered:** Spring

**EXSC 2630 Clinical Anatomy for Athletic Training I**

[1 credit hour]

A clinical anatomy course for athletic training majors focusing on the musculoskeletal system of the lower extremity and how it relates to injury mechanism, prevention and rehabilitation in active individuals.

**Corequisites:** EXSC 2610

**Term Offered:** Fall

**EXSC 2640 Clinical Anatomy for Athletic Training II**

[1 credit hour]

A clinical anatomy course for athletic training majors focusing on the musculoskeletal system of the upper extremity and how it relates to injury mechanism, prevention and rehabilitation in active individuals.

**Corequisites:** EXSC 2620

**Term Offered:** Spring

**EXSC 2710 Clinical Skills Development I**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the first year of the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Term Offered:** Fall

**EXSC 2720 Clinical Skills Development II**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the lower extremity evaluation course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 2710 with a minimum grade of B- or EXSC 2710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 3200 Advanced Human Anatomy**

[3 credit hours]

An elective course that applies musculoskeletal anatomy to human movement, function, injury evaluation and rehabilitation through in cadaver observation and dissection.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 3240 Concepts of Exercise Fitness and Health Strategies**

[3 credit hours]

This focus of this course is the self-exploration of the importance of regular physical activity including cardiovascular and muscular exercise on maintaining physical fitness and wellness. Min.grade of C for HPFP concentration.

**Prerequisites:** (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 3520 Applied Exercise Physiology**

[3 credit hours]

This course will provide information related to the physiological responses of the human organism to exercise and exercise training. Emphasis will also be placed on the role exercise plays in health and disease prevention.

**Prerequisites:** KINE 2530 with a minimum grade of C or KINE 2570 with a minimum grade of C or EXSC 2530 with a minimum grade of C or EXSC 2570 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**EXSC 3530 Applied Exercise Physiology Laboratory**

[1 credit hour]

This course is the laboratory component of the applied exercise physiology course. Emphasis will be placed on the concepts learned in lecture. This will occur through hands-on activities and experiments involving various forms of exercise testing and the use of standardized equipment.

**Corequisites:** EXSC 3520

**Term Offered:** Spring, Summer, Fall

**EXSC 3580 Human Pathophysiology**

[3 credit hours]

A discovery of the pathophysiology of organ systems, concentrating on metabolic, cardiovascular, respiratory, endocrine, muscle, and gastrointestinal systems with exercise as a guiding element of discussion.

**Prerequisites:** EXSC 2530 with a minimum grade of C or KINE 2530 with a minimum grade of C

**Term Offered:** Spring, Fall

**EXSC 3610 General Medical Conditions For Athletic Trainers**

[2 credit hours]

Knowledge and skills that entry-level athletic trainers must possess to recognize, treat and refer, when appropriate, the general medical conditions and disabilities of people involved in physical activity.

**Prerequisites:** (KINE 3630 with a minimum grade of D- and KINE 3710 with a minimum grade of B-) or (EXSC 3630 with a minimum grade of D- and EXSC 3710 with a minimum grade of B-)

**Term Offered:** Spring, Fall

**EXSC 3620 Professional Responsibilities in the Fitness Industry**

[3 credit hours]

This course examines the ethical, legal and professional responsibilities of working in an allied health profession as a personal trainer, fitness consultant or exercise specialist.

**Term Offered:** Fall

**EXSC 3630 Therapeutic Modalities For Athletic Trainers**

[3 credit hours]

Physiological, mechanical and bio-electrical principles and techniques of application for electrical, thermal, high frequency radiation and traction modalities used in the treatment of athletic injuries.

**Prerequisites:** (KINE 2620 with a minimum grade of D- and KINE 2720 with a minimum grade of B-) or (EXSC 2620 with a minimum grade of D- and EXSC 2720 with a minimum grade of B-)

**Term Offered:** Fall

**EXSC 3650 Foundations of Sports Medicine**

[3 credit hours]

A review of the foundation aspects of sports medicine, including but not limited to: prevention and wellness, emergency care, clinical examination and diagnosis, therapeutic interventions and aspects of professional practice. Specifically relates to the fields of athletic training, sports medicine, musculoskeletal rehabilitation and orthopedic medicine.

Course will also include observation of sports medicine professionals in a clinical setting.

**EXSC 3660 Rehabilitation Of Athletic Injuries**

[3 credit hours]

A systematic approach to exercise program development, techniques, indications and contraindications of exercise, and exercise progression as related to athletic injuries, prevention, reconditioning and return to play guidelines.

**Prerequisites:** KINE 3710 with a minimum grade of B- or EXSC 3710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 3680 Sport and Exercise Pharmacology**

[3 credit hours]

Provide the basics of pharmacology related to sport and exercise including: pharmacokinetics, indications and contradictions of various drugs and legal concerns related to using therapeutic and non-therapeutic drugs. Min.grade of C for HPFP concentration.

**Prerequisites:** (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C) or (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C)

**Term Offered:** Spring

**EXSC 3710 Clinical Skills Development III**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the upper extremity evaluation course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 2720 with a minimum grade of B- or EXSC 2720 with a minimum grade of B-

**Term Offered:** Fall

**EXSC 3720 Clinical Skills Development IV**

[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the therapeutic modalities course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 3710 with a minimum grade of B- or EXSC 3710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 3830 Principles of Strength Conditioning**

[3 credit hours]

This course provides students with a fundamental understanding of muscular strength conditioning principles and the application of these principles to exercise programming relevant to physical activity and athletic performance. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C) or (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Term Offered:** Fall**EXSC 3850 Cardiac Dysrhythmia Interpretation**

[3 credit hours]

This course examines cardiac anatomy, electrophysiology and basic cardiac rhythms with an emphasis on the recognition and interpretation of cardiac dysrhythmias. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Term Offered:** Fall**EXSC 3860 Cardiac Dysrhythmia Lab**

[1 credit hour]

This course is the practical application of the techniques required to administer a 12 lead EKG at rest and during exercise. Students will record multiple EKG's and interpret the rhythm. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Corequisites:** EXSC 3850**Term Offered:** Fall**EXSC 3920 Cardiopulmonary Pathophysiology**

[3 credit hours]

**EXSC 3950 Research Design in Exercise Science**

[3 credit hours]

This course emphasizes the design, analysis and interpretation of qualitative and quantitative research methods in the areas of athletic training, exercise science and other health-related fields. Min. grade of C or better for HPFP concentration.

**Prerequisites:** MATH 2600 with a minimum grade of D- or RESM 4100 with a minimum grade of D-

**Term Offered:** Spring**EXSC 4140 Fitness Internship I**

[4 credit hours]

Students will actively engage and participate in the day-to-day functions including operational, managerial and client assessments in a health, wellness or fitness facility (16 hours/week). Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 3850 with a minimum grade of C and KINE 3860 with a minimum grade of C and KINE 4850 with a minimum grade of C and KINE 4860 with a minimum grade of C) or (EXSC 3850 with a minimum grade of C and EXSC 3860 with a minimum grade of C and EXSC 4850 with a minimum grade of C and EXSC 4860 with a minimum grade of C)

**Term Offered:** Fall**EXSC 4210 Exercise Facility Management**

[3 credit hours]

Students will develop an understanding of the skills necessary for marketing, promoting and managing various fitness, wellness and rehabilitation facilities. Min. grade of C for HPFP concentration.

**Term Offered:** Spring**EXSC 4250 Readings in Exercise Biology**

[3 credit hours]

Faculty and student directed readings of original research in Exercise Biology, along with laboratory demonstrations. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

**Term Offered:** Spring, Fall**EXSC 4540 Applied Biomechanics**

[3 credit hours]

This course focuses on the application of biomechanics concepts to the acquisition and refinement of fundamental movement patterns, basic functional skills and sport activities. Such topics as locomotion, balance and the biomechanical basis of injury are examined.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2530 with a minimum grade of C)

**Term Offered:** Spring, Fall**EXSC 4550 Applied Biomechanics Lab**

[1 credit hour]

This course is the laboratory component of the applied biomechanics course. Emphasis will be placed on the application of the concepts learned in lecture to rehabilitation, sports in jury, exercise, and sport situations. This will occur through hands-on activities and experiments involving contemporary forms of biomechanical instrumentation.

**Corequisites:** EXSC 4540**Term Offered:** Spring, Fall

**EXSC 4640 Neurological And Pathological Foundations Of Rehabilitation**  
[3 credit hours]

Study of neurological control of normal movement and the implications of various medical pathologies for rehabilitation. Emphasis on inflammatory processes, metabolic and vascular disturbances, traumatic injuries, nutritional deficiencies, neoplasms, degenerative conditions and congenital disorders.

**Prerequisites:** (KINE 2510 with a minimum grade of C or KINE 2560 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C or EXSC 2560 with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**EXSC 4650 Organization And Administration Of Athletic Training Programs**  
[3 credit hours]

Administration of athletic training programs including athletic training room management, budgeting, staffing, insurance, medical records, emergency care planning, preparticipation physical examinations, athletic training room design, legal issues and public relations.

**Prerequisites:** KINE 3720 with a minimum grade of B- or EXSC 3720 with a minimum grade of B-

**Term Offered:** Fall

**EXSC 4710 Clinical Skills Development V**  
[2 credit hours]

Laboratory experience to review and test the clinical skills taught during the rehabilitation of sports injuries course in the athletic training curriculum and clinical skill development experiences provided in the athletic training room with intercollegiate athletic teams.

**Prerequisites:** KINE 3720 with a minimum grade of B- or EXSC 3720 with a minimum grade of B-

**Term Offered:** Fall

**EXSC 4720 Clinical Skills Development Vi**  
[2 credit hours]

Emphasis on clinical experience in athletic training off-campus. Also includes a laboratory experience to review clinical skills.

**Prerequisites:** KINE 4710 with a minimum grade of B- or EXSC 4710 with a minimum grade of B-

**Term Offered:** Spring

**EXSC 4830 Principles of Endurance Conditioning**  
[3 credit hours]

This course is intended to prepare students with a fundamental understanding of endurance conditioning principles and the application of these principles to exercise programming relevant to physical activity and athletic performance.

**Prerequisites:** (KINE 2510 with a minimum grade of C and KINE 2520 with a minimum grade of C and KINE 2530 with a minimum grade of C and KINE 2540 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2510 with a minimum grade of C and EXSC 2520 with a minimum grade of C and EXSC 2530 with a minimum grade of C and EXSC 2540 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C) or (KINE 2560 with a minimum grade of C and KINE 2460 with a minimum grade of C and KINE 2570 with a minimum grade of C and KINE 2470 with a minimum grade of C and KINE 3520 with a minimum grade of C and KINE 3530 with a minimum grade of C) or (EXSC 2560 with a minimum grade of C and EXSC 2460 with a minimum grade of C and EXSC 2570 with a minimum grade of C and EXSC 2470 with a minimum grade of C and EXSC 3520 with a minimum grade of C and EXSC 3530 with a minimum grade of C)

**Term Offered:** Fall

**EXSC 4840 Fitness Internship II**  
[4 credit hours]

Students will actively engage and participate in the day-to-day functions including operational, managerial and client assessments in a health, wellness or fitness facility (16 hours/week). Min. grade of C for HPFP concentration.

**Prerequisites:** KINE 4140 with a minimum grade of D- or EXSC 4140 with a minimum grade of D-

**Term Offered:** Spring

**EXSC 4850 Clinical Exercise Testing**  
[3 credit hours]

The purpose of this course is to provide students with an understanding of the relationship between exercise and chronic disease, an understanding of the mechanisms and adaptations by which exercise influences the disease process, and an understanding of the role and importance of exercise testing and training in the prevention, evaluation and treatment of these chronic diseases. Min. grade of C for HPFP concentration.

**Prerequisites:** (KINE 3850 with a minimum grade of C and KINE 3860 with a minimum grade of C) or (EXSC 3850 with a minimum grade of C and EXSC 3860 with a minimum grade of C)

**Term Offered:** Spring

**EXSC 4860 Clinical Exercise Testing Lab**  
[1 credit hour]

The purpose of this course is to provide students with the skills needed to perform a 12 lead electrocardiogram stress test on their own. Min. grade of C for HPFP concentration.

**Prerequisites:** KINE 4850 with a minimum grade of D- or EXSC 4850 with a minimum grade of D-

**Term Offered:** Spring

**EXSC 4900 Human Performance Seminar**  
[1-3 credit hours]

Classroom and laboratory analysis of current research in varied topic areas.

**Term Offered:** Spring, Fall

**EXSC 4940 Internship-Practicum**

[2-15 credit hours]

Clinical experience in locations both inside and outside the university setting. Placement depends on area of study.

**Term Offered:** Summer

**EXSC 4990 Independent Study In Exercise Science/Physical Education**

[1-3 credit hours]

Directed individual study. Specialty title, seminar sheet and permission of instructor required.

**Term Offered:** Spring, Summer, Fall

**EXSC 5110 Measurement And Statistical Inference In Human****Performance**

[3 credit hours]

Application of measurement and statistical inference to human performance testing and research. Includes descriptive and inferential statistics, principles of test construction and introduction to authentic assessment in public schools.

**Term Offered:** Spring

**EXSC 5250 Readings In Exercise Biology**

[3 credit hours]

Faculty and student directed readings of original research in Exercise Biology. Readings will focus on how changes in physical activity influence the biology of skeletal muscle.

**Term Offered:** Spring, Fall

**EXSC 6100 Physiology of Exercise**

[3 credit hours]

This course is designed to provide an understanding of the mechanisms of the physiological responses to exercise. Emphasis will be placed on adaptations to exercise training and the role of exercise in health and disease.

**Term Offered:** Fall

**EXSC 6130 Biomechanics Of Human Motion**

[3 credit hours]

This course provides a basic overview of the principles of biomechanics as they apply to human movement. In-depth discussion and lab activities focus on the application of these principles to such topics as muscle function, locomotion, balance, mechanisms of injury and ergonomics.

**Term Offered:** Spring, Fall

**EXSC 6200 Biomechanical Instrumentation**

[3 credit hours]

Provides students with experience in the research and clinical use of videography, force and pressure plates, electromyography and other systems in applied biomechanics. Emphasis on hands-on lab experience and topics related to data collection and signal processing.

**Prerequisites:** KINE 6130 with a minimum grade of D- or EXSC 6130 with a minimum grade of D-

**Term Offered:** Spring

**EXSC 6230 Scientific Writing And Research Methods**

[3 credit hours]

Principles and issues involved in the design and conduct of research in exercise science: critical evaluation, research design, development of a research proposal, grant acquisition, and compliance with institutional and federal guidelines on the use of humans and animals.

**Term Offered:** Fall

**EXSC 6420 Cardiopulmonary Exercise Physiology**

[3 credit hours]

The responses and adaptations of the cardiovascular and pulmonary systems to exercise in healthy individuals.

**Prerequisites:** KINE 6100 with a minimum grade of D- or EXSC 6100 with a minimum grade of D-

**Term Offered:** Spring, Fall

**EXSC 6430 Environmental Physiology**

[3 credit hours]

Physiological responses and adaptations to extreme environments.

**Term Offered:** Fall

**EXSC 6460 Readings in Cardiovascular Physiology**

[3 credit hours]

This is a faculty directed examination of current research in Cardiovascular Physiology. Emphasis is placed on the role of physical activity on the prevention and/or treatment of cardiovascular treatment.

**Term Offered:** Spring, Fall

**EXSC 6540 Laboratory Techniques In Exercise Physiology**

[3 credit hours]

This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation and skeletal muscle function. Hands-on data collection will be emphasized.

**Term Offered:** Fall

**EXSC 6550 Lab Techniques In Exercise Biology**

[3 credit hours]

The course provides students with theoretical and practical knowledge for assessing cellular and molecular responses to exercise and inactivity. Emphasis will be placed on laboratory safety, reagent preparation, cell culture techniques, and tissue analysis.

**Prerequisites:** (KINE 6100 with a minimum grade of D- and KINE 6540 with a minimum grade of D-) or (EXSC 6100 with a minimum grade of D- and EXSC 6540 with a minimum grade of D-)

**EXSC 6720 Advanced Clinical Anatomy**

[2 credit hours]

A cadaver anatomy course focusing on the extremities. Emphasis will be placed on the link between anatomical structure, orthopedic injuries, and clinical practice.

**Term Offered:** Fall

**EXSC 6960 Masters Thesis In Exercises Science**

[1-4 credit hours]

Independence research in Exercise Science completed as part of the requirements for the Master of Science in Exercise Science degree.

**Term Offered:** Spring, Summer, Fall

**EXSC 6990 Independent Study In Exercise Science Independent Study In Exercise Science**

[1-4 credit hours]

Faculty supervised independent reading, laboratory research, field experience and other activities not suited for class instruction.

**Term Offered:** Spring, Summer, Fall



**EXSC 7110 Measurement And Statistical Inference In Human Performance**

[3 credit hours]

Application of measurement and statistical inference to human performance testing and research. Includes descriptive and inferential statistics, principles of test construction and introduction to authentic assessment in public schools.

**Term Offered:** Spring**EXSC 7250 Readings In Exercise Biology**

[3 credit hours]

**EXSC 8100 Physiology of Exercise**

[3 credit hours]

This course is designed to provide an understanding mechanisms of the physiological responses to exercise. Emphasis will be placed on adaptations to exercise training and the role of exercise in health and disease.

**Term Offered:** Fall**EXSC 8130 Biomechanics of Human Motion**

[3 credit hours]

This course provides a basic overview of the principles of biomechanics as they apply to human movement. In-depth discussion and lab activities focus on the application of these principles to such topics as muscle function, locomotion, balance, mechanisms of injury and ergonomics.

**Term Offered:** Spring, Fall**EXSC 8200 Biomechanical Instrumentation**

[3 credit hours]

Provides students with experience in the research and clinical use of videography, force and pressure plates, electromyography and other systems in applied biomechanics. Emphasis on hands-on lab experience and topics related to data collection and signal processing.

**Prerequisites:** (KINE 6130 with a minimum grade of D- and KINE 8130 with a minimum grade of D-) or (EXSC 6130 with a minimum grade of D- and EXSC 8130 with a minimum grade of D-)

**Term Offered:** Spring**EXSC 8230 Scientific Writing And Research Methods**

[3 credit hours]

Principles and issues involved in the design and conduct of research in exercise science: critical evaluation, research design, development of a research proposal, grant acquisition, and compliance with institutional and federal guidelines on the use of humans and animals.

**Term Offered:** Fall**EXSC 8420 Cardiopulmonary Exercise Physiology**

[3 credit hours]

The responses and adaptations of the cardiovascular and pulmonary systems to exercise in healthy individuals.

**Prerequisites:** KINE 8100 with a minimum grade of D- or EXSC 8100 with a minimum grade of D-

**Term Offered:** Spring, Fall**EXSC 8430 Environmental Physiology**

[3 credit hours]

Physiological responses and adaptations to extreme environments.

**Term Offered:** Fall**EXSC 8460 Readings in Cardiovascular Physiology Readings in Cardiovascular Physiology**

[3 credit hours]

This is a faculty directed examination of current research in Cardiovascular Physiology. Emphasis is placed on the role of physical activity on the prevention and/or treatment of cardiovascular diseases.

**Prerequisites:** KINE 8100 with a minimum grade of D- or EXSC 8100 with a minimum grade of D-

**Term Offered:** Spring, Fall**EXSC 8540 Laboratory Techniques In Exercise Physiology**

[3 credit hours]

This course covers theoretical and practical knowledge for the assessment of exercise metabolism, cardiorespiratory function, body composition, thermoregulation and skeletal muscle function. Hands-on data collection will be emphasized.

**Term Offered:** Spring, Fall**EXSC 8550 Lab Techniques In Exercise Biology**

[3 credit hours]

The course provides students with theoretical and practical knowledge for assessing cellular and molecular responses to exercise and inactivity. Emphasis will be placed on laboratory safety, reagent preparation, cell culture techniques, and tissue analysis.

**Prerequisites:** (KINE 8100 with a minimum grade of D- and KINE 8540 with a minimum grade of D-) or (EXSC 8100 with a minimum grade of D- and EXSC 8540 with a minimum grade of D-)

**EXSC 8720 Anatomical Concepts for Clinical Practice**

[3 credit hours]

A cadaver anatomy course focusing on the extremities. Emphasis will be placed on the link between anatomical structure, orthopedic injuries, and clinical practice.

**Term Offered:** Fall**EXSC 8960 Doctoral Dissertation In Exercise Science**

[1-12 credit hours]

Directed research towards completion of the doctoral degree. Students may register for credit in more than one semester. Total dissertation credit toward the degree may not exceed 16 hours.

**Term Offered:** Spring, Summer, Fall**EXSC 8990 Independent Study In Exercise Science**

[1-4 credit hours]

Faculty supervised independent reading, laboratory research, field experience and other activities not suited for class instruction.

**Term Offered:** Spring, Summer, Fall

# FILM (FILM)

## FILM 1310 Introduction To Film

[3 credit hours]

Introduction to the history and interpretation of cinema as art form, with emphasis on discovering how meaning is encoded in film at the levels of shot, sequence and narrative construction. (Not recommended or required for majors.)

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## FILM 2230 Creative Approaches to Cinema

[3 credit hours]

An introductory course focused on visual storytelling through the examination and construction of the still image. Emphasis on interpreting photography, paintings and stories designed within the construct of the single image. This course uses lectures, readings and in-class exercises to produce creative narratives through photo-romans. Students must have taken or be co-enrolled in Critical Approaches to Cinema, Film 2340. 3 credit hours.

**Corequisites:** FILM 2340

**Term Offered:** Fall

## FILM 2310 Film I

[3 credit hours]

An intensive introduction to the theory and practice of creative filmmaking utilizing the professional 16mm format. Individual and group production exercises. Students must purchase supplies. Majors and minors only. Not to be taken simultaneously with FILM 2320. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring, Fall

## FILM 2320 Digital Cinema Production I - WAC

[3 credit hours]

An intensive seminar course where digital media is explored as a means for creative expression. Students purchase supplies. For majors and minors only, or by permission of instructor. Prerequisites: Comp I and Grade of C or better in FILM 2340. May not take simultaneously with FILM 2310. Writing Intensive (WAC) course.

**Prerequisites:** FILM 2340 with a minimum grade of C

**Term Offered:** Spring, Fall

## FILM 2330 Critical Approaches to Cinema

[3 credit hours]

A critical approach to the development of cinema as an industrial, artistic and ideological practice. Emphasis on theories of film construction and interpretation and the development of analytical skills for cinema studies. Screenings included in class.

**Term Offered:** Spring, Fall

## FILM 2350 Cinema History

[3 credit hours]

A study of the major movements and authors of Cinema History. Screenings included in class.

**Term Offered:** Spring, Summer

## FILM 2980 Cinema Studies Topic I

[3 credit hours]

Topics of Cinema Studies, concentrating on a specific style, genre, or national cinema, such as, Italian Cinema, Non-Western Cinema, etc. Topics vary. May be repeated for 9 hours.

## FILM 2990 Special Projects

[1-3 credit hours]

Individual study provides the student an opportunity to work independently on a problem of special interest in Film/Video under the direction of the faculty. For Freshman and Sophomore students.

## FILM 3200 Directing Screen Acting

[3 credit hours]

This studio course trains students to actively view a scene, assess the effectiveness of script, acting and directing, and discuss it critically. It identifies components of story, script and character - and how to build this with the cast. Focus is placed on characteristics required to play a role, successfully cast actors through auditions, and run an effective rehearsal. Lessons focus on production etiquette, communication, and techniques necessary to film a story.

**Prerequisites:** FILM 2340 with a minimum grade of D-

**Term Offered:** Fall

## FILM 3210 Film Theory

[3 credit hours]

Course in fundamental concepts in film theory. Examines the history of film theory and its ongoing development in the face of changes in production and consumption practices. Theories covered include classical narrative, psychoanalysis, semiotics, feminism, genre, reception studies, and globalization. This course is Writing Intensive and incorporates frequent writing assignments in ways that help students learn both the subject matter of the course and discipline-specific ways of thinking and writing.

**Prerequisites:** FILM 2340 with a minimum grade of C

## FILM 3310 Film II

[3 credit hours]

An intermediate production/seminar course for 16mm filmmaking. Emphasis on sync-sound and narrative film, advanced lighting and exposure techniques, and camera movement. Individual and group projects. Students are required to purchase supplies. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of C and FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

## FILM 3320 Video II

[3 credit hours]

A production/seminar course for digital cinema production. Conceptual frameworks rotate; emphasis on personal and political storytelling and exploring methods of the auteur. Individual and group projects. Students are required to purchase supplies. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2320 with a minimum grade of C and FILM 2310 with a minimum grade of C

**Term Offered:** Spring

**FILM 3330 Critical Approaches to Cinema II**

[3 credit hours]

Intermediate critical analysis of film, concentrating on a specific style, genre, national cinema of the West, or filmmaker. Emphasis on theories of film construction and interpretation. Screenings included in class. Topics vary, may be repeated to 9 hours.

**Prerequisites:** FILM 2340 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FILM 3340 Media Storycraft**

[3 credit hours]

This course focuses on narrative storytelling thru film and addresses these questions through the practice of screenwriting. Emphasis is placed on telling a story in terms of action and characters. Students will learn the fundamentals of screenwriting by developing their own original screenplay that follows a traditional dramatic structure. This process will include in-class workshops, analysis of films, and peer-reviews.

**Term Offered:** Spring

**FILM 3350 Screenwriting - WAC**

[3 credit hours]

This course involves practical analysis of screenplays, emphasizing story structure and characterization. Students plan, write and refine story lines before writing actual scripts.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or HON 1010 with a minimum grade of D- or HON 1020 with a minimum grade of D- or ENGL 1180 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FILM 3360 Production Topic**

[3 credit hours]

Topics in production including Animation, Sound, Lighting, Editing, etc. Individual and group projects. Students must purchase supplies. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of C or FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3370 Documentary Film**

[3 credit hours]

A study of the major movements and authors of Documentary Film. Screenings included in class.

**Prerequisites:** (ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-) and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**FILM 3380 Experimental Film**

[3 credit hours]

A study of the major movements and authors of Experimental Film. Screenings included in class.

**Prerequisites:** (ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-) and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3390 History of Video Art**

[3 credit hours]

A study of the major movements of the History of Video Art and Installation. Screenings included in class.

**Prerequisites:** ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D- or FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3410 European Cinema**

[3 credit hours]

A study of the major movements and authors of European cinema. Screenings included in class. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3420 Third Cinema**

[3 credit hours]

A study of the major movements and authors of Third World Cinema. Screenings included in class. Majors and minors only. Interested non-majors should seek instructor permission to enroll. FILM 2350 is recommended before taking this class for non-majors.

**Prerequisites:** FILM 2340 with a minimum grade of C and FILM 2350 with a minimum grade of C

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**FILM 3430 Global Cinema**

[3 credit hours]

A study of the major movements and authors of non-US cinema. Screenings included in class. Topics vary, may be repeated to 9 hours.

**Prerequisites:** FILM 2340 with a minimum grade of D- and ENGL 1130 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FILM 3510 Cinematography and Color Grading**

[3 credit hours]

A production/seminar course concentrating on how the language of the image is influenced by camera format fundamentals and color. In-class demonstrations and exercises, as well as outside of class workshops and individual production(s). Majors and minors only.

**Prerequisites:** FILM 2310 with a minimum grade of C and FILM 2320 with a minimum grade of C

**Term Offered:** Spring, Fall

**FILM 3530 Animation and Optical Printing**

[3 credit hours]

Intensive production/seminar course in the creation of animation and special effects for film and digital work. Hand-drawn, cut-out, stop-motion, pixilation and various optical effects are explored through in-class exercises and individual productions. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FILM 3550 Producing and Production Management**

[3 credit hours]

Inquiry into the financial, logistical, and organizational aspects of film and video production, focusing on the roles of the line producer, production manager, assistant director and their teams. No prerequisite.

**Term Offered:** Spring**FILM 3560 Methods for the Professional Editor**

[3 credit hours]

A production/seminar course that prepares students for professional practice in digital post-production methods and concepts. In-class exercises and individual production work done outside of class are required for the course. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2320 with a minimum grade of C**Term Offered:** Spring, Fall**FILM 3730 Directing for Camera**

[3 credit hours]

A production/seminar course focusing on directing dramatic scenes for camera with emphasis on effective director/actor communication and the creation of dramatically meaningful camera and actor blocking. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2310 with a minimum grade of C and FILM 2320 with a minimum grade of C**Term Offered:** Spring, Fall**FILM 3820 Documentary Field Production**

[3 credit hours]

Advanced production class focusing on the unique challenges of field production. Various types of documentary work are explored through field assignments relating to social and scientific subjects. This course includes local and regional production work as well as study abroad options.

**Prerequisites:** FILM 2310 with a minimum grade of D- and FILM 2320 with a minimum grade of D-**Term Offered:** Spring**FILM 3980 Cinema Studies Topic II**

[3 credit hours]

A non-historical approach to specific topics of cinema studies, concentrating on problems of film theory and individual research projects. Topics vary. (May be repeated to 12 hours.) Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C and FILM 2350 with a minimum grade of C**Term Offered:** Spring, Fall**FILM 4210 Film Censorship**

[3 credit hours]

Advanced cinema studies course focusing on the social, cultural, and political history of film censorship from early cinema through today. Covering early censorship questions, the Production Code Era, the Hollywood Ten, the shift toward the movie ratings system and the MPAA, and present-day concerns about film content.

**Prerequisites:** FILM 2340 with a minimum grade of D-**Term Offered:** Spring**FILM 4220 Media Studies**

[3 credit hours]

Covering issues concerned with film and media history, theory, and criticism and the interrelationship of film to television, radio, print, and/or the Internet. Particular focus of the course can change. Repeatable for credit.

**Prerequisites:** FILM 2340 with a minimum grade of C**Term Offered:** Spring, Fall**FILM 4230 Filmmakers**

[3 credit hours]

Theoretical and analytical examination of film authorship and its various forms, including directors, producers, and scriptwriters. Consideration is given to the cultural function of the designation of authorship and how this affects reception of films. Particular focus of the course can change. Repeatable for credit. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 2340 with a minimum grade of C**Term Offered:** Spring**FILM 4240 Genre Studies**

[3 credit hours]

Critical approaches to serial productions commonly called "genre" films. Consideration of how patterns of recognition form and are sustained in the modes of horror, melodrama, westerns, science fiction, musicals, and others. An emphasis on Hollywood genre production is facilitated by an analysis of cross-cultural influences and divergences. Particular focus of the course can change. Repeatable for credit.

**Prerequisites:** FILM 2340 with a minimum grade of C**Term Offered:** Spring, Fall**FILM 4310 Advanced Production**

[3 credit hours]

A production/seminar course focused on advanced production techniques. Emphasis on double system/sync-sound recording skills, advanced lighting instrument use, and the creative relationships between camera and editing language. Individual and group project work is required as is students purchasing supplies for their final projects. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 3510 with a minimum grade of D- and FILM 3560 with a minimum grade of D-**Term Offered:** Spring**FILM 4320 Film/Video Workshop**

[3 credit hours]

A production/seminar course for advanced independent production projects, including screenwriting. Regular critiques of work in progress. Requires proposal for admission. Larger projects may be completed over successive semesters. May be repeated up to 6 hours. Majors and minors only. Interested non-majors should seek instructor permission to enroll.

**Prerequisites:** FILM 3310 with a minimum grade of D- or FILM 3320 with a minimum grade of D- or FILM 3350 with a minimum grade of D- or FILM 3360 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall

**FILM 4330 Critical Approaches to Cinema III**

[3 credit hours]

Advanced critical analysis of film, concentrating on a specific style, genre, national cinema of the West, or filmmaker. Emphasis on theories of film construction and interpretation. Screenings included in class. Topics vary, may be repeated to 9 hours.

**Prerequisites:** FILM 3340 with a minimum grade of D-

**Term Offered:** Fall

**FILM 4340 Topics In Feminist Cinema Studies**

[3 credit hours]

Crosslistings of film classes with the Department of Women's and Gender Studies. Specific topics vary. Check Course Schedule for specific subject and prerequisites.

**Term Offered:** Fall

**FILM 4350 Screenwriting II**

[3 credit hours]

For students familiar with the fundamental elements of screenplays, this course devotes attention to writing a complete script. Students are expected to come to the class with a planned story line.

**Prerequisites:** FILM 3350 with a minimum grade of C or ENGL 3060 with a minimum grade of C

**Term Offered:** Spring

**FILM 4360 Le Cinema Francais**

[3 credit hours]

A study of the development of French film and its place in world cinema.

**Term Offered:** Spring, Fall

**FILM 4370 Cinema Studies Seminar**

[3 credit hours]

A research oriented seminar concerning a specific topic of cinema studies, emphasizing original research culminating in individual research and/or writing project.

**Prerequisites:** (ENGL 1130 with a minimum grade of D- or ENGL 1140 with a minimum grade of D- or ENGL 1150 with a minimum grade of D- or ENGL 2950 with a minimum grade of D- or ENGL 2960 with a minimum grade of D-) and FILM 2350 with a minimum grade of C

**Term Offered:** Fall

**FILM 4940 Internship**

[3 credit hours]

Internship with an approved program, company, or agency in Film. Video or television. (repeatable for 6 credit hours)

**Term Offered:** Spring, Summer, Fall

**FILM 4950 Honors Thesis**

[3 credit hours]

Research or a creative project on a topic in Film or Video. Required of all BA candidates seeking department honors. (Repeatable for 6 credit hours.)

**Term Offered:** Spring, Summer, Fall

**FILM 4990 Special Projects**

[1-3 credit hours]

Individual study provides the student an opportunity to work independently on a problem of special interest in Film/Video under the direction of the faculty. For Junior and senior students.

**Term Offered:** Spring, Summer, Fall



# FINANCE (FINA)

## FINA 2000 Personal Investing

[3 credit hours]

This course features a real time stock market simulation. Students will be able to trade securities and track their performance throughout the semester. Learn about different types of investments including: stocks, bonds, mutual funds, real estate, options, and futures. Not applicable toward finance major.

**Term Offered:** Spring, Summer, Fall

## FINA 3060 Personal Finance

[3 credit hours]

This course covers the fundamentals of personal finance and will help you make informed decisions in your financial future. Topics included: how to manage credit, planning for retirement, mortgages and home ownership, understanding life insurance, types of mutual funds, personal taxation principles, how loans work, and estate planning. Not applicable toward finance major.

**Term Offered:** Spring, Summer, Fall

## FINA 3480 Investments

[3 credit hours]

This course introduces history of risk-returns trade-off, investment process, different investment securities and financial markets in which financial assets traded. In addition, modern portfolio theory, risk-return trade-off, and performance evaluation are explained in detail.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## FINA 3500 International Business Finance

[3 credit hours]

Examines the role of a financial manager in international transactions. The international environment and the role of international asset markets are emphasized.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## FINA 3600 Risk Management

[3 credit hours]

Investigates non-speculative risks and the methods used to deal with them. Emphasizes on the insurance mechanism. Explores the functional aspect of the insurance operations.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Summer, Fall

## FINA 3610 Life And Health Insurance

[3 credit hours]

Combines a discussion of the economic aspects of life and health insurance with basic analysis on life insurance, health and annuity contracts. Includes investigation of major functional aspects.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Fall

## FINA 3660 Real Estate Principles, Practices And Finance

[3 credit hours]

A basic discussion in real estate economics, valuation theory, transfer procedures, legal characteristics, brokerage, taxation and financing techniques. Emphasis on residential properties. A term project is required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Fall

## FINA 3670 Real Estate Valuation

[3 credit hours]

Methodology of appraising large and small commercial real properties and the theory underlying appraisal techniques and valuation. A term project is required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring

## FINA 3680 Real Estate Law, Insurance And Taxes

[3 credit hours]

An integrative analysis of real estate, insurance, taxes and legislation as they impact commercial real estate ownership returns and risk. A term project is required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Fall

## FINA 3890 Financial Modeling with Excel

[3 credit hours]

This course help students develop spreadsheet modeling skills necessary to evaluate common financial problems encountered. The course provides hands-on experience in obtaining financial data and using Excel to manipulate and analyze data for a wide variety of subjects in finance.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Fall

## FINA 4080 Intermediate Financial Management

[3 credit hours]

This course explores corporate financial decision making in depth. Topics include financial statement analysis, financial planning, capital budgeting, working capital management, and capital structure.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## FINA 4090 Financial Markets And Institutions

[3 credit hours]

The course explores operations and functions of financial markets and institutions. The emphasize is on the interest rate theory, the role of the Federal Reserve System and the government in establishing monetary policy and providing regulation, management of institutions, and internationalization.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## FINA 4100 Security Analysis & Portfolio Management

[3 credit hours]

Emphasizes the importance of portfolio management techniques and evaluation. Techniques of financial statement analysis, economic analysis, industry analysis, theoretical issues of efficient markets, technical analysis and fundamental analysis.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4200 Fixed Income Securities**

[3 credit hours]

This course explores the fixed income securities markets, institutions, and instruments. We will analyze the pricing, risks, and risk management of fixed income securities.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring

**FINA 4340 Derivatives Securities and Markets**

[3 credit hours]

This course explores the derivative securities markets and instruments. It covers the valuation, risks, and risk management aspect of derivative securities.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4480 Student Managed Portfolio Practicum**

[1-3 credit hours]

Course provides selected students active portfolio management training utilizing an endowed portfolio. Student Portfolio Managers apply equity selection analysis and portfolio risk analytics, with fiduciary responsibilities.

**Prerequisites:** FINA 3480 with a minimum grade of C

**Term Offered:** Spring, Fall

**FINA 4670 Advanced Financial Management**

[3 credit hours]

Applies financial analysis techniques to real-world problems using computer simulations and case studies. Topics include capital budgeting, working capital management, cost of capital, capital structure, leasing, valuation of levered firms, and options.

**Prerequisites:** FINA 3480 with a minimum grade of D- and FINA 4080 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FINA 4840 Small Business Financial Policies And Practices**

[3 credit hours]

Financial management and planning in small and medium-sized firms. Course focuses on the financial analysis and management of their problems, policies, practices and funding requirements.

**Prerequisites:** BUAD 3040 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**FINA 4870 Advanced Financial Institutions & Markets**

[3 credit hours]

Seminar focusing on current issues in financial institutions and services management.

**FINA 4880 Real Estate Property Management**

[3 credit hours]

Methodology of managing large and small commercial properties and buildings to maximize current earnings, earnings potential and asset value for the property owners.

**Prerequisites:** (BUAD 3040 with a minimum grade of D- and FINA 3670 with a minimum grade of D- and FINA 3680 with a minimum grade of D-)

**FINA 4890 Financial And Estate Planning**

[3 credit hours]

Nature and methods of Financial planning. Creation, conservation and distribution of estates. Emphasis is on investments, insurance wills, trusts and tax laws.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring

**FINA 4900 Seminar In Finance**

[3 credit hours]

Seminar course in advanced and specialized topics. Current readings from finance journals. Written paper required.

**Prerequisites:** (FINA 3480 with a minimum grade of D- and FINA 4080 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**FINA 4940 Finance Internship**

[1-3 credit hours]

This course explores special topics in the field of finance in detail. Topics varies and chosen as need required.

**Prerequisites:** BUAD 3040 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**FINA 4990 Independent Study: Readings And Research In Finance**

[1-3 credit hours]

An independent, professor supervised, course dealing with an in depth investigation of a financial area not covered adequately in another listed course.

**Prerequisites:** (FINA 3480 with a minimum grade of D- and FINA 4080 with a minimum grade of D- and FINA 4090 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

# FOREIGN LANGUAGE (FLAN)

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**FLAN 1970 Special Topics**

[4 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall

**FLAN 1980 Special Topics**

[4 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall

**FLAN 2970 Special Topics**

[3 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall

**FLAN 2980 Special Topics**

[3 credit hours]

Special topics which vary semester to semester. Course may be repeated when topic varies.

**Term Offered:** Spring, Fall

**FLAN 3440 Intercultural Communication: Principles And Practice**

[4 credit hours]

This course offers a survey of major concepts in intercultural communication. It emphasizes a balance between theoretical and practical learning opportunities and seeks to promote intercultural understanding.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**FLAN 3980 Special Topics in Foreign Languages**

[0-6 credit hours]

Study of a selected topic in language, literature, or culture.

**Term Offered:** Spring, Summer, Fall

**FLAN 4940 Internship in Foreign Languages**

[0-12 credit hours]

Educational work experience in a pre-approved professional field.

**Term Offered:** Spring, Fall

**FLAN 4980 Special topics in Foreign Languages**

[0-6 credit hours]

Study of a selected topic in foreign languages. May be repeated when topic varies.

**FLAN 4990 Independent Study in World Languages and Cultures**

[3 credit hours]

Independent study of a selected topic in foreign languages, developed in consultation with a faculty member. 3 hours. May be repeated with a different topic.

**Term Offered:** Spring, Summer, Fall

# FRENCH (FREN)

## FREN 1080 Culture And Commerce In The French-Speaking World

[3 credit hours]

A study of the French-speaking world with emphasis on the relationship between its culture and its business and economic institutions and practices. Taught in English. (Not for major credit.)

**Term Offered:** Fall

Core Arts & Humanities

## FREN 1090 French & Francophone Culture In The Modern World

[3 credit hours]

This course focuses on modern French and Francophone culture and their historical and geographical sources. Taught in English. (Not for major credit.)

**Term Offered:** Spring

Core Arts & Humanities

## FREN 1110 Elementary French I

[4 credit hours]

A comprehensive introductory course in French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Term Offered:** Spring, Fall

## FREN 1120 Elementary French II

[4 credit hours]

A comprehensive introductory course in French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** FREN 1110 with a minimum grade of D- or French Language Placement with a score of 1120

**Term Offered:** Spring, Fall

Core Arts & Humanities

## FREN 1500 Review Of Elementary French

[4 credit hours]

Review of first-year college French for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (not for major credit)

## FREN 2140 Intermediate French I

[3 credit hours]

Review and further development of command of the French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** FREN 1120 with a minimum grade of D- or FREN 1500 with a minimum grade of D- or French Language Placement with a score of 2140

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## FREN 2150 Intermediate French II

[3 credit hours]

Further review and development of command of the French language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** FREN 2140 with a minimum grade of D- or French Language Placement with a score of 2150

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## FREN 2190 Study Abroad

[1-3 credit hours]

This course is designed to permit and encourage non-majors to spend time in a country where French is spoken. Credit granted in accordance with established departmental procedures. (Not for major credit.)

**Prerequisites:** FREN 2150 with a minimum grade of D-

## FREN 3010 Conversation And Composition I

[3 credit hours]

Idiomatic conversation practice, dictation and pronunciation drill as well as development of practical writing skills.

**Prerequisites:** FREN 2150 with a minimum grade of D- or French Language Placement with a score of 3000

**Term Offered:** Fall

## FREN 3020 Conversation And Composition II

[3 credit hours]

Further aural/oral development with emphasis on the mechanics of writing in French and the organization of ideas. A writing-intensive course.

**Prerequisites:** FREN 3010 with a minimum grade of D-

**Term Offered:** Spring

## FREN 3170 Business French

[3 credit hours]

An introduction to the language of the French-speaking world, with emphasis on business and commerce.

**Prerequisites:** FREN 2150 with a minimum grade of D-

## FREN 3210 Survey Of French Literature I

[3 credit hours]

French literature from its origins through the eighteenth century.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Fall

## FREN 3220 Survey Of French Literature II

[3 credit hours]

French and Francophone literature from the 19th and 20th centuries.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Spring

## FREN 3400 Cross-Cultural Understanding

[3 credit hours]

An examination of the notions of culture, multiculturalism and Francophone cultures. Course content emphasizes issues of race, class and gender in U.S. and Francophone contexts.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**FREN 3410 Survey Of French Civilization I**

[3 credit hours]

A study of the many ways in which France has contributed to world culture through architecture, painting, sculpture, music, literature, folklore, science, philosophy and education.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FREN 3420 Survey Of French And Francophone Civilization II**

[3 credit hours]

An introductory study of selected sociological, political, cultural and economic issues of contemporary France and Francophone areas.

**Prerequisites:** FREN 2150 with a minimum grade of D-

**Term Offered:** Spring

**FREN 3980 Special Topics in French Studies**

[0-6 credit hours]

Study of a selected topic in French language, literature or culture. May be repeated when topic varies.

**Term Offered:** Spring

**FREN 4010 French Syntax And Stylistics I**

[3 credit hours]

A thorough study of syntax, morphology, phonetic principles and grammatical structure of French. Emphasizes various writing activities and styles.

**Prerequisites:** FREN 3020 with a minimum grade of D-

**Term Offered:** Fall

**FREN 4020 French Syntax And Stylistics II**

[4 credit hours]

Emphasizes various writing activities and styles. Includes a research component and basic literary criticism as well as a review of syntax and grammar. A writing-intensive and capstone course.

**Prerequisites:** FREN 4010 with a minimum grade of D-

**Term Offered:** Spring

**FREN 4050 Advanced Conversation**

[3 credit hours]

Advanced practice in speaking idiomatic French. Special attention to problems of pronunciation and oral proficiency.

**Prerequisites:** FREN 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

**FREN 4070 French Translation**

[3 credit hours]

Practice in translation of texts from French into English and English into French. Subject matter area will include commerce, natural, physical, and social sciences and the humanities.

**FREN 4160 Teaching Colloquium**

[3 credit hours]

A course in the theory and practice of teaching French and of second language acquisition in general.

**Term Offered:** Fall

**FREN 4190 Study Abroad**

[1-12 credit hours]

Designed to permit and encourage the French major to pursue study in a country where French is spoken. Credit granted in accordance with established departmental procedures.

**Prerequisites:** FREN 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer

**FREN 4200 Contemporary French And Francophone Civilization**

[3 credit hours]

A study of contemporary France and/or Francophone cultures including discussion of economics, daily life, the family, social groups, industry, politics and education.

**Term Offered:** Spring

**FREN 4810 French & Francophone Literature Of The 20th Century I**

[3 credit hours]

Literature of all genres from the period before World War I to the present.

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**Term Offered:** Spring

**FREN 4820 French & Francophone Literature Of The 20th Century II**

[3 credit hours]

Literature of all genres from the period before World War I to the present.

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**FREN 4850 Le Cinema Francais**

[3 credit hours]

A study of the development of French film and its place in world cinema.

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**FREN 4860 La Production Feminine**

[3 credit hours]

A study of texts produced by women in the French language in various fields (for example, literary theory, film, literature, philosophy, psychoanalysis, semiotics, post-colonial theory).

**Prerequisites:** (FREN 3210 with a minimum grade of D- and FREN 3220 with a minimum grade of D-)

**FREN 4910 Honors Research In French**

[3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**FREN 4940 Internship in French**

[0-12 credit hours]

Educational work experience, using French, in a pre-approved professional field.

**FREN 4980 Special Topics In French Studies**

[1-3 credit hours]

Study of a selected topic in French or Francophone language, literature, or culture. May be repeated when topic varies.

**Term Offered:** Spring, Summer, Fall

**FREN 4990 Independent Study In French**

[1-3 credit hours]

Independent research in special topics. May be repeated once for additional credit.



# GENERAL ENGINEERING (GNEN)

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## **GNEN 1000 Introduction to Engineering**

[3 credit hours]

A course designed to explore the various disciplines of engineering in historical, present, and future context while incorporating basic design principles in an interdisciplinary model.

**Term Offered:** Spring, Fall

## **GNEN 1010 Professional Development**

[1 credit hour]

In this course students will gain a better understanding of the professional and ethical responsibilities of an engineer and the impact of engineering solutions in a global/societal context. In addition, they will explore career opportunities available to engineers. They will develop a better understanding of the importance of effective communication, presentation, and team collaboration skills in securing employment and in being successful in the workplace as well as the importance of professional registration and life-long learning.

**Term Offered:** Spring

## **GNEN 1500 Sustainability Living**

[3 credit hours]

Sustainable Living explores the sustainability of our lifestyle choices. Core sustainability principles and the importance of assessment to evaluate options are introduced. These guiding foundational concepts are used to evaluate the sustainability of our consumption of water, energy, and goods as well as how to improve the quality of life for the world's population without comprising ethical standards. Students will be challenged to adopt and assess the effect of a lifestyle on their consumption.

## **GNEN 1800 Engineering Applications of Mathematics**

[3 credit hours]

Solution of engineering applications using mathematical concepts ranging from algebra to differential equations. Examples from the first two years of engineering coursework are solved in class and explored in corresponding laboratory experiments. The objective of this course is to provide an engineering context for subsequent courses in mathematics. Intended for students prior to Calculus.

**Term Offered:** Fall

# GEOGRAPHY AND PLANNING (GEPL)

## GEPL 1010 Human Geography

[3 credit hours]

This course provides an overview of the geographic dimensions of human diversity with an emphasis on understanding the uneven distribution of people and resources in the context of globalization. It is a systematic treatment of the major concepts of human geography and their application to modern problems, population, migration, cultural patterns and processes, political organization of space, agricultural and rural land use, industrialization and economic development, and urban land use. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## GEPL 1100 Environmental Geography

[3 credit hours]

While gaining a fundamental understanding of the world's physical environment, students explore the processes and spatial distributions of anthropological changes to the world's lands, freshwater, biota, oceans and atmosphere. Current issues such as global warming, acid rain, ozone depletion, deforestation and desertification are addressed.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## GEPL 2010 Fundamentals Of Geography

[3 credit hours]

An introduction to basic geographic concepts of both physical and human geography, with emphasis on the interrelationships of people with their physical and cultural environments.

**Term Offered:** Spring

## GEPL 2030 Cultural Geography

[3 credit hours]

A learning-through-writing course. Systematic applications of the concepts of culture and cultural diversity to geographical themes and case studies.

**Term Offered:** Spring

Multicultural Non-US Diversity

## GEPL 2040 World Regional Geography

[3 credit hours]

The course explores the spatial distribution at various geographical scales, local, regional, national, and global, of urban, cultural, economic and demographic phenomena in several contrasting regions of the world.

**Term Offered:** Spring, Fall

## GEPL 2050 World Cities

[3 credit hours]

This course discusses the physical, cultural, socio-economic aspects of the mega cities of the world - the World Cities. It examines the causes and stages of growth and the decline of cities.

**Term Offered:** Spring, Fall

## GEPL 2110 Maps and Map Analysis

[3 credit hours]

This course provides an overview of the appropriate use of maps, a basic tool of analysis in geography and planning. Topics will include map scale and map projections, types of maps and their particular uses, elements of map design, effective communication with maps, special requirements of spatial data, and the fundamentals of spatial analysis using maps.

The focus is on the use of maps as tools for spatial analysis and not the production of maps.

**Prerequisites:** GEPL 2010 with a minimum grade of D-

**Term Offered:** Fall

## GEPL 3030 Geography Of Europe

[3 credit hours]

An introduction to the geography of Europe with an emphasis on boundaries, economic development, integration, identity, nationalism, and regional differences. The course includes an examination of how Europe has been defined and what it means to be European in both historical and contemporary contexts. It provides a critical perspective on the geography of Europe as it is impacted by local, regional, and global forces.

**Term Offered:** Spring

## GEPL 3050 Geography Of U.s. And Canada

[3 credit hours]

Systematic and regional survey of physical, social and economic geography of the region. Emphasis on the region with respect to worldwide/continental problems and prospects in economic development, management of resources and population adjustment.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## GEPL 3120 Geography Of Asia

[3 credit hours]

Compares and contrasts physical and human aspects of Asian countries and peoples in relation to economic development.

**Term Offered:** Spring

Multicultural Non-US Diversity

## GEPL 3220 Geography Of Africa

[3 credit hours]

Course begins with a general overview of Africa's physical environment, its colonial history and its people and cultures. It then examines a variety of themes associated with development, population, urban and political geography.

**Term Offered:** Fall

Multicultural Non-US Diversity

## GEPL 3300 Geography of Latin America and the Caribbean

[3 credit hours]

This course explores one of the world's most vibrant regions, Latin America. This world region stretches across diverse landscapes, from tropical rainforests to the snowcapped peaks of the Andes, from mega-cities to empty deserts and plains. The diversity of environments fosters great cultural diversity, despite sharing similar historical roots. This course explores the geography of Latin America through a combination of thematic and regional approaches.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**GEPL 3440 Population Geography**

[3 credit hours]

A learning through writing course. Space and place facets of population size, growth, migration, distribution and composition with emphasis on the population trends and patterns in both developing and developed nations.

**GEPL 3610 Conservation And Resources**

[3 credit hours]

A timely examination of some basic philosophies, principles and ethical issues in conservation and resource discourses in geography and across the disciplines. Provocative case studies. A learning-through-writing (WAC) course.

**Term Offered:** Spring**GEPL 3650 Industrial Geography**

[3 credit hours]

An introduction to industrial geography; including industrial location theory, competing production systems, and shifts from manufacturing to service-based economies.

**Term Offered:** Spring, Fall**GEPL 3900 Environmental Planning**

[3 credit hours]

Study of how humans are impacting the health and sustainability of the earth by their actions and activities and means by which we can reduce the impacts by better planning and management of human uses. Topics include water resources, forests, natural hazards, and the Great Lakes, through conservation, protected areas, better use of science, stewardship, cooperation and community actions. Will include use of local examples and case studies drawn from Ohio and the US.

**Term Offered:** Spring, Fall**GEPL 4040 Geography Education Strategies**

[3 credit hours]

Use of geographic inquiry in the emerging integrated social studies and standard geography education curricula for K-12 instruction.

**Term Offered:** Fall**GEPL 4110 Geographic Information Systems**

[3 credit hours]

Introduction to computerized methods for the capture, storage, management, analysis and display of spatially-referenced data for the solution of planning, management and research problems.

**Term Offered:** Spring, Fall**GEPL 4160 Patterns Of World Development**

[3 credit hours]

An examination of contemporary global economic patterns and trends. Compares and contrasts population problems; the diffusion of multinational corporations, and the emergence of post-industrial economies.

**Term Offered:** Fall**GEPL 4180 Geographic Information Systems Applications**

[3 credit hours]

Advanced applications in geographic information systems (GIS) with an emphasis on advanced GIS analysis techniques, Global Positioning System applications in GIS, database design, and a survey of vector- and raster-based GIS software and databases.

**Prerequisites:** GEPL 4110 with a minimum grade of D-**Term Offered:** Spring**GEPL 4210 Land Use Planning**

[3 credit hours]

A broad review of urban and regional planning in the US and Western Europe, introducing land use planning concepts and practices and their role in shaping the direction of urban development.

**Term Offered:** Spring**GEPL 4310 Geography Of Gypsies (Romanies) and Travelers - WAC**

[3 credit hours]

Explorations into identities and distributions of Gypsies (Romanies) and Travelers (GR&T peoples) worldwide and the challenges that their study presents to Geography and to other social science disciplines.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**GEPL 4420 Quantitative Methods in Geographic Research**

[3 credit hours]

An examination of quantitative methods commonly used in geographic research with an emphasis on spatial statistics and cartographic analysis.

**Term Offered:** Fall**GEPL 4490 Remote Sensing Of The Environment**

[4 credit hours]

Introduction to theory, methods and techniques used to gather and analyze remote sensor data. Topics range from low altitude air photo interpretation through satellite image acquisition. Recommended: GEPL 3550.

**Term Offered:** Fall**GEPL 4500 Digital Image Analysis**

[3 credit hours]

Using imagery captured by earth orbiting satellites, students will document changes on the surface of the earth addressing environmental issues. Students will have the opportunity to learn applications of this technology including project based work in the classroom.

**Prerequisites:** GEPL 4490 with a minimum grade of D- and EEES 4490 with a minimum grade of D-**Term Offered:** Spring**GEPL 4520 Analytical And Computer Cartography**

[4 credit hours]

The theoretical and mathematical foundations of the mapping process in a digital environment. An introduction to the structure and manipulation of graphic and nongraphic geographical data to produce maps.

**Prerequisites:** GEPL 4510 with a minimum grade of D- or GEPL 4110 with a minimum grade of D-**Term Offered:** Spring**GEPL 4530 Principles Of Urban Planning**

[3 credit hours]

An introduction to planning theory. the planner's role in land use regulation economic development, housing and social service delivery is reviewed.

**Term Offered:** Fall**GEPL 4540 Weather And Climate**

[3 credit hours]

A survey analysis of meteorology and climatology. The physical processes of weather and the pattern of climate provide the basis for this course.

**Term Offered:** Summer, Fall

**GEPL 4570 Land Development And Planning**

[4 credit hours]

The exploration of theoretical location analysis, pragmatic land development issues and analytic feasibility tools, and the consequences of land use policies that affect development.

**Term Offered:** Spring**GEPL 4580 Location Analysis**

[4 credit hours]

The application of geographic location theory, spatial interaction modeling, optimization techniques and geographic information system processing to the solution of facility location problems.

**Term Offered:** Spring**GEPL 4600 Urban Design**

[3 credit hours]

Concepts and procedures for the organization, design and development of public and private urban forms and spaces at the micro level, including a survey of intraurban elements, cultural, ecological and aesthetic considerations, and interdisciplinary collaboration.

**Term Offered:** Fall**GEPL 4650 Physical Geography**

[3 credit hours]

Using an Earth System Science approach linking the hydrosphere, biosphere, atmosphere, and lithosphere, students will explore the relationship and spatial characteristics of events such as hurricane landfall, volcanic eruptions and climate change.

**Term Offered:** Spring**GEPL 4700 Community Planning Workshop**

[3 credit hours]

This course introduces the skills and techniques used by urban & regional planning practitioners in every-day planning process in real world. Students work on a local, regional or state planning issue that is important to the social, economic, spatial, and environmental development in Toledo, its surrounding regions, or the state of Ohio. Projects focus on communicating with local planning agencies, advisory organizations, and consulting firms for data collection. Students then analyze the data and prepare a planning document.

**Term Offered:** Spring**GEPL 4710 Urban Environments**

[3 credit hours]

Geographic perspectives on the social, political and economic functions of cities. Issues of land use, redevelopment, residential and commercial geographies are examined in contemporary North American cities.

**Term Offered:** Spring, Fall**GEPL 4750 Transportation Geography**

[3 credit hours]

This course introduces students to the culture of transportation planning while honing their critical reading and analytical skills. The approach combines two types of analysis. One is a historical political-economy treatment of the evolution of the transportation systems, including the evolution of associated institutions, concluding with contemporary transportation planning issues. The other type of analysis is an introduction to the rational method for determining appropriate public responses for dealing with current transportation planning issues.

**Term Offered:** Spring, Fall**GEPL 4810 Political Geography**

[3 credit hours]

An examination of political actors and power relations at local, regional, national and global scales, and their impact on spaces and places. The course includes topics, such as state formation, electoral geography, identity and social movements, nationalism and regionalism, imperialism and post-colonialism, urban politics, feminist political geography, elites and marginalized individuals, and geopolitics.

**Term Offered:** Spring, Fall**GEPL 4900 Proseminar in Geography**

[3 credit hours]

**GEPL 4910 Research in Geography**

[1-4 credit hours]

**GEPL 4920 Readings in Geography**

[1-3 credit hours]

**GEPL 4960 Honors Thesis in Geography**

[4 credit hours]

**GEPL 4990 Geography and Planning as Disciplines and Professions**

[1 credit hour]

This course provides an overview and synthesis of geography and planning as academic disciplines and as professions. The course proceeds along two tracks. In the first, students will read and discuss some of the classic literature that attempts to define both fields. In the second, students will learn about career resources for geographers and planners and learn to present themselves as professionals in the fields.

**Prerequisites:** GEPL 2010 with a minimum grade of D-

# GERMAN (GERM)

## GERM 1080 German Culture And Commerce

[3 credit hours]

Study of German culture and society with emphasis on business and economics. Taught in English. (Not for major credit.)

**Term Offered:** Fall

Core Arts & Humanities

## GERM 1090 Introduction To Modern German Culture

[3 credit hours]

An introduction to principal social, artistic and literary aspects of modern German culture. Taught in English. (Not for major credit.)

**Term Offered:** Spring, Fall

Core Arts & Humanities

## GERM 1110 Elementary German I

[4 credit hours]

An introduction to German language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Term Offered:** Spring, Fall

## GERM 1120 Elementary German II

[4 credit hours]

An introduction to German language and culture through listening, speaking, reading and writing. Laboratory practice required.

**Prerequisites:** GERM 1110 with a minimum grade of D- or German Language Placement with a score of 1120

**Term Offered:** Spring, Fall

Core Arts & Humanities

## GERM 1500 Review Of Elementary German

[4 credit hours]

Review of first-year college German for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (not for major credit)

## GERM 2140 Intermediate German I

[3 credit hours]

Practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

**Prerequisites:** GERM 1120 with a minimum grade of D- or GERM 1500 with a minimum grade of D- or German Language Placement with a score of 2140

**Term Offered:** Spring, Fall

Core Arts & Humanities

## GERM 2150 Intermediate German II

[3 credit hours]

Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (Not for major credit)

**Prerequisites:** GERM 2140 with a minimum grade of D- or German Language Placement with a score of 2150

**Term Offered:** Spring, Fall

Core Arts & Humanities

## GERM 2190 Study Abroad

[1-3 credit hours]

The course permits beginning students of German to study or work in a country where German is spoken. Credit will be awarded in accordance with established departmental procedures. (Not for major credit.)

**Prerequisites:** GERM 2150 with a minimum grade of D-

## GERM 2980 Special Topics in German Studies

[0-6 credit hours]

Study of a selected topic in German language, literature or culture. May be repeated when topic varies.

## GERM 3010 Conversation And Composition I

[3 credit hours]

Work on advanced listening, speaking, reading and writing skills through intensive work with authentic texts that deal with contemporary issues relating to the German-speaking world.

**Prerequisites:** GERM 2150 with a minimum grade of D- or German Language Placement with a score of 3000

**Term Offered:** Fall

## GERM 3020 Conversation And Composition II

[3 credit hours]

Work on advanced speaking, listening, reading and writing skills through intensive work with authentic texts that deal with contemporary issues relating to the German-speaking world. A writing-intensive course.

**Prerequisites:** GERM 3010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## GERM 3170 Business German

[3 credit hours]

An introduction to the language and practices of German business and commerce.

**Prerequisites:** GERM 2150 with a minimum grade of D-

## GERM 3180 Scientific And Technical German

[3 credit hours]

An introduction to and the practical application of scientific and technical German language in the German-speaking world. Course is conducted in German.

**Prerequisites:** GERM 2150 with a minimum grade of D-

## GERM 3200 Survey Of German Literature

[3 credit hours]

A survey of German literature from its origins to the present, with emphasis on literature after 1750.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

## GERM 3410 Survey Of German Civilization I

[3 credit hours]

A study of different aspects of German culture and civilization such as fine arts, history, science and philosophy.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall

## GERM 3420 Survey Of German Civilization II

[3 credit hours]

A study of different aspects of German culture and civilization such as fine arts, history, science and philosophy.

**Prerequisites:** GERM 2150 with a minimum grade of D-

**Term Offered:** Spring, Fall



**GERM 3980 Special Topics in German Studies**

[0-6 credit hours]

Study of a selected topic in German language, literature, or culture. May be repeated for credit when topic varies.

**GERM 4010 German Syntax And Stylistics I**

[3 credit hours]

Refinement of conversation and composition skills through the analysis of texts and written and oral exercises.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**Term Offered:** Summer, Fall

**GERM 4020 Advanced Conversation And Composition II - WAC**

[4 credit hours]

A practical application of language skills in the preparation of a German-related project chosen, developed and presented by the student. A writing-intensive and capstone course.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer

**GERM 4160 Teaching Colloquium**

[3 credit hours]

A course in the theory and practice of teaching German and of second language acquisition in general.

**Term Offered:** Fall

**GERM 4190 Study Abroad**

[1-12 credit hours]

The course permits the German major or minor to study or work in a country where German is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**GERM 4200 German Culture And Civilization**

[3 credit hours]

Study of major trends and current developments in German Landeskunde. May be repeated when topic varies.

**GERM 4620 German Classicism**

[3 credit hours]

Study of Classical writers of Germany: Goethe, Schiller and their contemporaries.

**Term Offered:** Spring

**GERM 4710 German Literature Of The 19th Century**

[3 credit hours]

Study of selected works by authors from Büchner to Fontane.

**Term Offered:** Spring

**GERM 4720 German Romanticism**

[3 credit hours]

Study of Romantic writers of Germany such as Novalis, Eichendorff, E.T.A. Hoffmann and Bettina Brentano.

**GERM 4810 German Literature Of The 20th Century**

[3 credit hours]

Study of selected works by authors from the turn of the century to the present.

**Term Offered:** Spring, Fall

**GERM 4850 Genre Studies**

[3 credit hours]

Study of a selected literary or film genre, its development, and its influence on German culture. May be repeated for credit when topic varies.

**Term Offered:** Spring, Fall

**GERM 4870 German Literature In Translation**

[3 credit hours]

In-depth study of selected works of German literature in English translation. (Not for major credit).

**Term Offered:** Spring, Fall

**GERM 4900 Studies In The Works Of An Author Or Authors**

[1-3 credit hours]

Readings of the works of a major author or authors of German literature. May be repeated when topic varies.

**Term Offered:** Spring

**GERM 4910 Honors Research In German**

[3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**Term Offered:** Spring

**GERM 4940 Internship in German**

[1-12 credit hours]

Educational work experience, using the German language. Maximum of 3 hours may be applied to the German major or minor program.

**Prerequisites:** GERM 3020 with a minimum grade of D-

**Term Offered:** Fall

**GERM 4980 Special Topics In German Studies**

[1-3 credit hours]

Study of a selected topic in German language, literature, or culture. May be repeated for credit when topic varies.

**Term Offered:** Spring, Summer, Fall

**GERM 4990 Independent Study In German**

[1-3 credit hours]

Independent research in special topics. May be repeated once for additional credit.

**Term Offered:** Spring, Fall

# GIFTED AND TALENTED EDUCATION (GIFT)

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## **GIFT 4100 Educating Young Talented And Gifted Children**

[3 credit hours]

Examination of major topics about the development of talents and gifts with an emphasis on developmentally appropriate practices with young children.

**Prerequisites:** CIEC 3200 with a minimum grade of D- and CIEC 4340 with a minimum grade of D-

**Term Offered:** Spring, Fall

# GLOBAL STUDIES (GLST)

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**GLST 2000 Principles Of Global Studies**

[3 credit hours]

A multidisciplinary exploration of the world. Global processes will be examined using many viewpoints, such as culture, politics, economics, geography and philosophy.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

**GLST 2980 Topics In Global Studies**

[3 credit hours]

An exploration of a specific global issue. Approaches will be explicitly multidisciplinary and will make use of a variety of perspectives. May be repeated for credit.

**GLST 4900 Senior Seminar In Global Studies**

[3 credit hours]

Theories and research methods in global studies will be examined. A major component of the course will be a research project on some aspect of global studies.

**Prerequisites:** GLST 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer

**GLST 4960 Honors Thesis In Global Studies**

[3 credit hours]

Supervised research and writing for honors students only. May be taken twice for credit.

**Prerequisites:** GLST 2000 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**GLST 4980 Advanced Topics In Global Studies**

[3 credit hours]

An advanced multidisciplinary exploration of a specific issue in global studies. May be repeated for credit.

**Term Offered:** Fall

# HEALTH AND HUMAN SERVICES (HHS)

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## **HHS 1000 Health And Human Services/College Orientation**

[1 credit hour]

Acquaints the new student with the services, policies, procedures and layout of the university, college and department. Establishes relationships between new students, full-time professors and peer mentors during this time of adjustment. Must be taken first semester of enrollment.

**Term Offered:** Fall

## **HHS 2500 Data Science I**

[3 credit hours]

Introduction to data science concepts, computer programming to transform raw information in to structured data and analysis of data to answer questions using popular programming and analytic software packages.

**Term Offered:** Spring, Fall

## **HHS 2980 Special Topics In Health & Human Services**

[1-3 credit hours]

Selected subjects in the field of Health and/or Human Service of special interest to the class and the professor - lower division.

**Term Offered:** Spring, Summer, Fall

## **HHS 4500 Data Science II**

[3 credit hours]

Advanced data science concepts, computer programming to build sophisticated analytic databases using multiple source files, engineering and visualization of large data sets. Application of multivariate analysis using popular programming and analytic software packages to report data findings.

**Prerequisites:** HHS 2500 with a minimum grade of D-

**Term Offered:** Spring

## **HHS 4910 HHS Honors Thesis Project**

[1-3 credit hours]

The Thesis/Project is a comprehensive effort of original scholarship. Students work closely with a faculty member for two semesters. Students pose a research question, devise and implement a method, report the results, and discuss the findings. An honors project requires a student to develop a question or identify a matter that is addressed by a thorough literature review, an analysis and integration of the literature, and a comprehensive treatment of the problem or matter.

**Prerequisites:** Honors with a score of 1

**Term Offered:** Spring, Summer, Fall

## **HHS 4980 Special Topics In Health & Human Services**

[1-3 credit hours]

Selected subjects in the field of Health and/or Human Service of special interest to the class and the professor - upper division.

**Term Offered:** Spring, Summer, Fall

# HEALTH CARE (HCAR)

## HCAR 3000 Introduction to Health Care Administration

[3 credit hours]

Studies the structure of the U.S. health care delivery system, provider organizations, and the health care professionals who staff these organizations. Opportunities and challenges of health care administration are discussed.

**Term Offered:** Spring, Summer, Fall

## HCAR 4360 Quality Improvement In Health Care

[3 credit hours]

Purpose and philosophy of quality assessment and system design. Selection/application of tools for data collection, analysis and problem resolution. Incorporates requirements of Joint Commission on the Accreditation of Healthcare Organizations.

**Term Offered:** Spring, Summer, Fall

## HCAR 4510 Medical And Legal Aspects Of Health Care

[3 credit hours]

Coverage of historical development of legal controls in health care facilities, contemporary legal medical analysis and strategy. Also involves major factors influencing education in the allied health professions.

**Term Offered:** Spring, Summer, Fall

## HCAR 4530 Problem Solving In Health Care Environment

[4 credit hours]

The theory, practice, and management of healthcare administration in effective decision making within the dynamics of current health care organizations.

**Prerequisites:** HCAR 3000 with a minimum grade of D- and HCAR 4360 with a minimum grade of D- and HCAR 4550 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## HCAR 4540 Internship In Health Management

[3 credit hours]

Internship in institutional health care focusing on mid-management.

**Term Offered:** Spring, Summer, Fall

## HCAR 4545 Project Management in Healthcare

[3 credit hours]

This course provides an applied approach to creating an Electronic Medical Record system project implementation plan utilizing several approaches to achieve this goal.

**Prerequisites:** HCAR 4530 with a minimum grade of D- and HCAR 4570 with a minimum grade of D- and HCAR 4580 with a minimum grade of D-

## HCAR 4550 Health Care Finance

[3 credit hours]

Study of financial problems and current sources of reimbursement to health care organizations. Emphasis on departmental financial management as integrated with financial management of organizations.

**Prerequisites:** BUAD 2050 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## HCAR 4560 Services in Healthcare

[3 credit hours]

This class will describe the services provided by hospitals, the healthcare provider teams and how departments are organized in the provision of care. This course will have specific concentration on hospital services, structure and operations.

## HCAR 4570 Resources in Healthcare

[4 credit hours]

This four (4) hour hybrid course focuses on the study of resources in healthcare and how these resources impact the daily operations in a health care environment.

**Prerequisites:** HCAR 3000 with a minimum grade of D- and HCAR 4560 with a minimum grade of D-

## HCAR 4580 Leadership and Management in Healthcare

[3 credit hours]

This three (3) hour class will focus on learning strategies and tools for leading and managing the unique challenges of healthcare organizations. The course will investigate the foundations of leadership, core competencies of health care leadership and techniques to hardwired goals and strategies in leadership and development of a strong organizational culture.

**Prerequisites:** HCAR 3000 with a minimum grade of D- and HCAR 4550 with a minimum grade of D- and HCAR 4560 with a minimum grade of D-



# HEALTH EDUCATION (HEAL)

## HEAL 1310 Nutrition for Fitness & Health

[1 credit hour]

The student will learn basic nutrition as it applies physical fitness and overall health. Students will learn principles of planning a healthful diet that meets fitness goals.

**Term Offered:** Spring, Fall

## HEAL 1320 Nutrition for Weight Management

[1 credit hour]

The student will learn principles of weight management, nutrition as it applies to healthy weight control, and overall health and will learn to plan individual approach to healthy diet.

**Term Offered:** Spring, Fall

## HEAL 1360 Alcohol and Contemporary Issues in College Life

[1 credit hour]

This course provides students with an overview of the health, legal, and academic risks associated with excessive alcohol consumption among college students. Various prevention and treatment issues will be examined.

**Term Offered:** Spring, Fall

## HEAL 1500 First Aid

[2 credit hours]

Provides the knowledge, skills, and confidence necessary to provide care for victims of sudden illness and injury. CPR, AED, and First Aid certification upon successful completion of the course.

**Term Offered:** Spring, Fall

## HEAL 1700 Introduction to Health Careers

[3 credit hours]

An introduction to health and human service careers through an examination of the health care system, health career educational requirements, job outlook, and professional settings in which they operate.

**Term Offered:** Spring, Fall

## HEAL 1800 Medical Terminology

[3 credit hours]

Study of the origin and structure of medical words, their prefixes, suffixes, special endings and singular to plural forms. Medical terms relating to the body and to clinical procedures will be explored.

**Term Offered:** Spring, Summer, Fall

## HEAL 2000 Foundations Of Health Education

[3 credit hours]

Designed to introduce students to the field of health education by acquainting them with basic information, history, philosophy and competencies unique to health educators.

**Term Offered:** Fall

## HEAL 2400 General Safety

[3 credit hours]

An analysis of accident causation and disasters occurring in the home, workplace and community, and the presentation of a framework for developing accident counter-measures.

**Term Offered:** Spring

## HEAL 2500 Personal Health

[3 credit hours]

Information is presented on the prevention and control of health problems including heart disease, cancer, infectious diseases, mental health, nutrition, human sexuality and other pertinent personal health issues.

**Term Offered:** Spring, Summer, Fall

## HEAL 2600 Mental Health

[3 credit hours]

An examination of the principles of mental health, mental illnesses, mental health professionals and mental health facilities.

**Term Offered:** Spring, Summer, Fall

## HEAL 2700 Introduction to Public Health

[3 credit hours]

Introduces students to the structure, organization and methods of public health including an emphasis on protecting and improving the health of populations via research, needs assessment, program planning, program implementation, and program evaluation.

**Term Offered:** Spring, Fall

## HEAL 2750 Introduction to Epidemiology

[3 credit hours]

This course provides students with a basic understanding of epidemiologic methods and study design and of the place of epidemiology in preventive and clinical medicine, disease investigation, program evaluation and public policy.

**Term Offered:** Fall

## HEAL 2800 Principles Of Nutrition

[3 credit hours]

Students learn basic nutrition concepts. Personal nutritional practices are analyzed and evaluated to plan improvements. Encourages making informed decisions about nutrition by critically analyzing nutrition information which abounds in popular media.

**Term Offered:** Spring, Summer, Fall

## HEAL 2940 Practicum In Community Health

[1 credit hour]

Supervised field experience with community health agency. Students work under direct supervision of the agency's staff and a University supervisor.

**Term Offered:** Spring, Summer, Fall

## HEAL 3000 Global Health

[3 credit hours]

This is an introductory course focused on applying public health principles in developing as well as developed countries designed to fulfill a global studies distribution requirement.

**Term Offered:** Fall

## HEAL 3100 Health Education For Early Childhood Educators

[2 credit hours]

Provides future early childhood educators with the knowledge and skills necessary to teach and support healthy behaviors among the early childhood population through the establishment of a positive learning environment and the creation and delivery of developmentally appropriate hands-on health education lessons.

**Prerequisites:** EDU 1700 with a minimum grade of D-

**Term Offered:** Spring, Fall

**HEAL 3200 Consumer Health**

[3 credit hours]

An examination of responsible and fraudulent practices in the health field. Evaluation of selected health services, products, fads and types of quackery.

**HEAL 3300 Drug Awareness**

[3 credit hours]

Focuses on the impact of drug abuse and misuse on the individual and society. Explores physiological, psychological and rehabilitative aspects of drug misuse and abuse. Prevention strategies are discussed.

**Term Offered:** Spring, Summer, Fall**HEAL 3500 Environmental Health**

[3 credit hours]

An overview of the environmental effects of factors such as population growth, pollution, energy use, agriculture practices and waste disposal on the environment. Consideration will be given to solutions.

**Term Offered:** Spring, Summer**HEAL 3600 Prevention And Control Of Disease**

[3 credit hours]

An examination of the etiology, pathogenesis, prevention and control of acute and chronic diseases. Current techniques of prevention, control and detection are examined.

**Term Offered:** Spring, Summer, Fall**HEAL 3700 Foundations Of Human Sexuality**

[3 credit hours]

The course is designed to provide an introduction to the scientific study of human sexuality. The topic is approached from a variety of perspectives, including the historical, psychological, sociological, biological, ethical and legal.

**Term Offered:** Spring, Summer, Fall**HEAL 3800 Death And Dying**

[3 credit hours]

The course is designed to analyze the relationship between death and health with emphasis upon the biological, psychological, bioethical and legal aspects of death in contemporary society.

**Term Offered:** Spring, Summer, Fall**HEAL 4100 Health Behavior**

[3 credit hours]

Examines the major theories and models of health behavior and explores how those theories/models can be used to promote health and wellness in individuals, groups and populations.

**Prerequisites:** (HEAL 2000 with a minimum grade of B- and HEAL 2700 with a minimum grade of B-)

**Term Offered:** Fall**HEAL 4200 Methods And Materials In Community Health**

[3 credit hours]

Designed for senior-level students to advance their knowledge and skills in needs assessment, program design, program implementation, program management, and program evaluation.

**Prerequisites:** HEAL 2000 with a minimum grade of D- and HEAL 2700 with a minimum grade of D- and HEAL 2750 with a minimum grade of D-

**Term Offered:** Fall**HEAL 4400 Health Problems Of Youth**

[3 credit hours]

Provides education majors the knowledge and skills necessary to help identify, understand, and prevent preadolescent and adolescent health problems and risky health behaviors which directly impact school and future success.

**Term Offered:** Spring, Fall**HEAL 4500 Women's Health Care**

[3 credit hours]

The course is designed to consider personal health topics of special interest and applicability to women. The focus is upon the role of self-understanding and self-help in promotion of health and well-being.

**Term Offered:** Spring, Summer, Fall**HEAL 4560 Health Problems Of Aging**

[3 credit hours]

Acquaints students with physical changes and socio-psychological problems that occur with aging. Focus is on personal adjustment important in maintaining health throughout the aging process.

**Term Offered:** Spring, Summer, Fall**HEAL 4700 Nutritional Science**

[3 credit hours]

Introduces basic human nutritional needs. Examines the role of diet and health and disease throughout the lifestyle, including weight control and fitness issues. Personal nutritional practices are analyzed and evaluated.

**Prerequisites:** KINE 2530 with a minimum grade of D- or KINE 2560 with a minimum grade of D- or KINE 2570 with a minimum grade of D- or HHS 2570 with a minimum grade of D- or EXSC 2530 with a minimum grade of D- or EXSC 2560 with a minimum grade of D- or EXSC 2570 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall**HEAL 4750 Obesity And Eating Disorders**

[3 credit hours]

Examines the issues of obesity and eating disorders. Consideration of effects on the individual as well as the public health implications. Explores causes, health and emotional impact, and treatment approaches.

**Prerequisites:** HEAL 2800 with a minimum grade of D-

**Term Offered:** Summer, Fall**HEAL 4800 Public Health Research And Statistics**

[3 credit hours]

An examination of research and statistical techniques commonly employed in the health field. Topics will include research design, ethics of research, hypothesis testing and critiques of published research in health journals.

**Prerequisites:** HEAL 2750 (may be taken concurrently) with a minimum grade of B- and HEAL 3600 with a minimum grade of B-

**Term Offered:** Spring**HEAL 4900 Health Education Seminar**

[1-3 credit hours]

Seminars are developed around selected topics of interest and allow in-depth consideration of the subject. They provide the student with advanced study in the area.

**Term Offered:** Spring, Summer, Fall

**HEAL 4940 Senior Field Experience**

[1-9 credit hours]

Provides students the opportunity to develop the competencies necessary to assume responsibilities as an entry-level public health specialist through on-site work experiences in a public health agency, organization, or industry. Students will work under direct supervision of the agency's staff and a University supervisor.

**Prerequisites:** HEAL 2940 with a minimum grade of D- and HEAL 4100 with a minimum grade of D- and HEAL 4800 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**HEAL 4990 Independent Study In Health Education**

[1-3 credit hours]

Directed individual study. Specialty title, seminar sheet and permission of instructor are required.

**Term Offered:** Spring, Summer, Fall

# HEALTH INFORMATION MANAGEMENT (HIM)

## HIM 2210 Medical Linguistics In Ancillary Services

[3 credit hours]

Expanded medical linguistics utilized in coding, classification systems and ancillary services, especially surgery, medical imaging, anesthesiology, medical tests and laboratory procedures. Linguistics of pharmacology, pathophysiology and infectious/parasitic diseases are analyzed.

**Term Offered:** Spring, Summer

## HIM 2230 Healthcare Document Requirement

[3 credit hours]

Inpatient and ambulatory health care data requirements will be identified and analyzed, including collection, analysis, and implementation. This course also includes aspects related to medical staff, personnel requirements, licensing, certifying, and accrediting agencies.

**Term Offered:** Spring, Fall

## HIM 2260 Legal Issues in HIM

[2 credit hours]

This course covers overview of the US legal system, identification of laws and regulations applicable to healthcare topics and related the health information management. Hardcopy and electronic health record legal issues examined in detail.

**Term Offered:** Spring, Fall

## HIM 2300 Healthcare Resources, Payers

[3 credit hours]

Introduction to roles of professionals in meeting standards of regulatory agencies and voluntary organizations in healthcare delivery systems. Data collection, quality, access, retention, technology and impact on healthcare financing.

**Term Offered:** Spring, Summer, Fall

## HIM 2310 Acute Care Clinical Classification Systems And Services

[4 credit hours]

Principles of coding disease conditions and procedures using the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) and 10th Revision Procedure Classification System (ICD-10-PCS) are covered. Manual and computerized methods will be utilized to assign codes following Official Coding Guidelines required for reporting data.

**Prerequisites:** (KINE 1460 with a minimum grade of C or EXSC 1460 with a minimum grade of C and KINE 1560 with a minimum grade of C or EXSC 1560 with a minimum grade of C and KINE 2580 with a minimum grade of C or EXSC 2580 (may be taken concurrently) with a minimum grade of C) and (HIM 2210 with a minimum grade of C and HIM 2230 with a minimum grade of C)

**Term Offered:** Fall

## HIM 2320 Ambulatory Clinical Classifications Systems And Services

[4 credit hours]

Principles of coding with the Healthcare Common Procedure Coding System (HCPCS) are discussed, and the assignments of codes using both manual and computerized methods are practiced.

**Prerequisites:** HIM 2210 with a minimum grade of C and (KINE 1460 with a minimum grade of C or EXSC 1460 with a minimum grade of C and KINE 1560 with a minimum grade of C or EXSC 1560 with a minimum grade of C)

**Term Offered:** Spring

## HIM 2350 Reimbursement Methodologies

[2 credit hours]

MS-DRGs, APCs, RBRVS, and other reimbursement methods used by federal, state, and private insurance carriers are identified and reviewed. Compliance issues, including coding, billing, and chargemaster accuracy are identified and reviewed. Case mix and its implications for providing and improving healthcare quality also discussed.

**Prerequisites:** HIM 2310 with a minimum grade of C and HIM 2320 with a minimum grade of C

## HIM 3240 Health Information Administration Practices

[4 credit hours]

Management theory and principles related to health information management in the acute and non-acute care environments are examined. Business techniques beneficial to health information administrators are identified and analyzed. Management theory and principles related to administration of healthcare service organizations are examined. Focus on strategic planning, accreditation/licensure, marketing, and institutional issues.

**Prerequisites:** BUAD 1020 with a minimum grade of D- and HIM 2300 with a minimum grade of C

**Term Offered:** Spring, Fall

## HIM 3940 Healthcare Content and Record Management

[4 credit hours]

Generalized health information administrative duties in regards to staffing, managing, record release, storage and retrieval, coding, abstracting, utilization management, quality improvement, computer applications in health information practice.

**Prerequisites:** HIM 3240 with a minimum grade of C

**Term Offered:** Spring, Fall

## HIM 4210 Healthcare Statistics, Registries, Research

[4 credit hours]

Theory of healthcare statistics will be reviewed and students will apply practical application of statistical methods used in healthcare to produce reports. Surveillance mechanisms, including database management used in registries to track various disease processes or injuries will be investigated and researched.

**Prerequisites:** MATH 2600 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**HIM 4230 Compliance and Ethical Issues**

[3 credit hours]

This course presents an overview of the compliance and ethical issues facing the health care industry. The importance of corporate compliance programs and standards, policies, and procedures healthcare organizations should have in place to assure compliance with government funded programs will be the focus of the course. Senior standing status required.

**Term Offered:** Spring, Fall**HIM 4300 Performance Improvement and Quality Outcomes in Healthcare**

[3 credit hours]

This course encompasses the philosophy and purposes of quality improvement methods in health care organizations through application of tools for data collection, data analysis, and problem resolution. Continuous monitoring and performance improvement (PI) methods are investigated and applied to the management and evaluation of PI programs, the review of PI outcomes and implementation of action plans.

**Prerequisites:** INFS 3250 with a minimum grade of D- and CMPT 2460 with a minimum grade of D- and CMPT 1420 with a minimum grade of D-

**Term Offered:** Fall**HIM 4500 Health Informatics & Information Management**

[4 credit hours]

This course introduces students to informatics as it applies to healthcare. Healthcare information systems are identified and the importance of the technology and its effect on healthcare delivery, communication, confidentiality, financing, and education are examined. An introduction to key medical areas in which computers are used will be discussed.

**HIM 4910 Integrative Capstone Experience**

[4 credit hours]

The course consists of a demonstration of proficiencies and competencies in Health Information Administration (HIA) core courses and an extensive examination of the cognitive levels required to pass the national Registered Health Information Administration (RHIA) exam and to become an effective healthcare information supervisor. Senior standing and instructor permission required.

**Term Offered:** Spring, Fall**HIM 4940 Professional Practice Experience**

[4 credit hours]

Specialized administrative assignment within health information management in a facility, agency or organization. Students submit a major project for the site and members of the related HIM community of practice. Senior standing and instructor permission required.

**Prerequisites:** HIM 3240 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall



# HISTORY (HIST)

## HIST 1010 Europe To 1600

[3 credit hours]

A survey of western Europe, including its ancient Jewish, Greco-Roman and Christian roots; the Middle Ages, Renaissance and Reformation.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## HIST 1020 Europe From 1600

[3 credit hours]

A survey of European history from the 17th century to the present with emphasis on the major political, economic, social and cultural trends.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## HIST 1050 World History To 1500

[3 credit hours]

A survey of the ancient world from the stone age to around 1500. Cultural and political topics are treated so as to compare the major civilizations.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## HIST 1060 World History From 1500

[3 credit hours]

A survey of world history from 1500 to the present. Cultural and political topics are treated so as to draw comparisons between the most significant modern societies.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## HIST 1070 The Contemporary World

[3 credit hours]

This thematic survey of the 20th century from a historical and global perspective emphasizes the origins of the world in which we live and discusses some of our alternative futures.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HIST 1080 East Asia To 1800

[3 credit hours]

Multidisciplinary introduction to traditional East Asia (origins-1800) with emphasis on the historical development, political traditions, socio-economic patterns, religious and philosophical values, and cultural accomplishments of China and Japan.

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HIST 1090 East Asia From 1800

[3 credit hours]

Multidisciplinary introduction to the history, civilization, political organization, international relations, social and economic patterns, and cultural trends of China and Japan since 1800.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HIST 1100 Latin American Civilizations

[3 credit hours]

A thematic survey from pre-Columbian times to the present. Covers Native American cultures, European colonial policies and institutions, independence movements, the emergence of new nations and twentieth-century problems.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HIST 1110 African Civilization

[3 credit hours]

General cultural and historical survey of Africa south of the Sahara from earliest times to the 20th century. Includes topics on art, literature, philosophy, religion and society.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HIST 1120 Middle East Civilization

[3 credit hours]

General cultural and historical survey of the Middle East and Islam from 600 to the 20th century. Includes topics in historical movements, literature, religion, and social and intellectual history.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HIST 1130 Introduction To Historical Thinking

[3-4 credit hours]

(Not for major credit) An introduction to the nature, concepts and skills of the discipline of history designed to improve historical awareness and the ability to think historically. Occasionally offered as a writing intensive course.

**Term Offered:** Spring, Fall

Core Arts & Humanities

## HIST 1200 Main Themes In American History

[3 credit hours]

This thematic survey introduces students to historical theory, methods, and the primary sub-fields of American history from colonial conquest to the present day.

Core Arts & Humanities

## HIST 2000 Methods Seminar

[4 credit hours]

Research techniques, writing of term papers and book reviews. Introduction to historiography. Offered as a writing intensive course.

**Term Offered:** Spring, Fall

## HIST 2010 America To 1865

[3 credit hours]

The development of the United States from its Native American and immigrant roots through the Civil War.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## HIST 2020 America From 1865

[3 credit hours]

Survey of American history since the Civil War, with special attention to political, social, economic and cultural developments.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2030 Great Americans**

[3 credit hours]

The careers of selected Americans in politics, business, science, religion and literature.

**Term Offered:** Fall

**HIST 2040 Ancient Near East**

[3 credit hours]

Survey of the Sumerian, Babylonian, Hittite, Assyrian, Egyptian, Palestinian and Persian worlds.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**HIST 2050 Ancient Greece**

[3 credit hours]

Survey of the Greek and Hellenistic world.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2060 Ancient Rome**

[3 credit hours]

Survey of the Roman Republic and Empire.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**HIST 2170 Great Britain To 1714**

[3 credit hours]

An introductory course on English history from the Roman conquest to 1714. Emphasis on the Norman conquest, social and political life in medieval England, the monarchy, and common law.

**Term Offered:** Summer, Fall

**HIST 2180 Great Britain From 1714 To The Present**

[3 credit hours]

An introductory course on British history from the Hanoverian dynasty to the present. Emphasis on English maritime power, the industrial revolution and two world wars.

**Term Offered:** Spring

**HIST 2190 Britain And Ireland**

[3 credit hours]

From the 17th to the 20th century, the mutual influences in literature and history of colony and colonizer are examined.

**Term Offered:** Spring

**HIST 2250 World War I**

[3 credit hours]

World War I from origins to conclusion and its effect on the course of the 20th century. Political and diplomatic background, conduct, termination, technology, and the war's effect on society and the 20th century.

**Term Offered:** Fall

**HIST 2260 World War II On Film**

[3 credit hours]

Analysis of contemporary and retrospective documentary film treatments of major aspects of World War II, with emphasis on their historical accuracy and authenticity.

**HIST 2280 Toledo: Emergence Of A City, 1750-1880**

[3 credit hours]

Early history of Toledo and the Maumee River Valley, including Indian settlement, imperial rivalries, Maumee Valley towns, economic growth, immigrant arrivals and the creation of neighborhoods.

**Term Offered:** Fall

**HIST 2290 Toledo: Metropolitan Era, 1880-1980**

[3 credit hours]

The growth of Toledo in the 20th century, including suburbanization, the city's leadership in the national Progressive Movement, Depression and New Deal, organized labor, individual suburbs, and recent problems.

**HIST 2340 American Indian History**

[3 credit hours]

An introduction to Indian-White relations from pre-Columbian times to present. Emphasizes tribes of the United States, Mexico and Canada.

**Term Offered:** Fall

Multicultural US Diversity

**HIST 2450 Canada To 1867**

[3 credit hours]

Canadian history from before European contact to Confederation. Considers European-Native contact, Canada as an extension of Europe and the beginnings of Canadian identities.

**HIST 2460 Canada Since 1867**

[3 credit hours]

Canadian history since Confederation. Considers expansion westward, constitutional development, continuing British vs. French, and European vs. Native tensions. Canada and the U.S., modern society, economy, politics.

**Term Offered:** Fall

**HIST 2640 Medieval Russia**

[3 credit hours]

Russia from the 9th century to 1700, including Kievan and Moscovite Russia.

**Term Offered:** Fall

Multicultural Non-US Diversity

**HIST 2650 Modern Russia**

[3 credit hours]

Russia from 1700 to the present, including Imperial and Soviet Russia.

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 2700 Japan And World War II**

[3 credit hours]

A study of the factors behind Japan's entry into World War II with the United States and the Allied Powers and an in-depth treatment of Japan at war.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 2710 Postwar Japan**

[3 credit hours]

This course examines the development of Japan since the war. It focuses on the political, economic, social and cultural changes since 1945 and relates these factors to Japan's international relations.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 2720 History Of Tokyo**

[3 credit hours]

An examination of Japanese urban social and cultural history. Treats the foundations of Edo, transition to Tokyo, the modern rise, the great earthquake, the war, the Olympics and the present.

**HIST 2730 The Chinese Revolution**

[3 credit hours]

This course examines the process by which Mao Zedong and the Chinese Communist Party came to power. It treats the political, economic and social forces behind the Chinese revolution (1900-49).

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 2980 Special Topics**

[1-4 credit hours]

Topics selected by various instructors. May be repeated when the topic varies.

**Term Offered:** Spring, Fall**HIST 3100 European Middle Ages I**

[3 credit hours]

The history of Western Europe from its beginnings to the eve of the First Crusade.

**Term Offered:** Fall**HIST 3110 European Middle Ages II**

[3 credit hours]

Europe from the First Crusade to the late fifteenth century.

**Term Offered:** Spring**HIST 3120 Women in Medieval Europe**

[3 credit hours]

Women's lives in medieval Europe from a range of perspectives, including noblewomen, townswomen, peasant women, religious women. Students will gain an appreciation of how medieval women's lives were different from and similar to those of modern women, as well as a broader understanding of the European middle ages.

**HIST 3130 Tudor England**

[3 credit hours]

Tudor England from 1485 to the end of the reign of Elizabeth I, emphasizing political, economic and social developments.

**HIST 3160 The American West**

[3 credit hours]

Settlement since the Civil War; mining rushes and Indian wars; violence and outlaws; farming and cattle ranching. Twentieth-century politics; ethnicity; and economics. Growth of California and the Sunbelt states.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**HIST 3190 Britain From 1763 To 1832**

[3 credit hours]

An intensive examination of the slave trade, factory system, radicalism, Parliamentary Reform, insurrection, by means of reading primary sources such as Tom Paine.

**HIST 3200 Colonial Latin America**

[3 credit hours]

Latin American history to 1825. Covers pre-Columbian Indian civilizations including Aztecs and Incas; Spanish and Portuguese conquests and Africans in the Americas; colonial policies and institutions; colonial society and independence movements.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 3210 Modern Latin America**

[3 credit hours]

Major economic, political and social developments from independence to the present. Covers the export boom, neocolonialism, nationalism, and revolutions in Latin America. Considers how, In spite of the region's tremendous diversity, there is a shared "Latin American" experience.

**Term Offered:** Spring, Summer

Multicultural Non-US Diversity

**HIST 3230 Early Caribbean History**

[3 credit hours]

This course covers the history of the early Caribbean through emancipation in the mid-nineteenth century. Topics include: The Carib and Taino Indians, European exploration and colonization, the Atlantic slave trade, and the golden age of piracy.

**HIST 3240 Modern Caribbean History**

[3 credit hours]

This course examines Caribbean history in the nineteenth and twentieth centuries. Topics include: history of Caribbean culture and music, migration, tourism, and social, political, and economic challenges of the twentieth century.

**HIST 3250 African-American History To 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States from 1619 to 1865.

**Term Offered:** Fall

Multicultural US Diversity

**HIST 3260 African-American History From 1865**

[3 credit hours]

An examination of the historical experiences of African-Americans in the United States since 1865.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**HIST 3270 The City In American History, 1607-1850**

[3 credit hours]

Examination of early American urban development and culture. Topics include the development of urban infrastructure, crime and disorder; moral reform; religious revival; immigration; prostitution; the development of commercial entertainment.

**Term Offered:** Spring, Fall**HIST 3280 City And Metropolis In Modern America, 1850 To The Present**

[3 credit hours]

The growth of the 19th-century city and the emergence of the 20th-century American metropolis. Urban problems of the 20th century.

**Term Offered:** Spring, Fall

**HIST 3290 Ohio History**

[3 credit hours]

From colonial times to the present.

**Term Offered:** Spring, Summer, Fall**HIST 3310 Ethnic America**

[3 credit hours]

American ethnic diversity from the colonial era to recent decades. A study of individuals and groups. Topics include American identity and Americanization, migration, legislation, nativism.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**HIST 3320 Indians In Eastern North America**

[3 credit hours]

Native Americans in Eastern North America from prehistoric times through Jacksonian Indian Removal. Emphasis on intercultural interactions.

**HIST 3330 Western American Indians**

[3 credit hours]

Native Americans of the Far West from prehistoric times through recent years. Emphasis on European contact and governmental policies.

**Term Offered:** Spring**HIST 3360 American Intellectual History I**

[3 credit hours]

Development and influence of major ideas from the colonial period to 1865. Topics include Puritanism, the Enlightenment, Democracy and Transcendentalism.

**Term Offered:** Spring**HIST 3370 American Intellectual History II**

[3 credit hours]

Major developments in American thought from 1865, including Social Darwinism, pragmatism, ideological conflict, modern science, education.

**Term Offered:** Spring**HIST 3380 Business And American Society**

[3 credit hours]

The growth of American business from the eighteenth century to the present. Examines enterprise and its relationship to culture, politics, technological developments and economic change.

**Term Offered:** Spring, Fall**HIST 3410 American Social And Cultural History, 1850-The Present**

[3 credit hours]

American social and cultural patterns, institutions and forces from the mid-19th century to the present.

**Term Offered:** Fall**HIST 3420 American Military History**

[3 credit hours]

The development of the strategy, tactics, organization, operation and policies of the armed forces of the U.S.; the interaction with technological factors, foreign policy goals, international problems and American society.

**Term Offered:** Fall**HIST 3430 American Military History In The 20th Century**

[3 credit hours]

Intensive examination of the history of land, sea, air and intelligence factors. Emphasizes the historical development of the strategy and tactics of wars, peacetime planning, technological developments and military-societal relationships.

**HIST 3440 American Radicalism**

[3 credit hours]

Origins and development of radical social movements and their ideologies from the American Revolution to the New Left of the 1960s. Abolitionism, Feminism, Communitarianism, Marxism, Anarchism, Populism, Communism and the Peace Movement are among the topics to be studied.

**Term Offered:** Fall**HIST 3470 U.S. Disability History**

[3 credit hours]

Provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States

**Term Offered:** Spring, Fall**HIST 3480 American Labor And Working Class History**

[3 credit hours]

Development of working class communities, cultures, organizations and ideology from colonial era to the present. Topics include industrialization, unionization, labor law, gender and race constructions.

**Term Offered:** Spring

Multicultural US Diversity

**HIST 3500 European Diplomacy 1648-1815**

[3 credit hours]

The foreign policies and foreign relations of the great powers from 1648 to the Congress of Vienna, 1815.

**HIST 3530 20th Century Germany**

[3 credit hours]

Germany's development from the end of World War I to the present with emphasis on the rise of Nazism, World War II, and the division and new unification of Germany.

**Term Offered:** Fall**HIST 3540 History Of The Middle East From 600 To 1500**

[3 credit hours]

A survey of Middle East history from the emergence of Islam and the formation of Islamic states until the establishment of the Ottoman and Persian empires in the 15th-16th centuries.

Multicultural Non-US Diversity

**HIST 3550 History Of The Middle East Since 1500**

[3 credit hours]

History of the Middle East from the collapse of the Medieval Muslim States and the rise of the Ottoman Empire in the 16th century through the period of European intervention to the development of independent Middle Eastern states in the 20th century.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**HIST 3560 Early Modern France**

[3 credit hours]

A survey of early modern French history from c. 1600-1789.

**HIST 3600 Women In American History**

[3 credit hours]

This course presents American history from early settlement to the present by examining the contributions of women, in interaction with men, to the immensely complex fabric of American life.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**HIST 3870 Junior Honors Research I**

[3 credit hours]

Independent research on specific historical topics.

**Term Offered:** Spring, Summer, Fall**HIST 3880 Junior Honors Research II**

[3 credit hours]

Independent research on specific historical topics.

**Term Offered:** Spring, Fall**HIST 3980 Special Topics**

[1-4 credit hours]

Topics selected by various instructors. May be repeated when the topic varies.

**Term Offered:** Spring, Summer, Fall**HIST 4010 Greek History**

[3 credit hours]

Selected topics on the political and social institutions of Greece in the classical and Hellenistic periods.

**Term Offered:** Fall**HIST 4020 Roman History**

[3 credit hours]

Selected topics on the political and social institutions of Rome during the Republic and Empire.

**Term Offered:** Spring**HIST 4030 Europe In The 14th-15th Centuries**

[3 credit hours]

The late Middle Ages and the development of the Renaissance in Western Europe.

**HIST 4060 Age Of Absolutism**

[3 credit hours]

The growth and decline of the absolute monarchies in Europe and the development of a world market economy, c.1550-1715.

**HIST 4080 Age Of Revolution**

[4 credit hours]

The age of the French Revolution and Napoleon, c.1785-1848.

**HIST 4100 Europe Since World War I**

[3 credit hours]

Internal and international development of the major European states from World War I to the end of the twentieth century.

**HIST 4150 Critics Of Victorian Society**

[3 credit hours]

Principal critics of society like Ruskin, Carlyle, Cobbett, Marx, Engels, Morris, Mill are read with a view to understanding capitalism, industrialism and England.

**HIST 4170 The British Empire: For And Against**

[3 credit hours]

The emergence of England as a maritime power, as an empire, and as a financial force, with emphasis upon resistances and decolonization.

**Term Offered:** Fall**HIST 4180 Topics In English Social And Economic History**

[3 credit hours]

Selected topics on English society and economy will be covered, such as urbanization, family and gender relations, enclosures, work and crafts.

**HIST 4200 Colonial Foundations Of U.s.**

[3 credit hours]

Colonial America from early settlement to the eve of the American Revolution. Examination of the American Colonies from an Atlantic perspective, focusing on European motivation for settlement, European-Native American relations, the origins and development of slavery, religious and economic change, and the creation of early American culture.

**Term Offered:** Fall**HIST 4210 Women In Early America**

[3 credit hours]

Examination of the evolution of women's experience in the United States from colonization to the Civil War era.

**Term Offered:** Fall

Multicultural US Diversity

**HIST 4220 The American Revolution**

[3 credit hours]

Examination of the decades surrounding the American Revolution and America's transformation from British colony to independent republic. Political and social origins of the Revolution; formation of the republican state; changing notions of citizenship and equality; the role of political leaders in society; social and cultural consequences of the Revolution.

**Term Offered:** Fall**HIST 4230 United States Early Republic**

[3 credit hours]

History of the ratification of the United States Constitution; Growth and expansion of federal authority; development of financial and judicial institutions and the first political parties; early American foreign policy; and the creation of American identity and democratic political culture.

**Term Offered:** Spring**HIST 4240 The Age Of Jackson**

[3 credit hours]

Exploration of the major social, economic and political developments in the United States in the decades leading up to the Civil War. The creation of a market society; religion and reform; westward expansion; slavery and abolition; the origins and development of the second-party system; the politics of slavery

**HIST 4250 Civil War And Reconstruction**

[3 credit hours]

Slavery and the Constitution in the sectional controversy, the political and military events of the Civil War, and the impact of the war on American society, 1848-1876.

**Term Offered:** Spring, Fall



**HIST 4260 Emergence Of Modern America, 1876-1919**

[3 credit hours]

American society in the late 19th and early 20th centuries including industrialization, urbanization, immigration, agrarian and labor revolts, politics, economic expansion, overseas initiatives, Progressive reform and involvement in World War I.

**Term Offered:** Spring**HIST 4270 20th Century America, 1920-1945**

[3 credit hours]

Social, political and economic development of the United States, 1920-1945. The Republican ascendancy, the car culture, Great Depression, New Deal and World War II.

**Term Offered:** Fall**HIST 4280 U.s. Since 1945: Affluence And Anxiety**

[3 credit hours]

Social, economic and political development of the United States since 1945. The Cold War, McCarthyism, Eisenhower Equilibrium, the New Frontier and the Great Society, civil rights, Watergate and the Reagan Revolution.

**Term Offered:** Spring, Fall**HIST 4290 US Women from 1865**

[3 credit hours]

A survey of women in the United States from 1865. Covers women's political, economic, and social participation in American life. Particular attention is given to the life experiences of women from a diversity of racial, ethnic, sexual, and socio-economic backgrounds.

**Term Offered:** Spring, Fall**HIST 4310 History Of Native American Religious Movements**

[3 credit hours]

History of Native American revitalization movements as a response to European colonization and Indian dispossession.

**HIST 4340 Far Western Frontier**

[3 credit hours]

Native Americans; Spanish conquistadors and missionaries; American scientific and military exploration; mountain men and fur trade; international rivalries and Mexican War; gold rush of '49.

**HIST 4430 Slavery In America**

[3 credit hours]

Stresses the African continuum among slaves within the context of variations in goals and policies of slaveowners, slave trade, slave economics, demographics, slave labor and formation of slave culture.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**HIST 4450 The United States And Latin America**

[3 credit hours]

Examines the 19th and 20th centuries: emphasizing events and movements defining political, economic, migratory, military, and cultural relations and the emergence of Latinos as largest minority group in the US.

Multicultural US Diversity

**HIST 4470 People And Politics In Mexico**

[3 credit hours]

Mexican history from pre-Hispanic times to the present. Emphasis on the political, social and economic changes imposed by the Spaniards; the legacy of colonialism on the modern nation; the Mexican Revolution and the "Mexican Miracle."

**Term Offered:** Summer, Fall

Multicultural Non-US Diversity

**HIST 4490 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

**Term Offered:** Spring, Fall**HIST 4620 Central Europe**

[3 credit hours]

Central Europe from medieval times to the present. The Habsburg Empire, Poland, the Balkans, twentieth-century changes.

**HIST 4660 Imperial Russia, 1700-1917**

[3 credit hours]

Rise and fall of the Russian Empire. Politics and society from the time of Peter the Great to the 1917 Revolution.

Multicultural Non-US Diversity

**HIST 4680 20th Century Russia**

[3 credit hours]

Russia from the 1917 Revolution to the present. Topics include Marxism, Communism, Stalinism, Cold War.

Multicultural Non-US Diversity

**HIST 4720 Modern Chinese History**

[3 credit hours]

China in transition under the impact of the West; forces leading to the revolution of 1911, the Nationalists' struggle, the emergence of the People's Republic of China and aspects of post-revolutionary China.

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 4740 Modern Japanese History**

[3 credit hours]

Japan in transition under Western influence, forces leading to the Meiji Restoration, the modernization of Japan, Japan's rise as a world power, war and postwar developments.

**Term Offered:** Spring

Multicultural Non-US Diversity

**HIST 4750 Europe And Asia: Exploration And Exchange, 1415-1800**

[3 credit hours]

Motivation and process of European expansion to Africa and Asia from 1415-1800.

**HIST 4790 The Holocaust**

[3 credit hours]

This advanced course deals with selected aspects of the history and memory of Nazi genocide against the Jews of Europe, with special emphasis on visual and survivor sources.

**Term Offered:** Spring

**HIST 4830 Theory Of Public History**

[3 credit hours]

The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

**HIST 4840 Public History Practicum**

[3 credit hours]

Course provides students with hands-on experience in the practice of public history by completing a project using specialized techniques, client-oriented research and teamwork. May be repeated for credit.

**Term Offered:** Spring

**HIST 4870 Senior Honors Research I**

[3 credit hours]

Open to College Honors students, to History Honors students and to Honors students from other departments. Independent research in specific topics.

**Term Offered:** Spring, Summer, Fall

**HIST 4880 Senior Honors Research II**

[3 credit hours]

Open to College Honors students, to History Honors students and to Honors students from other departments. Independent research in specific topics.

**Term Offered:** Spring, Fall

**HIST 4940 Public History Internship**

[0-8 credit hours]

Supervised experiential learning in history.

**Prerequisites:** (HIST 2000 with a minimum grade of D- and HIST 4830 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**HIST 4980 Special Topics**

[1-4 credit hours]

Topics selected by various instructors.

**Term Offered:** Spring, Fall

**HIST 4990 Independent Studies**

[1-4 credit hours]

Research and writing on topics designed to meet individual needs.

**Term Offered:** Spring, Summer, Fall

# HONORS (HON)

## HON 1010 Ideas and Society

[3 credit hours]

Through a process of critical examination, analytical thought, and intellectual exchange, students engage in study of ideas in society during different time periods and across different cultural contexts and intellectual disciplines. Drawing upon primary and secondary sources using multiple humanities discourses, students analyze and evaluate and respond to diverse populations and perspectives. From this synthesis, students gain ability to apply understanding of ideas in contemporary society as well as ideas in their fields of study.

**Term Offered:** Spring, Fall

Core Arts & Humanities

## HON 1020 Innovation and Society

[3 credit hours]

In this interdisciplinary course, students will analyze and critique various processes of innovation in society with an emphasis on its impact on human society. Students will gain the ability to evaluate course concepts against competing approaches and solutions in society, as well as in their own fields of study.

**Term Offered:** Spring, Fall

Core Arts & Humanities

## HON 2010 Multicultural Toledo

[3 credit hours]

Multicultural Toledo is an interdisciplinary investigation into the multicultural, historical and socio-economic development of the greater Toledo area and the ways that different community groups respond to, and shape, this transformation. Topics may include: ethnicity, race, gender, gender orientation, socioeconomic class, religion, national origin, dis/ability, and age within the Toledo community. The course features multiple site visits to community organizations.

**Term Offered:** Spring, Fall

Core Social Sciences, Multicultural US Diversity

## HON 2020 Multicultural Literatures: The North American Experience-Honors-WAC

[3 credit hours]

This reading, writing and discussion course examines selected literatures of the North American experience: for example, texts by African American, Arab American, Asian American, Hispanic or Native American authors.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

## HON 2030 Multicultural Literatures: The Non-European World-Honors-WAC

[3 credit hours]

This reading, writing and discussion course examines selected non-European literatures.

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## HON 2990 Independent Study

[1-5 credit hours]

Supervised independent study.

**Term Offered:** Spring, Summer, Fall

## HON 3010 Community Engagement

[3 credit hours]

This research intensive, interdisciplinary course is designed to provide students with experience in effective community engagement through work on a local issue or problem in a mentored, multidisciplinary team. Class will focus on developing practical skills, identifying best practices, and exploring potential solutions for complex problems. The course culminates in a grant proposal that can be adopted or adapted by our community partners. Class time consists of short instructional presentations, group work, and class discussions.

**Term Offered:** Spring, Fall

## HON 4950 Honors Seminar

[3 credit hours]

These interdisciplinary seminars are organized around a variety of subjects and intellectual concerns.

**Term Offered:** Fall

## HON 4960 Honors Seminar

[3 credit hours]

These interdisciplinary seminars are organized around a variety of subjects and intellectual concerns.

**Term Offered:** Spring

## HON 4990 Independent Study

[1-5 credit hours]

Supervised independent study.

**Term Offered:** Spring, Fall

# HUMAN RESOURCE MANAGEMENT (HURM)

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## **HURM 3220 Human Resource Management**

[3 credit hours]

Introduction to the field of human resource management. It is designed for students planning careers in human resources or those who simply wish to supplement their skills in personnel matters commonly of concern to all managers.

**Term Offered:** Spring, Summer, Fall

## **HURM 4640 Benefits, Health & Wellness**

[3 credit hours]

Includes planning and administering mandatory and voluntary benefit programs, cost containment strategies and benefit communication programs. Development and administration of Employee Assistance Programs and employee wellness programs are also covered.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **HURM 4650 Compensation**

[3 credit hours]

Design and administration of compensation systems, including job evaluation, skill-based pay, salary surveys, pay level decisions, pay structures, executive and special employee group compensation programs, and budget and administrative issues.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **HURM 4660 Planning, Selection, and Recruitment**

[3 credit hours]

Covers aspects of human resource planning, including Affirmative Action and succession planning, developing legally defensible selection and recruitment methods, and career development.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **HURM 4710 Human Capital Performance and Development**

[3 credit hours]

This course has been designed to give students the critical skills necessary to improve the performance of individuals and work groups in competitive, dynamic organizations. Specifically, the focus will be on HRM best practices in performance management and training and development that, when brought together, help to create competitive advantage with people.

**Prerequisites:** HURM 3220 with a minimum grade of C-

**Term Offered:** Spring, Fall

## **HURM 4800 Human Resource Information Systems**

[3 credit hours]

Course covers issues and techniques related to human resource information systems, human resource analytics, performance metrics, and the integration of technology to create and sustain effective HRM practices that contribute to the effectiveness of organizations.

**Prerequisites:** HURM 3220 with a minimum grade of D- and BUAD 2020 with a minimum grade of D-

**Term Offered:** Spring, Fall





# INFORMATION SYSTEMS (INFS)

## **INFS 3150 Principles Of Structured Computer Programming And Problem Solving**

[3 credit hours]

Introduction to fundamental constructs of computer programming. This course introduces data types, variables, constants, arrays, objects, properties, methods, arguments, events, subroutines, functions, data handling, and program control structures. Additionally the course helps students develop skills and logical reasoning used in solving business problems.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D- or Business Computer Prof-Score with a score of 39

**Term Offered:** Spring, Summer, Fall

## **INFS 3160 Business Application Development**

[3 credit hours]

Building on programming skills developed in INFS3150 this course emphasizes database connectivity, data retrieval, design of user interfaces and business application development. The course will survey an object oriented language like C++, Java.

**Prerequisites:** INFS 3150 with a minimum grade of D-

## **INFS 3250 Business Data Analysis & Reporting**

[3 credit hours]

This course is designed to acquaint students with the application and use of integrated software. The course will provide students with hands-on experience in data analysis and manipulation, macro recording and editing and other advanced features and functions of popular business software packages. Students will gain skills in computer based report writing and data visualization techniques.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **INFS 3370 Business Data Communications**

[3 credit hours]

An introduction to data communications in business. Topics include local-area and wide-area networks, including the Internet; hardware and media; network topologies; client-server networks; and network operating system software.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D- or Business Computer Prof-Score with a score of 39

**Term Offered:** Spring, Fall

## **INFS 3380 Web Application Development I**

[3 credit hours]

An introduction to business application program development on the web using contemporary technologies with emphasis on client-side applications. Implications of information technology projects on organizations will be discussed.

**Prerequisites:** BUAD 1020 with a minimum grade of D- or CMPT 1100 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **INFS 3400 Principles of Information Systems Security**

[3 credit hours]

This course aims to give students a broad understanding of technical and business issues in information systems security, systems security models, analysis of process and technology in systems security and security policies leading to information assurance.

## **INFS 3770 Introduction To Database Systems**

[3 credit hours]

In this course, the design and implementation of database management systems are studied. Students will develop significant skills in data modeling, database design and SQL. Students will work in teams developing a database application.

**Prerequisites:** INFS 3150 with a minimum grade of D- and (BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## **INFS 3780 Enterprise Wide Information Systems Management**

[3 credit hours]

Introduction to ERP, Roles of SCM and CRM in Business Environment, Major Business Processes relating to functional areas of Business in an integrated software environment. Extensive hands-on exercises using an ERP software.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Fall

## **INFS 3980 Contemporary Topics**

[3 credit hours]

Selected current topics in Information Systems practice, trends and technology.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **INFS 4100 Business Intelligence Using Big Data**

[3 credit hours]

This course aims to give students a broad understanding of technical and business issues in data analytics. Students will gain proficiency with reporting, data visualization and prediction using SAP Business Warehouse.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

## **INFS 4300 Web Application Development II**

[3 credit hours]

Address web architecture, web server administration and security issues; analyze, design, develop, and implement extensive database oriented business processes using server-side and client-side processing.

**Prerequisites:** (INFS 3770 with a minimum grade of D- and INFS 3380 with a minimum grade of D-)

**Term Offered:** Spring

## **INFS 4320 Information Systems Planning And Outsourcing Management**

[3 credit hours]

Issues of planning, control, outsourcing management, and the organizational impact of computer systems will be studied. Challenges and opportunities in outsourcing will also be the focus of the course.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**Term Offered:** Fall

**INFS 4510 Business Systems Analysis and Design**

[3 credit hours]

Analysis, design and implementation of business information systems will be studied using Case tools and other appropriate software systems. Will also emphasize management of organizational change brought about by information technology projects.

**Prerequisites:** (BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-) and INFS 3150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**INFS 4620 Enterprise Database Systems**

[3 credit hours]

In-depth exposure to database concepts including relational and Object Data Models, normalization, logical design, stored functions, procedures, triggers, forms and reports will be explored using a business database package.

**Prerequisites:** INFS 3770 with a minimum grade of D- and (BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-)

**Term Offered:** Spring

**INFS 4680 Enterprise Systems Implementation and Integration**

[3 credit hours]

This course will provide students an overview of the fundamental business processes and examination of how business processes interact with SAP ERP including the system configuration and implementation. Issues. Students will gain a deep appreciation for the role of enterprise systems in managing processes from multiple functional perspectives. Also, students will work on various hands-on exercises including configuration of a fictitious company and implementation of business rules using an enterprise system.

**Prerequisites:** BUAD 2020 with a minimum grade of D- or BUAD 3050 with a minimum grade of D-

**INFS 4810 Enterprise Database Administration**

[3 credit hours]

Designed for database administrators. Covers Physical Database Design, Indexing, performance monitoring and evaluation, partitioning databases, distributed and parallel processing. Exposure will be sufficient for certification exams.

**Prerequisites:** (INFS 3770 with a minimum grade of D- and INFS 4510 with a minimum grade of D- and INFS 4620 with a minimum grade of D-)

**INFS 4940 Infs Internship**

[1-3 credit hours]

A prearranged work-study program where students specializing in computer systems, operations management or decision sciences obtain on-the-job experience while learning and applying the basic concepts and techniques of their respective areas.

**Term Offered:** Spring, Summer, Fall

**INFS 4990 Independent Study: Readings And Research**

[1-3 credit hours]

Individual student study of a topic of interest to both the faculty member and student. Students are responsible for finding a faculty member to sponsor readings and research.

**Term Offered:** Spring, Summer, Fall

# INFORMATION TECHNOLOGY (ITEC)

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## **ITEC 2100 Small Computer Systems**

[4 credit hours]

This course covers the various parts of a Personal Computer and how the hardware and software perform together. Content covers CPU development, various busses, memory devices, connections to peripheral devices, operating systems and additional topics concerned with the PC.

**Term Offered:** Fall

# INTERDISCIPLINARY (INDI)

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## **INDI 4000 Directed Research in Human Health Sciences**

[1-12 credit hours]

The Directed Research in Human Health Sciences course is designed to help undergraduate students gain real insight into specific human health science research programs by involving them in Mentor's research program and working on an ongoing project. Students learn and execute the experimental techniques required to examine the question, analyze data and draw conclusions. May be repeated for credit.

# INTERDISCIPLINARY STUDIES (IDS)

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**IDS 1000 Arts Living And Learning Forum**

[1 credit hour]

This course will provide a framework for and supplement to the activities and objectives of the UT Arts Living and Learning Community. It is required for participation in the Arts Living-Learning Community.

**Term Offered:** Spring, Fall

**IDS 2010 Interdisciplinary Studies**

[1-4 credit hours]

Multilevel designations which permit the offering of interdisciplinary courses. Participation from at least two departments is required.

Prerequisites to be determined by the constituencies contributing to each course.

**Term Offered:** Spring, Summer, Fall



# INTERNATIONAL BUSINESS (IBUS)

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## **IBUS 3150 Understanding Cultural Differences For Business**

[3 credit hours]

Course focuses on understanding cultures and managing cultural differences for competitive advantage in global business.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

## **IBUS 3600 International Management**

[3 credit hours]

An overview of management in different geographic regions of the world.

Case studies will be used to compare and contrast national models of management.

**Prerequisites:** BUAD 3030 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **IBUS 4100 Study Abroad Program**

[3 credit hours]

Program includes travel abroad, study and written report of an industry, company, or issues of interest, cultural immersion, and visits to manufacturing, service and government organizations.

**Term Offered:** Spring, Summer, Fall

## **IBUS 4180 North American Business Practices**

[3 credit hours]

This course will examine the business environment in North America and compare business practices and trade relationships between Canada, Mexico and the United States.

## **IBUS 4360 Global Business**

[3 credit hours]

Students will learn to integrate international business functions, develop strategies that respond to environmental changes, and understand the challenges faced by small, mid-sized and multinational firms operating in a global environment.

**Term Offered:** Spring, Fall

## **IBUS 4490 Global Management Systems**

[3 credit hours]

A study of how management systems in various world regions evolve in response to the emerging global context. Focus will be on analyzing the determinants of similarities and contrasts in management systems.

**Prerequisites:** BUAD 3030 with a minimum grade of D-

## **IBUS 4940 Internship In International Business II**

[3 credit hours]

A course in which the student receives practical International Business experience working in a global organization either within the U.S. or overseas.

**Term Offered:** Spring, Summer, Fall

## **IBUS 4980 Special Topics In International Business**

[3 credit hours]

Analysis of current issues in International Business.

## **IBUS 4990 Independent Study**

[1-3 credit hours]

An individually supervised study in International Business. Students must submit a proposal to be approved by a department faculty member prior to enrolling in the course.

# JAPANESE (JAPN)

## JAPN 1080 Japanese Culture And Commerce

[3 credit hours]

Study of Japanese culture and society with emphasis on business and economics. Taught in English. (not for major credit).

**Term Offered:** Summer

Core Arts & Humanities, Multicultural Non-US Diversity

## JAPN 1090 Introduction To Japanese Culture

[3 credit hours]

An introduction to principal social, artistic and literary aspects of modern Japanese culture. Taught in English. (Not for major credit.)

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity

## JAPN 1110 Elementary Japanese I

[4 credit hours]

An introduction to Japanese language and culture through aural comprehension, speaking, reading and writing. Laboratory practice required. (not for major credit)

**Term Offered:** Spring, Fall

## JAPN 1120 Elementary Japanese II

[4 credit hours]

An introduction to Japanese language and culture through listening, speaking, reading and writing. Laboratory practice required. (not for major credit)

**Prerequisites:** JAPN 1110 with a minimum grade of D- or Japanese Language Placement with a score of 1120

**Term Offered:** Spring, Fall

Core Arts & Humanities

## JAPN 2140 Intermediate Japanese I

[3 credit hours]

Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

**Prerequisites:** JAPN 1120 with a minimum grade of D- or Japanese Language Placement with a score of 2140

**Term Offered:** Spring, Fall

Core Arts & Humanities

## JAPN 2150 Intermediate Japanese II

[3 credit hours]

Further practice of the four language skills with grammar review and readings of a literary-cultural nature. Laboratory practice required. (not for major credit)

**Prerequisites:** JAPN 2140 with a minimum grade of D- or Japanese Language Placement with a score of 2150

**Term Offered:** Spring, Fall

Core Arts & Humanities

## JAPN 2190 Study Abroad

[1-3 credit hours]

The course permits beginning students of Japanese to spend time in a country where Japanese is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** JAPN 2150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## JAPN 3010 Conversation And Composition I

[3 credit hours]

Work on advanced aural comprehension, speaking, reading and writing skills through intensive work with authentic texts dealing with contemporary issues relating to Japan. Laboratory practice required.

**Prerequisites:** JAPN 2150 with a minimum grade of D- or Japanese Language Placement with a score of 3000

**Term Offered:** Fall

## JAPN 3020 Conversation And Composition II

[3 credit hours]

Further work on advanced aural comprehension, speaking, reading and writing skills through intensive work with authentic texts dealing with contemporary issues relating to Japan. Laboratory practice required. A writing-intensive course.

**Prerequisites:** JAPN 3010 with a minimum grade of D-

**Term Offered:** Spring

## JAPN 3170 Business Japanese

[3 credit hours]

An introduction to the language and practices of Japanese business and commerce.

**Term Offered:** Spring, Fall

## JAPN 3410 Survey Of Japanese Civilization I

[3 credit hours]

A study of different aspects of Japanese culture and civilization such as fine arts, history, science and philosophy.

**Prerequisites:** JAPN 2150 with a minimum grade of D-

**Term Offered:** Fall

## JAPN 3980 Special Topics in Japanese Studies

[0-6 credit hours]

Study of a selected topic in Japanese language, literature, or culture. May be repeated for credit when topic varies.

## JAPN 4010 Japanese Syntax And Stylistics I

[3 credit hours]

A review of Japanese stylistic structures through the analysis of texts and written and oral exercises in Japanese.

**Prerequisites:** JAPN 3020 with a minimum grade of D-

**Term Offered:** Fall

## JAPN 4020 Japanese Syntax And Stylistics II

[4 credit hours]

Further review of Japanese stylistic structures through the analysis of texts and written and oral exercises in Japanese. The course includes an introduction to Japanese calligraphy. A writing-intensive course.

**Prerequisites:** JAPN 4010 with a minimum grade of D-

**Term Offered:** Spring

## JAPN 4050 Advanced Conversation I

[3 credit hours]

Practice in speaking idiomatic Japanese.

**Term Offered:** Fall

## JAPN 4060 Advanced Conversation II

[3 credit hours]

Continued practice in speaking idiomatic Japanese.

**Term Offered:** Spring

**JAPN 4070 Japanese Translation**

[3 credit hours]

Practice in translation of texts from Japanese into English and English into Japanese. Subject matter area will include commerce, natural, physical and social sciences, and the humanities.

**JAPN 4190 Study Abroad**

[1-12 credit hours]

The course permits the student minoring in Japanese to spend time in a country where Japanese is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** JAPN 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**JAPN 4940 Internship in Japanese**

[0-12 credit hours]

Educational work experience, using Japanese, in a pre-approved professional field.

**JAPN 4980 Special Topics In Japanese Studies**

[1-3 credit hours]

Study of a selected topic in Japanese language, literature, or culture. May be repeated for credit when topic varies.

**Term Offered:** Spring, Summer, Fall

**JAPN 4990 Independent Study In Japanese**

[1-3 credit hours]

Independent research on special topics. May be repeated once for additional credit.

**Term Offered:** Spring, Summer, Fall

# LATIN (LAT)

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**LAT 1110 Elementary Latin I**

[4 credit hours]

Study of the fundamentals of Latin vocabulary, grammar and syntax.

Translation of elementary readings. (not for major credit)

**Term Offered:** Fall

**LAT 1120 Elementary Latin II**

[4 credit hours]

Continued study of fundamental Latin vocabulary, grammar and syntax.

Translation of elementary readings. (not for major credit)

**Prerequisites:** LAT 1110 with a minimum grade of D- or Latin Language

Placement with a score of 1120

**Term Offered:** Spring, Fall

Core Arts & Humanities

**LAT 2140 Intermediate Latin I**

[3 credit hours]

Brief review of vocabulary, grammar and syntax. Readings in Latin prose by such authors as Sallust, Livy and Cicero. (not for major credit)

**Prerequisites:** LAT 1120 with a minimum grade of D- or Latin Language

Placement with a score of 2140

**Term Offered:** Fall

Core Arts & Humanities

**LAT 2150 Intermediate Latin II**

[3 credit hours]

Intermediate level Latin poetry of the Republic and Augustan periods.

(not for major credit)

**Prerequisites:** LAT 2140 with a minimum grade of D- or Latin Language

Placement with a score of 2150

**Term Offered:** Spring, Fall

Core Arts & Humanities

# LAW AND SOCIAL THOUGHT (LST)

## LST 2010 Law And Social Thought

[3 credit hours]

This course examines the function and force of law in society in an interdisciplinary context. Students are given the opportunity to think about law in relationship to society, morality, politics, language, history and power. Readings may include perspectives from philosophy, literature, psychology, sociology, history, anthropology and opinions of the court.

**Term Offered:** Spring, Fall

## LST 2030 Cultural Geography

[3 credit hours]

A learning-through-writing course. Systematic applications of the concept of cultural to geographic themes: culture areas, cultural landscapes, culture history, cultural ecology and cultural diversity.

**Term Offered:** Spring

Multicultural Non-US Diversity

## LST 2500 Proseminar I

[1 credit hour]

For sophomore and junior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## LST 2640 Race, Class, And Gender

[3 credit hours]

Introduction to the study of race, class and gender as factors in American satisfaction.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

## LST 2700 Principles of Political Theory - WAC

[3 credit hours]

This course investigates core concepts in the history of political theory such as justice, liberty, and equality. We discuss how and why the influence of certain authors and ideas persists. Contemporary issues are interpreted using these authors and ideas in order to strengthen critical thinking skills and broaden students' thinking about politics.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## LST 2800 Cultural Anthropology

[3 credit hours]

Introduction to culture patterns and processes and their relationship to human society and language.

**Term Offered:** Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

## LST 2980 Special Topics

[3 credit hours]

Special topics in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## LST 3050 Economics Of Gender

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes: the "feminization of poverty," persistent male-female wage differential, expanding proportion of female headed households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## LST 3060 U.S. Disability History

[3 credit hours]

This course provides a historical overview of the lived experiences of people defined as disabled and changing historical definitions of disability in the region that became the United States of America. We will consider how major historical forces such as capitalism, industrialization, colonialism, and democratic ideals have impacted and been shaped by people with disabilities.

**Prerequisites:** LST 2010 with a minimum grade of D-

## LST 3070 Economics And Law

[3 credit hours]

Methodologies of Law and Economics; Legal institutions; Economic Theory of Property; Property Rights; Contract Theory; Economic Theory of Torts and Tort Law, Common Law Process; Economics of Crime and Punishment.

## LST 3080 Economics Of Crime

[3 credit hours]

Study of crime as an economic activity; costs of crime to the community; economic approach to crime reduction.

**Term Offered:** Spring, Fall

## LST 3180 Mass Communication Law

[4 credit hours]

Case studies and readings in libel, privacy, access and other legal issues arising from constitutional, judicial and administrative laws that affect mass communication.

**Term Offered:** Spring, Fall

## LST 3270 Campaign and Elections

[3 credit hours]

In this course, we examine how citizens participate in electoral politics.

Topics covered throughout the semester include candidate recruitment, voting behavior, interest groups, campaign finance, and the impact of how technologies on party mobilization.

## LST 3500 Proseminar II

[1 credit hour]

For Junior and Senior majors in LST: discussion among faculty and students of the interdisciplinary study of law and LST program development. Topics vary, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring



**LST 3510 Constitutional Law I**

[3 credit hours]

The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

**Prerequisites:** PSC 1200 with a minimum grade of D-

**Term Offered:** Fall

**LST 3520 Constitutional Law II**

[3 credit hours]

The development of the American legal system and the implications of judicial decisions affecting the institutions and powers of government, the federal system and the relationship of the individual to government.

**Prerequisites:** PSC 1200 with a minimum grade of D-

**Term Offered:** Spring, Fall

**LST 3550 Principles Of Law**

[3 credit hours]

An overview of law, legal procedures and the legal professions.

**Term Offered:** Spring, Summer, Fall

**LST 3710 Psychology And The Law**

[3 credit hours]

Emphasizes the utilization of theoretical and empirical notions of psychological science as they apply to both civil and criminal law.

**LST 3720 Philosophy Of Law**

[3 credit hours]

A study of philosophical issues raised by law such as the relation of law to morality, obligation to obey the law, paternalism, censorship and free speech.

**LST 3750 Social And Political Philosophy**

[3 credit hours]

A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.

**Term Offered:** Fall

**LST 3760 Crime And Punishment**

[3 credit hours]

A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

**Term Offered:** Fall

**LST 3770 Art and Disease - WAC**

[3 credit hours]

This WAC course considers how objects of material culture (film, photography, painting, sculpture, etc.) have intersected with disease while studying disease-related texts and histories of contagion (e.g., AIDS). Web-assisted course.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 3800 Sexual Politics**

[3 credit hours]

This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

**Term Offered:** Spring, Fall

**LST 3810 Political Geography**

[3 credit hours]

An examination of geopolitical and geostrategic issues at the nation-state and international level.

**Term Offered:** Spring, Fall

**LST 3820 Contemporary Political Ideas**

[3 credit hours]

Surveys trends in 20th century political and social thought, including critical theory, post-structuralist theory, feminism and anti-racist politics. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity politics.

**Term Offered:** Spring

**LST 3840 Visual Construction of Gender - WAC**

[3 credit hours]

This WAC course focuses on the ways in which images reflect and shape our understanding of gender. Students learn to analyze visual material to identify and articulate their cultural significance in relation to gender. Web-assisted course.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 3860 Gender And Geography**

[3 credit hours]

Traces the development and institutionalization of gender roles and how these influence spatial decisions and the formation of perceptual landscapes.

**LST 3980 Special Topics**

[3 credit hours]

Special topics relating to issues in Law and Social Thought. Topics vary by instructor, may be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4000 Global Issues in Disability Studies**

[3 credit hours]

Special focus will be on global and contemporary issues as they arise in changing political and social environments. Geopolitical area of focus may vary based on instructor expertise.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4170 Law And Society**

[3 credit hours]

Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

**LST 4490 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraze and its decline.

**LST 4530 Civil Rights**

[3 credit hours]

A study of judicial policy-making and administrative implementation of decisions affecting racial issues, freedom of expressions, national security and criminal procedures.

**LST 4550 Issues In Contemporary Law**

[3 credit hours]

Examination of contemporary approaches to the analyses of law and the judicial system with special focus on current issues facing the courts.

**Term Offered:** Spring, Fall

**LST 4570 Legal Issues**

[3 credit hours]

Topics may include abortion, three strikes sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.

**LST 4580 International Law**

[3 credit hours]

An examination of the legal status of nation states and dependencies and the rules concerning international diplomacy, treatment of persons and peaceful settlement of disputes.

**LST 4590 Law, Policy, And The Politics of Sexuality**

[3 credit hours]

This course explores law, policymaking, and public attitudes that affect gay, lesbian, bisexual and transgendered individuals in the U.S. Topics include hate crimes legislation, discrimination law, and same-sex marriage.

**Term Offered:** Spring

**LST 4640 Disability Law and Human Right**

[3 credit hours]

Explores the intersections between disability rights and human rights by examining the development, the ideological framework, and the legal contexts of disability law in the U.S. and global contexts.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4710 Criminology**

[3 credit hours]

Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

**Term Offered:** Summer

**LST 4740 Issues In Crime**

[3 credit hours]

Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

**LST 4770 Human Rights**

[3 credit hours]

What are human rights? How are human rights created? Why do states protect or repress human rights? This class answers these questions by examining both the theoretical and empirical contributions to the study of human rights from the social sciences and law. In addition, human rights best (and worst) practices are considered.

**LST 4820 Anthropology Of Religion**

[3 credit hours]

A cross-cultural approach to the description and aliases of magical and religious beliefs and practices in Asia, Africa, Latin America and Indigenous North America.

Multicultural Non-US Diversity

**LST 4830 Theory Of Public History**

[3 credit hours]

The definition, philosophy and evolution of public history as well as the current literature and debates within the field. Public history is the application of historical knowledge and methodology beyond academe.

**LST 4840 Ecotourism: Studies of the Africana World**

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Prerequisites:** LST 2010 with a minimum grade of D-

**LST 4900 Seminar In Law And Social Thought**

[3 credit hours]

Advanced seminar for the interdisciplinary study of law in society. Topics vary by instructor, may be repeated for credit. Required of LST majors.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4940 Field Experience**

[1-6 credit hours]

Community work, internship, or field study relating to law and society.

May be repeated for credit.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4980 Special Topics**

[3 credit hours]

Advanced seminar in Law and Social Thought. Topics vary by instructor, may be repeated for credit. Required of LST majors.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**LST 4990 Capstone in Law and Social Thought**

[3 credit hours]

The Capstone course in Law and Social Thought is an interdisciplinary, collaboratively taught seminar thematically organized around a topic in the study of law.

**Prerequisites:** LST 2010 with a minimum grade of D-

**Term Offered:** Spring, Fall

# LEGAL SPECIALTIES (LGL)

## LGL 1010 Introduction To Law

[3 credit hours]

The course is designed to improve oral and written communication skills through the study of contracts, real property, torts and criminal law. The course includes the structure and operation of the state and federal court systems, as well as the status and uses of paralegals.

**Term Offered:** Spring, Fall

## LGL 1150 Tort Law

[3 credit hours]

This course covers the traditional areas of tort law, including negligence, trespass, mental distress and conversion as well as the defenses to these claims. The course is taught through the case study method.

**Term Offered:** Spring

## LGL 1160 Legal Research, Writing And Case Analysis

[3 credit hours]

Designed to provide the student with an understanding of the function of the law library and to develop research techniques and legal analysis and writing skills through use of traditional law library materials and computerized legal research techniques such as Lexis and Anderson CD-ROM Law on Disk.

**Prerequisites:** LGL 1010 with a minimum grade of D-

**Term Offered:** Spring

## LGL 1720 Law Practice Management

[3 credit hours]

This course exposes students to various management structures within and the administration of the law office and other legal environments. Critical thinking will be applied to management theories and applications.

**Term Offered:** Fall

## LGL 2020 Civil Procedure

[3 credit hours]

An in-depth study of the Rules of Civil Procedure, including application of rules of fact patterns. Students will draft litigation documents including complaint, answer and discovery pleadings.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1150 with a minimum grade of D-)

**Term Offered:** Fall

## LGL 2110 Estate & Probate Administration

[3 credit hours]

Study of the common forms of wills and trusts and a survey of the fundamental principles of law applicable to each; study of the organization and jurisdiction of the probate court, analysis of the administration of estates in probate court and a review of estate and inheritance taxes.

**Term Offered:** Spring

## LGL 2120 Real Estate Transactions

[3 credit hours]

The law of real property and common types of real estate transactions and conveyances, such as deeds, land installment contracts, sales contracts and leases, with emphasis on researching, drafting and recording of documents related thereto.

**Term Offered:** Fall

## LGL 2130 Family Law

[3 credit hours]

Study of the law and practice of divorce, dissolution and all matters relating to the termination of a marriage. Students will be trained to conduct client interviews, draft pleadings and associated court forms, and calculate support under state-mandated guidelines.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Fall

## LGL 2210 Practices And Procedures In Administrative Law

[3 credit hours]

This course takes a look at the substantive and procedural aspects of various administrative law agencies with emphasis on providing skills to practice in administrative law.

**Term Offered:** Spring

## LGL 2700 Advocacy: Mock Trial

[3 credit hours]

An in-depth survey of the trial process which exposes students to each step of a trial in a hands-on fashion. The course will be taught utilizing traditional lecture, reading and actual mock trial experience.

**Term Offered:** Fall

## LGL 2940 Legal Assisting Internship

[3 credit hours]

Field experience in law offices. Students will be placed in various legal assisting positions by the program director. Students will meet for job-related seminar once a week and will work at their assigned law office for 180 hours during the semester.

**Term Offered:** Spring, Summer, Fall

## LGL 2990 Independent Study

[1-3 credit hours]

This course is used for faculty-assisted independent study in the area of legal assisting.

## LGL 3010 Law Of Business Associations

[3 credit hours]

Study of business entities: sole proprietorships, partnerships and corporations. Critical analysis of business entities, de factor and de jure entities. Students will complete articles of incorporation, bylaws and minute books.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1720 with a minimum grade of D-)

**Term Offered:** Spring

## LGL 3030 Advanced Legal Research & Writing

[3 credit hours]

Focus on advanced legal writing. Students will be challenged to master computer assisted legal research methods.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Fall

**LGL 3050 Bankruptcy Practices & Consumer Applications**

[3 credit hours]

An analysis of consumer laws including landlord-tenant relationships, consumer sales practices, uniform commercial code transactions, credit card law, garnishment, fair debt collection practices act and the United States Bankruptcy Code.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Fall

**LGL 3110 Personal Law**

[3 credit hours]

Through critical reasoning/collaborative learning, students will examine personal law issues and legal rights/responsibilities, enabling them to formulate analytical models readily transferable to legal issues in their present and future lives.

**Term Offered:** Summer

**LGL 3120 Personal Law II**

[3 credit hours]

An analysis of current legal decisions on topics such as same sex marriage, home forced entry and theology studies subsidies through analogizing/distinguishing related fact patterns and criticizing judicial exposition/logic.

**Prerequisites:** LGL 3110 with a minimum grade of D-

**LGL 3330 Litigation**

[3 credit hours]

Focus on evidence and investigation, applying critical thinking skills to actual litigation cases. Analysis of court pleadings for appropriateness and alternative mechanisms. Study of post trial and appellate matters.

**Prerequisites:** (LGL 1150 with a minimum grade of D- and LGL 2020 with a minimum grade of D-)

**Term Offered:** Spring

**LGL 3350 Alternative Dispute Resolution**

[3 credit hours]

Students will overview conflict theory, resolution and its history. Students will focus on skills necessary for alternative dispute resolution: negotiation, mediation, arbitration, summary jury trial and mini trial.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1150 with a minimum grade of D- and LGL 2020 with a minimum grade of D-)

**Term Offered:** Fall

**LGL 4030 Contract Law**

[3 credit hours]

Focus on the laws concerning creation and termination of contracts. Students will analyze contractual terms including reliance, capacity, unconscionability, conditions, assignments, third-party beneficiaries and the effect of changed circumstances.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**LGL 4130 Clinic Experience**

[3 credit hours]

Students will work in a clinical environment, such as: Court Appointed Special Advocates, the UT Center for Mediation and Legal Rights, the Toledo Bar Association's Pro Se Family Law Program.

**Prerequisites:** (LGL 1010 with a minimum grade of D- and LGL 1160 with a minimum grade of D-)

**Term Offered:** Spring

**LGL 4230 Health Care And The Law**

[3 credit hours]

An analysis of health care laws and legal issues, including treatment relationships, medical malpractice, the right to die, reproductive rights, bioethics, health care financing, public health, delivery systems and regulations.

**Term Offered:** Spring, Summer, Fall

**LGL 4330 Mediation: Topics And Techniques**

[3 credit hours]

This service learning course teaches the facilitative approach to mediating disputes. Students break down disputed issues, role play, and observe actual mediations for the peaceful and cooperative resolution of disputes.

**Term Offered:** Spring

**LGL 4940 Advanced Paralegal Internship**

[3 credit hours]

Field experience for seniors, placement within their specialty. Students meet for 1 hour seminar and work at assigned law office for 12 hours per week.

**Term Offered:** Spring, Summer, Fall

**LGL 4990 Criminal Forensics and Trial Practice**

[3 credit hours]

This course allows students to step out of the traditional classroom setting and practice hands-on skills. Students will be assigned as crime scene investigators, paralegals and attorneys and will be responsible for investigating a homicide, indicting a suspect and conducting a trial. Part I of the class involves investigative techniques for the homicide investigative process. Part II of the class exposes students to each step of the trial in a hands-on fashion.

**Prerequisites:** LGL 2700 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

# LINGUISTICS (LING)

## LING 3150 Linguistic Principles

[3 credit hours]

An introduction to modern linguistic theories about the nature and structure of language. Data from English as well as other languages will be used.

**Term Offered:** Spring, Fall

## LING 3190 Sociolinguistics

[3 credit hours]

Study of linguistic and societal concerns through empirical research; includes issues of language variation and related larger constructs such as speech community, communicative competence, dialect and language change.

**Term Offered:** Spring, Fall

## LING 4100 The History Of English

[3 credit hours]

Study of the changes that have taken place in the English language from the earliest days to the present.

**Term Offered:** Spring, Summer, Fall

## LING 4110 Old English

[3 credit hours]

Study of phonology, morphology and syntax with representative readings in verse and prose.

**Term Offered:** Fall

## LING 4120 Middle English

[3 credit hours]

Study of the phonology, morphology and syntax of Middle English, with special attention to literary and cultural background. Representative readings in verse and prose.

## LING 4150 Applied Linguistics I

[3 credit hours]

Study of methods of applied linguistics in the broad sense, including their use in studies of first and second language acquisition, language teaching, the teaching of reading and writing, and other related areas.

**Term Offered:** Fall

## LING 4170 Applied Linguistics II

[3 credit hours]

Study of theories of second/foreign language acquisition, especially, but not exclusively, as they relate to English as a Second Language.

**Term Offered:** Spring

## LING 4190 Sociolinguistics

[3 credit hours]

Combines linguistic and societal concerns through empirical research; includes issues of language variation and related larger constructs such as speech community, communicative competence, dialect and language change.

**Prerequisites:** LING 3150 with a minimum grade of D- or ENGL 3150 with a minimum grade of D-

## LING 4210 Issues In Esl Writing

[3 credit hours]

Study of key concepts in ESL writing instruction and research, characteristics of second language writers and their texts, curricular options, and responding to and assessing ESL writing.

**Term Offered:** Spring, Fall

## LING 4980 Special Topics

[3 credit hours]

An undergraduate course on a special topic. Consult Time Schedules for topic to be studied, prerequisite(s) and semester offered.

**Term Offered:** Spring, Fall

## LING 4990 Independent Study

[1-3 credit hours]

An opportunity for students to concentrate on areas of interest or weakness.

**Term Offered:** Fall



# MANAGEMENT (MGMT)

## MGMT 3630 Conflict Management: Mediation & Negotiations

[3 credit hours]

Course is designed to develop negotiation and conflict management skills. Students will learn to apply these skills in distributive and integrative negotiation situations using cases, role-plays and exercises.

**Term Offered:** Spring, Summer, Fall

## MGMT 3700 Best Practices in Diversity Leadership

[3 credit hours]

Organizations must be able to draw on their most important resource – the skills of the workforce. With the increasing richness of diversity in the world and in the workforce, organizational leaders need to expand their outlook and use creative strategies to effectively leverage diversity in the workplace.

Multicultural US Diversity

## MGMT 3770 Ethics In Leadership And Management

[3 credit hours]

The ethical dilemmas faced by organizational leaders are explored and a four-lens model of ethical decision-making is presented. Students will practice using the model to resolve common ethical dilemmas for new and experienced managers.

**Term Offered:** Spring, Summer, Fall

## MGMT 3910 Research In Management

[3 credit hours]

In-depth independent research work under the supervision of a faculty member.

**Term Offered:** Spring, Summer, Fall

## MGMT 4210 Leading And Managing Organizational Improvement

[3 credit hours]

Covers theory, practice, and techniques in identifying major organizational problems and issues and leading the organization through change efforts.

**Term Offered:** Fall

## MGMT 4250 Performance Management For Individuals And Teams

[3 credit hours]

Course examines the process and implementation of performance management systems at both individual and group levels. Performance appraisal, coaching, development planning, and performance problems will be discussed.

**Prerequisites:** HURM 3220 with a minimum grade of D-

**Term Offered:** Spring

## MGMT 4330 Leading Organizational Change and Development

[3 credit hours]

This course introduces students to the practice of analyzing, planning, implementing and evaluating organizational change and development. Students will learn to apply the relevant individual, team and organizational change interventions which contribute to greater performance and effectiveness.

**Term Offered:** Spring

## MGMT 4780 Leading and Managing People

[3 credit hours]

The basic principles, practices and dynamics of effective leadership in organizations are presented in this course. Students will have opportunities to assess their current leadership skills and identify strategies to develop their leadership capabilities through self-assessments and case studies.

**Term Offered:** Spring, Fall

## MGMT 4880 Sports Leadership

[3 credit hours]

The intent of this course is to provide the opportunity for the student to gain information and a better understanding of the various practices associated with sports leadership and management. Through cases, experiential exercises, teamwork, discussion, and exams, students will develop the skills needed to be effective leaders in the sports industry.

**Term Offered:** Fall

## MGMT 4900 Seminar On Contemporary Issues In Management

[3 credit hours]

This seminar is designed to facilitate applications of managerial skills, tools and techniques in meeting contemporary challenges in organizations.

**Prerequisites:** BUAD 3030 with a minimum grade of D-

**Term Offered:** Fall

## MGMT 4910 Research In Human Resource Management

[1-3 credit hours]

Students have the opportunity to conduct an intensive investigation in a Human Resource Management area, supervised by a departmental faculty member. A formal paper is expected at the study's end.

**Prerequisites:** (HURM 3220 with a minimum grade of D- and BLAW 3550 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## MGMT 4940 Management Internship

[1-3 credit hours]

A supervised work experience for outstanding students. The internship involves practical experience. A written report is required of the student.

# MARKETING (MKTG)

## MKTG 3130 Supply Chain Management

[3 credit hours]

Examination of the role of logistics and supply chain management in creating value and as sources of competitive advantage. Analysis of transportation, warehousing, inventory management and materials management.

**Prerequisites:** BUAD 2080 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3140 International Marketing

[3 credit hours]

Course focuses on developing an international marketing plan. Foreign country target market selection and development of a plan of action are explored in hands-on learning experience.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3170 Marketing For Non-Profit Organizations

[3 credit hours]

An introduction to marketing for non-business students. Focus is on planning and executing marketing programs in not-for-profit organizations. No credit for CBA students.

**Term Offered:** Spring

## MKTG 3260 Mobile Marketing

[3 credit hours]

A study on how firms can capitalize on the Internet as well as emerging digital and mobile marketing tools to conduct business internationally, assess e-commerce readiness in key regions, localize Web presence and contents and build business service infrastructures.

**Prerequisites:** BUAD 2080 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3280 Internet Marketing

[3 credit hours]

A study of Internet-based marketing management, including market opportunity and environmental assessment, Web presence and value propositions, and special issues concerning marketing mix design and implementation.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3690 Principles Of Marketing Communications

[3 credit hours]

Focuses on communication tools in marketing: advertising, sales promotion, specialty advertising, packaging, publicity, direct marketing and personal selling. Attention to managerial decision making, legal and ethical aspects of promotion.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3850 Buyer Behavior And Relationship Marketing

[3 credit hours]

Utilization of the behavioral sciences for the analysis of both consumer and business markets. Designing marketing programs to build strong seller-buyer relationships.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3870 Advertising Strategy

[3 credit hours]

Project-oriented course providing hands-on experience in advertising campaign design. Emphasis on strategy and application involved in advertising.

**Prerequisites:** MKTG 3690 with a minimum grade of D-

**Term Offered:** Spring

## MKTG 3880 Marketing Research And Data-Based Management

[3 credit hours]

This course addresses the fundamentals of marketing information system, marketing research and data-based marketing. Emphasis is on searching, developing and providing customer information for marketing decision making.

**Prerequisites:** BUAD 2070 with a minimum grade of D- and BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3910 Direct Marketing

[3 credit hours]

Techniques used and problems encountered in direct marketing. Analysis of the various marketing strategies, with an emphasis on promotions and media employed. Analysis of the social issues of direct marketing is included.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MKTG 3920 Sports Marketing

[3 credit hours]

This course examines the world of sports as a business and will focus on attracting the ultimate customer-sports fans in an increasingly competitive, fragmented and global service. The course will discuss the management of sports at the professional, collegiate and special event levels focusing on the role marketing plays in planning and decision-making in attracting fans and other major customer—sponsors.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

## MKTG 4130 Marketing Analysis And Decision Making

[3 credit hours]

This capstone course, which focuses on small and global firms, is designed to sharpen students' integrative decision-making abilities through case analysis and a simulation or project-based analysis experience.

**Prerequisites:** (MKTG 3880 with a minimum grade of D- and MKTG 3850 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## MKTG 4220 International Sourcing, Logistics And Transportation

[3 credit hours]

Physical supply, logistics and transportation functions are discussed within the context of a global marketplace, global business operations and international trade.

**Prerequisites:** BUAD 2080 with a minimum grade of D-

**Term Offered:** Spring, Fall

## MKTG 4540 Business Marketing

[3 credit hours]

Analysis of business markets and development of programs to market industrial business-to-business products/services.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MKTG 4940 Marketing Internship**

[1-3 credit hours]

Receive practical business experience working in an organization.

**Term Offered:** Spring, Summer, Fall

**MKTG 4980 Special Topics**

[3 credit hours]

Analysis of current issues in Marketing, International Business, or Business Economics.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MKTG 4990 Independent Study**

[1-3 credit hours]

Independent study in marketing, international business, or business economics. Student must submit a proposal to be approved by a department faculty member prior to enrolling in the course.

**Term Offered:** Spring, Summer, Fall

# MARKETING AND SALES TECHNOLOGY (MARS)

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## **MARS 1010 Marketing Principles**

[3 credit hours]

A theoretical and practical understanding of marketing issues from both a micro and macro perspective: environmental forces, ethical and social responsibility, consumer buying behavior, target market analysis, market segmentation, branding and packaging, promotion, advertising, personal selling and pricing decisions.

**Term Offered:** Spring, Fall

## **MARS 2990 Independent Study**

[1-3 credit hours]

Students will study a marketing/retail-related subject mutually agreed upon between the student and instructor. The format may include lecture, computer lab and/or practical experience.

**Term Offered:** Fall

# MATHEMATICS (MATH)

## MATH 1010 Applied Business Mathematics

[3 credit hours]

Mathematics used in solving business problems related to simple and compound interest, annuities, payroll, taxes, promissory notes, consumer credit, insurance, markup and markdown, mortgage loans, discounting, financial statement ratios and break-even analysis. Course is not applicable toward the undergraduate Mathematics major requirements.

**Term Offered:** Fall

## MATH 1180 Reasoning With Mathematics

[3 credit hours]

Reasoning with Mathematics will prepare students for an increasingly information-based society. Students will acquire the skills necessary to make rational decisions based on real data and evaluate numerical information. They will be exposed to general methods of inquiry that apply in a wide variety of settings. They will be able to critically assess arguments and make rational decisions. Finally, students will develop the ability to judge the strengths and limitations of quantitative approaches.

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

## MATH 1190 Math Modeling Study Skills

[1 credit hour]

A course to provide the study skills needed to succeed in college mathematics. Students learn and apply skills such as reading textbooks, note-taking, and analyzing tests.

**Term Offered:** Spring, Fall

## MATH 1200 Mathematical Modeling and Problem Solving

[4 credit hours]

Mathematical modeling of data using linear, quadratic, rational, and radical functions in their numerical, symbolic, graphic, and verbal forms. Problem solving methods and strategies will be emphasized. Course is not applicable toward the undergraduate Mathematics major requirements. Math core course.

**Term Offered:** Spring, Summer, Fall

Core Mathematics

## MATH 1210 Mathematics For Education Majors I

[3 credit hours]

Principles of elementary number theory, base systems, foundations of arithmetic operations, fractions, decimals and problem solving techniques. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1180 with a minimum grade of C- or MATH 1200 with a minimum grade of C- or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or ACT Math with a score of 20 or Math - Coll Algebra Placement with a score of 10 or Math - Elem Algebra Placement with a score of 12 or SAT Mathematics with a score of 480 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Fall

Core Mathematics

## MATH 1220 Mathematics For Education Majors II

[3 credit hours]

Development of integers, rational numbers and real numbers; probability, statistics, informal geometry, geometric figures and measurements.

Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1210 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

## MATH 1320 College Algebra

[3 credit hours]

Number system; elementary theory of equations and inequalities; functions and relations; exponentials and logarithms; systems of equations and topics in analytic geometry. Course is not applicable toward the undergraduate Mathematics major requirements. No credit given for students who have credit for MATH 1340.

**Prerequisites:** MATH 1200 with a minimum grade of C- or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or Math - Coll Algebra Placement with a score of 10 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

## MATH 1330 Trigonometry

[3 credit hours]

Definitions and graphs of trigonometric functions and their inverses, solving trigonometric equations, applications and topics in analytic geometry. Course is not applicable toward the undergraduate Mathematics major requirements. No credit given for students who have credit for MATH 1340.

**Prerequisites:** MATH 1320 with a minimum grade of C- or ACT Math with a score of 22 or SAT Mathematics with a score of 520 or Aleks Math Placement Test with a score of 61 or Aleks Math Placement Retest with a score of 61 or Math - Coll Algebra Placement with a score of 15 or MATH SECTION SCORE with a score of 550

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

## MATH 1340 College Algebra And Trigonometry

[0-5 credit hours]

Functions and graphs, exponential and logarithmic functions, trigonometric functions and applications, systems of equations and topics in analytic geometry. No credit for students who have credit for MATH 1320 or 1330.

**Prerequisites:** ACT Math with a score of 24 or SAT Mathematics with a score of 560 or Aleks Math Placement Test with a score of 68 or Aleks Math Placement Retest with a score of 68 or (Math - Coll Algebra Placement with a score of 12 and Math - Trigonometry Placement with a score of 9) or MATH SECTION SCORE with a score of 580

**Term Offered:** Spring, Fall

Core Mathematics, Trans Mod Mathematics



**MATH 1730 Calculus with Applications to Business and Finance**

[0-5 credit hours]

An introduction to differential and integral calculus. Topics include limits, derivatives, maxima/minima, indefinite and definite integrals with an emphasis on business applications and technology use.

**Prerequisites:** MATH 1320 with a minimum grade of C- or MATH 1340 with a minimum grade of C- or Math - Coll Algebra Placement with a score of 15 or ACT Math with a score of 24 or SAT Mathematics with a score of 560 or Aleks Math Placement Test with a score of 68 or Aleks Math Placement Retest with a score of 68 or MATH SECTION SCORE with a score of 580

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1750 Calculus For The Life Sciences With Applications I**

[0-4 credit hours]

Definitions of trigonometric functions, solving trigonometric equations, functions, limits and derivatives, exponential and logarithmic functions, and applications. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1320 with a minimum grade of C- or MATH 1340 with a minimum grade of C- or Math - Coll Algebra Placement with a score of 15 or ACT Math with a score of 24 or SAT Mathematics with a score of 560 or Aleks Math Placement Test with a score of 68 or Aleks Math Placement Retest with a score of 68 or MATH SECTION SCORE with a score of 580

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1760 Calculus For The Life Sciences With Applications II**

[0-3 credit hours]

Indefinite and definite integrals, probability, vectors, least squares, differential equations. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1750 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1830 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1830 Calculus I For Mathematicians, Scientists And Educators**

[4 credit hours]

Limits, differentiation, Fundamental Theorem of Calculus, Mean Value Theorem, curve sketching, maxima/minima, definite and indefinite integrals, applications. The emphasis is on the rigorous aspects and foundational ideas of calculus. Of interest to students requiring a conceptual understanding of calculus. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** (MATH 1340 with a minimum grade of C- or Aleks Math Placement Test with a score of 76 or Aleks Math Placement Retest with a score of 76) or (MATH 1320 with a minimum grade of C- or ACT Math with a score of 27 or SAT Mathematics with a score of 610 or MATH SECTION SCORE with a score of 630 or Math - Coll Algebra Placement with a score of 15) and (MATH 1330 with a minimum grade of C- or Math - Trigonometry Placement with a score of 12)

**Term Offered:** Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1840 Calculus II For Mathematicians, Scientists And Educators**

[4 credit hours]

Applications and techniques of integration, polar coordinates and calculus of plane curves, infinite series and Taylor series, vectors and geometry of space. The emphasis is on the rigorous aspects and foundational ideas of calculus. Of interest to students requiring a conceptual understanding of calculus.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1920 with a minimum grade of C-

**Term Offered:** Spring, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1850 Single Variable Calculus I**

[0-4 credit hours]

Limits, differentiation, Fundamental Theorem of Calculus, curve sketching, maxima/minima, definite and indefinite integrals, applications. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** (MATH 1340 with a minimum grade of C- or Aleks Math Placement Test with a score of 76 or Aleks Math Placement Retest with a score of 76) or (MATH 1320 with a minimum grade of C- or ACT Math with a score of 27 or SAT Mathematics with a score of 610 or MATH SECTION SCORE with a score of 630 or Math - Coll Algebra Placement with a score of 15) and (MATH 1330 with a minimum grade of C- or Math - Trigonometry Placement with a score of 12)

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1860 Single Variable Calculus II**

[0-4 credit hours]

Applications and techniques of integration, polar coordinates and calculus of plane curves, infinite series and Taylor series, vectors and geometry of space.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1890 Elementary Linear Algebra**

[3 credit hours]

Matrix algebra, systems of linear equations, determinants, vector spaces, linear transformations, eigenvalues and eigenvectors, applications, additional topics chosen from Google's page rank algorithm, Digital Image Compression, and others.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Spring, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 1980 Topics In Mathematics**

[1-4 credit hours]

Selected topics in mathematics.

**Term Offered:** Fall

**MATH 2190 Foundations of Mathematics**

[3 credit hours]

This course lays the logical and set-theoretic foundations for upper level mathematics courses. Topics include: logical connectives, quantifiers; techniques of proof; set operations; functions; equivalence classes; partitions, cardinality, natural numbers, rationals, real numbers.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C-

**Term Offered:** Spring

**MATH 2450 Calculus For Engineering Technology I**

[0-4 credit hours]

Differential calculus of algebraic and trigonometric functions, including limits, curve sketching, motion, maxima/minima, related rates, integral calculus of algebraic functions.

**Prerequisites:** (MATH 1340 with a minimum grade of C- or Aleks Math Placement Test with a score of 76 or Aleks Math Placement Retest with a score of 76) or (MATH 1320 with a minimum grade of C- or ACT Math with a score of 27 or SAT Mathematics with a score of 610 or MATH SECTION SCORE with a score of 630 or Math - Coll Algebra Placement with a score of 15) and (MATH 1330 with a minimum grade of C- or Math - Trigonometry Placement with a score of 12)

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 2460 Calculus For Engineering Technology II**

[0-4 credit hours]

Transcendental functions, methods of integration, applications of the integral, polar coordinates, vectors and vector operation, lines and planes, parametric equations.

**Prerequisites:** MATH 2450 with a minimum grade of C- or MATH 1850 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 2600 Introduction To Statistics**

[3 credit hours]

An introduction to descriptive and inferential statistical methods including point and interval estimation, hypothesis testing and regression. No credit allowed if taken after MATH 3610 or 4680; credit not allowed for both MATH 2600 and 2630. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1200 with a minimum grade of C- or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or Math - Coll Algebra Placement with a score of 10 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Summer, Fall

Core Mathematics, Trans Mod Mathematics

**MATH 2620 Discrete Probability**

[3 credit hours]

Sample spaces, events, counting techniques, probability distributions and their applications. No credit if taken after 4680. Course is not applicable toward the undergraduate Mathematics major requirements.

**Prerequisites:** MATH 1180 with a minimum grade of C- or MATH 1200 with a minimum grade of C- or Math - Coll Algebra Placement with a score of 10 or Math - Elem Algebra Placement with a score of 12 or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring

**MATH 2640 Statistics for Applied Science**

[3 credit hours]

Introduction to statistical methods. Modeling relationships between variables. Basic concepts in probability. Introduction to design of experiments, surveys and observational studies. Overview of statistical procedures used in applied science literature.

**Prerequisites:** MATH 1200 with a minimum grade of C- or ACT Math with a score of 20 or SAT Mathematics with a score of 480 or Aleks Math Placement Test with a score of 46 or Aleks Math Placement Retest with a score of 46 or Math - Coll Algebra Placement with a score of 10 or MATH SECTION SCORE with a score of 510

**Term Offered:** Spring, Fall

**MATH 2850 Elementary Multivariable Calculus**

[4 credit hours]

Geometry of functions of several variables, partial differentiation, multiple integrals, vector algebra and calculus (including Theorems of Green, Gauss and Stokes), and applications.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**MATH 2860 Elementary Differential Equations**

[3 credit hours]

An introduction to the analysis and solution of ordinary differential equations with emphasis on the fundamental techniques for solving linear differential equations.

**Prerequisites:** MATH 2850 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**MATH 2890 Numerical Methods And Linear Algebra**

[3 credit hours]

Topics include: matrices, characteristic roots, solution of linear and nonlinear equations, curve fitting, integration, differentiation and numerical solution of ordinary differential equations. MATLAB is introduced and used to analyze problems. Additional topics are chosen from Google's page rank algorithm, Digital Image Compression, and others.

**Prerequisites:** MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1920 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**MATH 3000 Symbolic Logic**

[3 credit hours]

A study of propositional and predicate logic, the symbolic techniques used to evaluate deductive arguments. Topics may include computability, set theory, Bayesianism and other formal systems with mathematical or philosophical relevance.

**Prerequisites:** MATH 1180 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 3190 Introduction To Mathematical Analysis**

[3 credit hours]

This course is intended to introduce students to mathematical analysis. The focus will be on learning to write clear, rigorous proofs. Topics include set theory and logic, the real number system and its topology, sequences, limits and continuity.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3200 Number Theory**

[3 credit hours]

Divisibility, congruences, diophantine equations, numerical functions, quadratic reciprocity.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 3320 Introduction To Abstract Algebra**

[3 credit hours]

Sets and mappings, integers, groups, rings and applications.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Spring

**MATH 3440 Fundamentals Of Modern Geometry I**

[3 credit hours]

Euclidean geometry from a modern viewpoint, constructions and transformations. Primarily for students in secondary education.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3450 Fundamentals Of Modern Geometry II**

[3 credit hours]

Euclidean geometry from a modern viewpoint, constructions and transformations. Primarily for students in secondary education.

**Prerequisites:** MATH 3440 with a minimum grade of C-

**Term Offered:** Spring

**MATH 3510 History Of Mathematics**

[3 credit hours]

Contributions to the development of mathematics by various groups and individuals from the earliest history to the present, with special emphasis on the elementary branches: arithmetic, algebra, geometry and calculus.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3610 Statistical Methods I**

[3 credit hours]

Basic probability, sampling, descriptive statistics, statistical inference, regression, correlation, analysis of variance, goodness of fit, model formulation and testing.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 3620 Statistical Methods II**

[3 credit hours]

Multiple regression, analysis of covariance, standard experimental designs, contingency tables, nonparametric methods and methods for sample surveys.

**Prerequisites:** MATH 3610 with a minimum grade of C-

**Term Offered:** Spring

**MATH 3920 Junior Readings**

[1-3 credit hours]

Selected subjects in mathematics of special interest to students and the professor.

**Term Offered:** Spring, Summer, Fall

**MATH 4300 Linear Algebra I**

[3 credit hours]

Theory of vector spaces and linear transformations, including such topics as matrices, determinants, inner products, eigenvalues and eigenvectors, and rational and Jordan canonical forms.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4310 Linear Algebra II**

[3 credit hours]

Hermitian and normal operators, multilinear forms, spectral theorem and other topics.

**Prerequisites:** MATH 4300 with a minimum grade of C-

**MATH 4330 Abstract Algebra I**

[3 credit hours]

Arithmetic of the integers, unique factorization and modular arithmetic; group theory including normal subgroups, factor groups, cyclic groups, permutations, homomorphisms, the isomorphism theorems, abelian groups and p-groups.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4340 Abstract Algebra II**

[3 credit hours]

Ring theory including integral domains, field of quotients, homomorphisms, ideals, Euclidean domains, polynomial rings, vector spaces, roots of polynomials and field extensions.

**Prerequisites:** MATH 4330 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4350 Applied Linear Algebra**

[3 credit hours]

Matrices, systems of equations, vector spaces, linear transformations, determinants, eigenvalues and eigenvectors, singular value decomposition, pseudoinverses, rank, numerical methods and applications to various areas, e.g., the Google Matrix or Digital Image Compression or others.

**Prerequisites:** MATH 1890 with a minimum grade of C- or MATH 2890 with a minimum grade of C-

**Term Offered:** Spring, Summer

**MATH 4380 Discrete Structures And Analysis Of Algorithms**

[3 credit hours]

Discrete mathematical structures for applications in computer science such as graph theory, combinatorics, and groups theory, asymptotics, recurrence relations and analysis of algorithms.

**Prerequisites:** MATH 3320 with a minimum grade of C- or MATH 4330 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4450 Introduction To Topology I**

[3 credit hours]

Metric spaces, topological spaces, continuous maps, bases and subbases, closure and interior operators, products, subspaces, sums, quotients, separation axioms, compactness and local compactness.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4460 Introduction To Topology II**

[3 credit hours]

Connectedness and local connectedness, convergence, metrization, function spaces. The fundamental groups and its properties, covering spaces, classical applications, e.g. Jordan Curve Theorem, Fundamental Theorem of Algebra, Brouwer's Fixed Point Theorem.

**Prerequisites:** (MATH 4450 with a minimum grade of C- and MATH 3320 with a minimum grade of C-) or (MATH 4450 with a minimum grade of C- and MATH 4330 with a minimum grade of C-)

**Term Offered:** Spring

**MATH 4540 Classical Differential Geometry I**

[3 credit hours]

Smooth curves in Euclidean space including the Frenet formulae. Immersed surfaces with the Gauss map, principal curvatures and the fundamental forms. Special surfaces including ruled surfaces and minimal surfaces. Intrinsic Geometry including the Gauss Theorem Egregium.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**MATH 4550 Classical Differential Geometry II**

[3 credit hours]

Tensors, vector fields, and the Cartan approach to surface theory, Bonnet's Theorem and the construction of surfaces via solutions of the Gauss Equation. Geodesics parallel transport, and Jacobi Fields. Theorems of a global nature such as Hilbert's Theorem or the Theorem of Hopf-Rinow.

**Prerequisites:** MATH 4540 with a minimum grade of C-

**MATH 4600 Advanced Statistical Methods I**

[3 credit hours]

Basics of descriptive statistics, study designs and statistical inference. Properties of, and assumptions required for, inference for means, variances, and proportions from one and two-sample paired and unpaired studies. Introduction to ANOVA with multiple comparisons. Model assessment and diagnostics. Statistical software will be employed. Opportunities to apply procedures to real data. Emphasis placed on the foundations to approaches in introductory statistics.

**Prerequisites:** MATH 2600 with a minimum grade of D- or MATH 2640 with a minimum grade of D- or MATH 3610 with a minimum grade of D- or MATH 4690 with a minimum grade of D-

**Term Offered:** Fall

**MATH 4610 Applications Of Statistics II**

[3 credit hours]

Continuation of Applications of Statistics I.

**Prerequisites:** MATH 4600 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4620 Theory Of Interest**

[3 credit hours]

This course covers the measurement of interest, certain annuities, yield rates, amortization and sinking funds, bonds and other securities and application of interest theory.

**Prerequisites:** MATH 1840 with a minimum grade of C- or MATH 1860 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 4640 Statistical Computing**

[3 credit hours]

Modern statistical computing, including programming tools, modern programming methodologies, design of data structures and algorithms, numerical computing and graphics. Additional topics selected from simulation studies, rejection sampling, importance sampling, Monte Carlo integration, and bootstrapping.

**Prerequisites:** MATH 3610 with a minimum grade of C- or MATH 4600 with a minimum grade of C- or MATH 4690 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4680 Introduction To Theory Of Probability**

[3 credit hours]

Probability spaces, random variables, probability distributions, moments and moment generating functions, limit theorems, transformations and sampling distributions.

**Prerequisites:** MATH 2850 with a minimum grade of C-

**Term Offered:** Summer, Fall

**MATH 4690 Introduction To Mathematical Statistics**

[3 credit hours]

Sampling distributions, point and interval estimation, hypothesis testing, regression and analysis of variance.

**Prerequisites:** MATH 4680 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4710 Methods Of Numerical Analysis I**

[3 credit hours]

Floating point arithmetic; polynomial interpolation; numerical solution of nonlinear equations; Newton's method. Likely topics include: numerical differentiation and integration; solving systems of linear equations; Gaussian elimination; LU decomposition; Gauss-Seidel method.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 4720 Methods Of Numerical Analysis II**

[3 credit hours]

Likely topics include: Computation of eigenvalues and eigenvectors; solving systems of nonlinear equations; least squares approximations; rational approximations; cubic splines; fast Fourier transforms; numerical solutions to initial value problems; ordinary and partial differential equations.

**Prerequisites:** MATH 4710 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4740 Advanced Applied Mathematics I**

[3 credit hours]

Series and numerical solutions to ordinary differential equations, special functions, orthogonal functions, Sturm-Liouville problems, self-adjointness, vector analysis.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4750 Advanced Applied Mathematics II**

[3 credit hours]

Continuation of vector analysis, introduction to complex analysis, partial differential equations, Fourier series and integrals.

**Prerequisites:** MATH 4740 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4760 Actuarial Mathematics I**

[3 credit hours]

Survival distributions and life tables, life insurance, life annuities, benefit premiums and reserves and multiple life functions are some topics covered in this course.

**Prerequisites:** MATH 4680 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4770 Actuarial Mathematics II**

[3 credit hours]

Continuation of Actuarial Mathematics I. Multiple decrement models, collective risk models and applications of risk theory.

**Prerequisites:** MATH 4760 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4780 Advanced Calculus**

[3 credit hours]

Extrema for functions of one or more variables, Lagrange multipliers, indeterminate forms, inverse and implicit function theorems, uniform convergences, power series, transformations, Jacobians, multiple integrals.

**Prerequisites:** MATH 2850 with a minimum grade of C-

**MATH 4800 Ordinary Differential Equations**

[3 credit hours]

Modern theory of differential equations; transforms and matrix methods; existence theorems and series solutions; and other selected topics.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring, Fall

**MATH 4810 Partial Differential Equations**

[3 credit hours]

First and second order equations; numerical methods; separation of variables; solutions of heat and wave equations using eigenfunction techniques; and other selected topics.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4820 Introduction To Real Analysis I**

[3 credit hours]

The real number system; continuity and differentiability of functions; convergence of sequences and series; applications.

**Prerequisites:** MATH 2190 with a minimum grade of C- or MATH 3190 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4830 Introduction To Real Analysis II**

[3 credit hours]

Riemann Integral; limits of functions; elementary metric space theory including compactness, connectedness and completeness. Optional topics include differentiable functions on  $\mathbb{R}^n$ ; the Implicit and Inverse Function Theorems.

**Prerequisites:** MATH 4820 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4860 Calculus Of Variations And Optimal Control I**

[3 credit hours]

Conditions for an extrema (Euler's equations, Erdman corner conditions, conditions of Legendre, Jacobi, and Weierstrass, fields of extremals, Hilbert's invariant integral); Raleigh-Ritz method; isoperimetric problems; Lagrange, Mayer-Bolza problems. Recommended: MATH 4820.

**Prerequisites:** MATH 1890 with a minimum grade of C- or MATH 2890 with a minimum grade of C-

**Term Offered:** Fall

**MATH 4870 Calculus Of Variations And Optimal Control II**

[3 credit hours]

Pontryagin's maximum principle; necessary and sufficient conditions for optimal control, controllability, time optimal control, existence of optimal controls, relationship to the calculus of variations.

**Prerequisites:** MATH 4860 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4880 Complex Variables**

[3 credit hours]

Analytic functions; Cauchy's theorem; Taylor and Laurent series; residues; contour integrals; conformal mappings, analytic continuation and applications.

**Prerequisites:** MATH 2860 with a minimum grade of C-

**Term Offered:** Spring

**MATH 4900 Senior Seminar**

[1-3 credit hours]

Seminar on a topic not usually covered in a course. Library research and paper to be expected.

**Term Offered:** Spring, Summer, Fall

**MATH 4920 Senior Readings**

[1-3 credit hours]

Selected subjects in mathematics of special interest to students and the professor. (By arrangement with professor and student.)

**Term Offered:** Spring, Summer, Fall



**MATH 4940 Internship in the Mathematical Sciences**

[3 credit hours]

MATH 4940 Co-Op Experience [3 credit hours] Approved internship experience. Course may be repeated for credit with departmental permission. Terms Offered: Spring, Summer, Fall

**Term Offered:** Spring, Summer, Fall

**MATH 4960 Actuarial Science Problem Seminar**

[1-3 credit hours]

The primary activity will be student solution and presentation of problems of a type given on actuarial exams.

**Term Offered:** Spring, Fall

# MECH, IND, MFG ENGINEERING (MIME)

## **MIME 1000 Orientation To Me & Ie**

[0-3 credit hours]

The mechanical engineering profession is discussed with emphasis on career opportunities. Orientation to the university campus, study skills and time management. Word processing, spreadsheets, e-mail, design projects, and MATLAB programming are studied.

**Term Offered:** Summer, Fall

## **MIME 1010 Professional Development**

[1 credit hour]

Social protocol and ethics in industry are reviewed. Resume writing and interview skills are developed. Course assists in preparing the student for the co-op experience in industry.

**Prerequisites:** MIME 1000 with a minimum grade of D-

**Term Offered:** Spring, Summer

## **MIME 1100 Introduction To Cad**

[0-2 credit hours]

Techniques for visualization and representation of machine components using solid modeling and projection. Section views, orthographic projection, dimensioning and tolerancing. CAD techniques for solving vector problems.

**Term Offered:** Summer, Fall

## **MIME 1650 Materials Science & Engineering**

[0-3 credit hours]

Engineering properties of materials, the effect of atomic bonding and crystalline structure on the mechanical properties of metals, ceramics and polymers. Common measurement, testing and comparison techniques to aid in selection of materials. Laboratory experiences include compressive and tensile strength testing, the effects of heat upon strength, hardness and micro-structure, the effects of combining certain materials in a composite to improve overall mechanical properties.

**Prerequisites:** CHEM 1230 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **MIME 2000 Measurements Laboratory**

[0-2 credit hours]

How to write engineering laboratory reports. Statistical analysis of experimental data, uncertainty analysis, general characteristics of measurement systems, static and dynamic measurements, computer data acquisition, applications to thermal, mechanical and electrical systems.

**Prerequisites:** EECS 2340 with a minimum grade of D- and (ENGL 1930 with a minimum grade of D- or ENGL 2950 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## **MIME 2300 Engineering Dynamics**

[3 credit hours]

Kinematics of particles and rigid bodies. Thorough study of kinetics of particles and rigid bodies using Newton's laws of motion, work-energy methods, and impulse and momentum methods.

**Prerequisites:** CIVE 1150 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **MIME 2600 Engineering Economics**

[3 credit hours]

The study of micro-economic and macro-economic theories. Methods of economic analysis, including the time value of money, are described. Economic decision criteria are used to select best alternatives with emphasis in engineering. Impact of economic decisions on various sectors of society are discussed.

**Term Offered:** Spring, Fall

## **MIME 2650 Manufacturing Processes**

[0-3 credit hours]

Manufacturing processes discussed include metal casting and forming such as forging, rolling, extrusion, stamping and drawing. Metal cutting processes such as turning, boring, drilling, milling, sawing and broaching are discussed. Polymer processes including injection molding and extrusion as well as ceramic part production are covered. Laboratory experiences include creating parts using many of these processes.

**Prerequisites:** MIME 1650 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **MIME 2700 Applied Measure & Instrument**

[4 credit hours]

A hands on introduction to engineering measurement methods and instrumentation, including electrical circuits, sensors, actuators, data acquisition, and system response.

**Prerequisites:** PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **MIME 2920 Special Projects**

[1-3 credit hours]

A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for students interested in mechanical, industrial or manufacturing engineering early in their undergraduate program. Instructor will specify scope of project to correspond to credit hours.

**Term Offered:** Spring, Summer, Fall

## **MIME 2980 Special Topics**

[1-3 credit hours]

A special topic at the undergraduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member. Credits will correspond to regular class meetings of one lecture hour per week per credit hour.

**Term Offered:** Fall

## **MIME 2990 Independent Study**

[1-3 credit hours]

An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for engineering students early or midway through their program of study. Instructor will specify scope of project to correspond to credit hours.

## **MIME 3200 Introduction to Project Engineering**

[3 credit hours]

Topics include: engineering economics; societal, legal and ethical concerns; project scheduling; and designing for quality as well as matching client desires with product attributes.

**Term Offered:** Spring, Summer, Fall

**MIME 3300 Design And Analysis Of Mechanical Systems**

[3 credit hours]

Design and analysis of mechanisms, gear trains, planetary gear trains, cam-and-follower devices with application to mechanical systems. Motion, force, torque and vibration analysis. Balancing of rotating and reciprocating components in machines.

**Prerequisites:** MIME 2300 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 3310 Mechanical Design I**

[3 credit hours]

Applications of mechanics of materials to analysis and design of mechanical components; introduction to fracture mechanics; applications of failure theories to design of machine elements subjected to static and cyclic loadings.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and MIME 1650 with a minimum grade of D-)

**Corequisites:** MIME 3330

**Term Offered:** Spring, Summer, Fall

**MIME 3320 Mechanical Design II**

[3 credit hours]

Application of failure theories in static and fatigue loading to the design and analysis of mechanical elements including fasteners, power screws, welded joints, springs, bearings, gears, clutches, brakes and shafts.

**Prerequisites:** MIME 3310 with a minimum grade of C-

**Term Offered:** Spring, Summer, Fall

**MIME 3330 Mechanics Laboratory**

[0-1 credit hours]

This laboratory course consists of experiments in strength of materials and stress analysis. Experiments include stress analysis of straight and curved beams, analysis of torsion and combined stresses in shafts, stress concentrations, and determination of mechanical properties from tension tests and fatigue tests.

**Corequisites:** MIME 3310

**Term Offered:** Spring, Summer, Fall

**MIME 3360 Vibration Laboratory**

[0-1 credit hours]

This laboratory course will be taken concurrently with Mechanical Vibration and consists of experiments to determine the natural frequency of one degree of freedom systems, free and forced vibrations of lumped parameter systems, mode shapes and natural frequencies of multidegree of freedom systems, and mode shapes and natural frequencies of torsional vibration systems.

**Corequisites:** MIME 3370

**Term Offered:** Spring, Summer, Fall

**MIME 3370 Mechanical Vibration**

[3 credit hours]

Modeling mechanical systems, mechanical elements, equations of motion for single-DOF and multi-DOF systems, linearization of equations of motion, free and forced response, electrical systems, frequency response, feedback control systems.

**Prerequisites:** MIME 2300 with a minimum grade of D- and MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Corequisites:** MIME 3360

**Term Offered:** Spring, Summer, Fall

**MIME 3380 Modeling and Control of Engineering Systems**

[3 credit hours]

Physical modeling and feedback principles are applied for control of mechanical systems. Transient response, root locus and frequency response principles are applied to the control of basic mechanical and electrical systems.

**Prerequisites:** MIME 3370 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 3400 Thermodynamics I**

[3 credit hours]

Introduction to thermal sciences with an emphasis on the first and second law of thermodynamics. Topics include conservation of energy for closed and open systems, thermodynamic properties and cycles and entropy production.

**Prerequisites:** (MATH 3860 with a minimum grade of D- or MATH 2860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-) and PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MIME 3410 Thermodynamics II**

[3 credit hours]

Review of open and closed systems in thermodynamics, the Carnot principle and cycle efficiency concepts. Application to gas and vapor power cycles and refrigeration cycles. Thermodynamic property relations, gaseous mixtures and combustion.

**Prerequisites:** MIME 3400 with a minimum grade of D-

**Corequisites:** MIME 3420

**Term Offered:** Spring, Summer, Fall

**MIME 3420 Fluids Laboratory**

[0-1 credit hours]

This laboratory course is to be taken with Fluid Mechanics and Thermodynamics II to illustrate the concepts in those courses.

Experiments include fluid statics, forces on a submerged surface, center of pressure, manometers, surface tension, flow visualization, Bernoulli's equation, control volume analysis, viscous flow in pipes, flow over bodies, turbomachinery, and thermodynamic cycles.

**Corequisites:** MIME 3410, MIME 3430

**Term Offered:** Spring, Summer, Fall

**MIME 3430 Fluid Mechanics**

[3 credit hours]

Fluid mechanics for mechanical engineers. Topics include fluid statics and dynamics, equations of motion, dimensional analysis, boundary layer theory, flow in pipes, turbulence, fluid machinery, potential flow, CFD and aerodynamics.

**Prerequisites:** MIME 3400 with a minimum grade of D-

**Corequisites:** MIME 3420

**Term Offered:** Spring, Summer, Fall

**MIME 3440 Heat Transfer**

[3 credit hours]

A comprehensive study of conduction, convection and radiation. Derivation and solution of differential equations related to heat transfer. Analysis of forced and free convection and heat exchangers. Dimensional analysis related to heat transfer.

**Prerequisites:** MIME 3430 with a minimum grade of D-

**Corequisites:** MIME 3450

**Term Offered:** Spring, Summer, Fall

**MIME 3450 Energy Laboratory**

[0-1 credit hours]

This laboratory course is to be taken with Heat Transfer to illustrate the concepts in this course. Experiments include Fourier's Law, cooling of fins/rods, determination of free and forced convection heat transfer coefficients, heat exchangers, Stefan Boltzmann Law, surface emission, surface reflection.

**Corequisites:** MIME 3440**Term Offered:** Spring, Summer, Fall**MIME 3780 Engineering Management**

[3 credit hours]

The development of the fundamentals required in an engineering and manufacturing environment where technical competency is considered standard and an appreciation of the human behavioral responses to managerial policies and rules is essential. This course covers the basics of planning organizing, leading and control from the subordinates' as well as the manager's perspective.

**Term Offered:** Fall**MIME 3940 Co-Op Experience**

[1 credit hour]

Students in the Industrial and Mechanical Engineering programs are to enroll in this course during each of their approved Co-Op experiences.

**Prerequisites:** MIME 1010 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MIME 3950 Co-op Experience**

[1 credit hour]

Approved co-op work experience beyond third required co-op experience. Course may be repeated.

**Prerequisites:** MIME 3940 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MIME 4000 Engineering Statistics I**

[3 credit hours]

This course introduces the student to the areas of probability theory and statistical inferences. Topics include sample spaces, the concepts of random variables, probability distributions; functions of random variables, transformation of variables, moment generating functions, sampling and estimation theory; T, F and chi-square distribution.

**Prerequisites:** MATH 2850 with a minimum grade of D- or MATH 2950 with a minimum grade of D-**Term Offered:** Spring, Summer, Fall**MIME 4040 Modern Manufacturing Methods**

[3 credit hours]

This course provides an overview of the philosophy, design and management of production factories throughout the world. This course explores the evolution and revolution of manufacturing since the 1960's and the numerous philosophical changes that have shaped the factory of today. The course examines the fundamental design of the factory in an effort to meet the demands of customers, culture of the organization, competitive situation, and pressures of marketing and management.

**Term Offered:** Fall**MIME 4060 Manufacturing Engineering**

[3 credit hours]

Students apply machine tools and fabrication processes to optimize the manufacture of a product. Emphasis is on engineering design integrated with economic principles and fabricating methods.

**Prerequisites:** MIME 2650 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-**Term Offered:** Summer, Fall**MIME 4070 Computer-Aided Manufacturing**

[3 credit hours]

The study of machining processes using numerical control machine tools and controllers. Development of programs to machine parts on mills and lathes. Conversion of CAD models to programs through software interfaces.

**Prerequisites:** MIME 2650 with a minimum grade of D-**Term Offered:** Fall**MIME 4080 Operations Research I**

[3 credit hours]

This course focuses on the mathematical methods of Operations Research and their applications in engineering. Topics include the optimal solution of deterministic and stochastic mathematical models, modeling process, linear programming, the simplex method, duality theory and sensitivity analysis.

**Prerequisites:** MIME 4000 with a minimum grade of D- and MATH 2860 with a minimum grade of D-**MIME 4100 Manufactur Systems Simulation**

[3 credit hours]

Discrete and continuous simulation models are used to study queuing, networks, manufacturing and related engineering systems. Simulation languages and animation are covered. Statistical inference is used to draw conclusions and to identify the best system.

**Prerequisites:** MIME 2650 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-**Term Offered:** Spring**MIME 4180 Legal Aspects of Engineering**

[3 credit hours]

This course offers an introduction to legal topics for engineers. Topics include: contracts, negligence, products liability, patents and copyright, employment law, criminal law, environmental law, and business law.

**Term Offered:** Spring**MIME 4200 Senior Design Projects**

[3 credit hours]

Students work in teams using knowledge gained in earlier courses to solve real design, manufacturing and operational problems relevant to industry. Oral and written communications with participating companies as well as teamwork are stressed. Other topics include patents, product liability, safety, ethics and design for manufacturing.

**Prerequisites:** (MIME 3200 with a minimum grade of D- and MIME 3320 (may be taken concurrently) with a minimum grade of D- and MIME 3440 (may be taken concurrently) with a minimum grade of D-)**Term Offered:** Spring, Fall

**MIME 4230 Dynamics Of Human Movement**

[3 credit hours]

The goal of this course is for students to be able to describe motions of the human body. Three-dimensional analysis and measurements of human body movements including kinematics, kinetics and energetics of human gait, anthropometry and application to bioengineering and orthopedics will be presented. Euler angles and the screw axis method will be used to describe three-dimensional motions.

**Prerequisites:** MIME 2300 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4240 Experimental Methods in Orthopedic Biomechanics**

[3 credit hours]

Experimental techniques used in orthopedics and in the study of the musculoskeletal system including mechanical testing, experimental and analytical methods for stress analysis, strain gauges, methods used in human motion analysis to include motion capture, force plates and EMG.

**Prerequisites:** MIME 1650 with a minimum grade of D- and CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4280 Cad-Finite Element Methods**

[3 credit hours]

An introduction to the basic concepts of the finite element method. Topics include engineering analysis of continuous systems, numerical solutions of boundary value problems, method of weighted residuals and the principle of minimum potential energy, applications of commercially available finite element programs.

**Prerequisites:** MIME 3320 with a minimum grade of D-

**Term Offered:** Summer, Fall

**MIME 4300 Advanced Mechanics Of Materials**

[3 credit hours]

Theory of elasticity, plane stress and plane problems, yield criteria and failure theories, bending of beams, energy methods, curved flexural members, unsymmetric bending, torsion, shear center and axisymmetrically loaded members.

**Prerequisites:** CIVE 1160 with a minimum grade of D- and MATH 2860 with a minimum grade of D- or MATH 3860 with a minimum grade of D- or MATH 3820 with a minimum grade of D-

**Term Offered:** Fall

**MIME 4310 Mechanics Of Composite Materials**

[3 credit hours]

Review of elasticity of anisotropic solids, determination of mechanical properties of fiber-reinforced lamina, analysis and performance of laminated composites.

**Prerequisites:** (CIVE 1160 with a minimum grade of D- and MIME 1650 with a minimum grade of D-)

**Term Offered:** Spring

**MIME 4320 Fatigue Of Materials & Structures**

[3 credit hours]

Fatigue design methods; fatigue fracture mechanisms; cyclic deformation behavior and material cyclic properties; stress-based, and fracture mechanics-based methodologies to fatigue life prediction of smooth and notched members subjected to constant or variable amplitude loadings.

**Prerequisites:** CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring

**MIME 4410 Alternative Energy**

[3 credit hours]

This course focuses on the technical aspects of sustainable energy technologies, such as wind, solar, biomass, ocean waves/tides, geothermal, and hydropower; it also covers issues and applications related to storage, transportation, distribution, industrial usage, and buildings. The course investigates the progress, challenges, and opportunities of each technology to be both technically feasible and economically viable.

**MIME 4430 Automotive Control Systems**

[3 credit hours]

This course covers the major aspects of automotive control, including engine, driveline, and complete vehicle control. This includes applications such as fuel and ignition control, ABS systems, gear-shifting, and vehicle velocity estimation.

**Prerequisites:** MIME 3380 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4440 Mechatronics**

[3 credit hours]

This course will give students hands-on experience with mechatronic systems and components. The laboratory will be used to demonstrate several mechatronics systems including inverted pendulums, suites of sensors and motors, and other more complex systems. A major part of the course will be a semester-long project where the students conceive, design, and build a mechatronic device.

**Prerequisites:** MIME 3380 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4450 Automation Design**

[3 credit hours]

This course will introduce the range of common components used in automation, including actuators, sensors, motors, linear guides, energy chain, industrial robots and light curtains. Students will practice (with feedback) walking through the design process in specifying, sizing, laying out and integrating these components.

**Prerequisites:** MIME 1100 with a minimum grade of D- and MIME 2300 with a minimum grade of D- and CIVE 1160 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4460 MATLAB for Engineers**

[3 credit hours]

This course will review the basics of using MATLAB, identify best-practices applicable to MATLAB and other programming languages, and provide examples of more-advanced functionality such as image processing, Simulink control of mechatronic systems, numerically solving differential equations, GPU computation, and optimization. Programming experience would be helpful, but this would also be a good opportunity to rapidly grow programming skills with an easy-to-learn language.

**Prerequisites:** MATH 2860 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MIME 4510 Turbomachinery**

[3 credit hours]

Theory of energy transfer between fluid and rotor in turbomachines. Design of turbomachine components. Applications to pumps, compressors and turbines.

**Prerequisites:** (MIME 3410 with a minimum grade of D- and MIME 3430 with a minimum grade of D-)

**Term Offered:** Spring, Fall



**MIME 4520 Heating, Ventilating And Air Conditioning**

[3 credit hours]

Control of the thermal environment within enclosed spaces including psychrometric properties of air heating and cooling, loads and factors affecting human comfort. Analysis of basic heating and refrigeration systems, heat pumps, heaters, utilization of solar energy, humidifiers, energy conservation and controls for systems.

**Prerequisites:** MIME 3410 with a minimum grade of D-**Term Offered:** Fall**MIME 4530 Internal Combustion Engines**

[3 credit hours]

Study of Carnot, Otto, Diesel and Brayton Cycles, performance characteristics, combustion engines and construction details of internal combustion engines. Analysis of problems associated with carburetion, fuel injection, combustion, cooling, supercharging, emissions and emission control.

**Prerequisites:** MIME 3410 with a minimum grade of D-**Term Offered:** Spring, Fall**MIME 4540 Jet Propulsion**

[3 credit hours]

Mechanics and thermodynamics of jet propulsion. Fundamentals of high-speed flow. Analysis of gas turbine engine components: diffuser, compressor, turbine and nozzle. Investigation of characteristics of ramjets, turbojets, turbofans and turboprops. Introduction to solid and liquid rockets.

**Prerequisites:** MIME 3410 with a minimum grade of D-**Term Offered:** Fall**MIME 4550 Aerodynamics**

[3 credit hours]

Fundamentals of aerodynamics, potential flow theory, aerodynamic forces and moments, introduction to numerical analysis, application to internal flows, theory of lift for infinite and finite wings, induced drag.

**Prerequisites:** MIME 3430 with a minimum grade of D-**Term Offered:** Spring**MIME 4560 Gas Dynamics**

[3 credit hours]

Analysis of compressible flow phenomena including shock and detonation waves. Internal flow with friction and heat addition. Analysis and application to supersonic airfoil theory, inlet nacelles, nozzles to generate supersonic thrust and jet engine combustors.

**Prerequisites:** MIME 3430 with a minimum grade of D-**Term Offered:** Spring**MIME 4690 Reliability**

[3 credit hours]

Reliability of components and multicomponent systems. Static and dynamic reliability models for both independent and dependent failures. Effects of hot and cold redundancy. Reliability testing consideration and renewal theory.

**Prerequisites:** MIME 4010 with a minimum grade of D-**Term Offered:** Spring**MIME 4820 Sustainability Analysis and Design**

[3 credit hours]

The course is intended to introduce students to sustainability analysis and design in manufacturing and service settings as related to mechanical and industrial engineering. It will cover solid waste minimization for manufacturers, life cycle analysis, and environmentally conscious design.

**MIME 4920 Special Projects**

[1-3 credit hours]

A special project by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for students interested in mechanical, industrial or manufacturing engineering nearing completion of their undergraduate degree. Instructor will specify scope of project to correspond to credit hours.

**Term Offered:** Spring, Summer, Fall**MIME 4980 Special Topics**

[1-3 credit hours]

A special topic at the undergraduate level in Mechanical, Industrial or Manufacturing Engineering to be offered as a course during a term by a faculty member. This is intended for students nearing graduation. Credits will correspond to regular class meeting of one lecture hour per week per credit hour.

**Term Offered:** Spring, Summer, Fall**MIME 4990 Independent Study**

[1-3 credit hours]

An independent study by the student to investigate or solve an acceptable problem in industrial or mechanical engineering. This course is primarily intended for engineering students nearing graduation. Instructor will specify scope of study to correspond to credit hours.

**Term Offered:** Fall

# MECHANICAL ENGINEERING TECH (MET)

## MET 1020 Technical Drawing

[3 credit hours]

Essentials of dimensioning, size, position and form tolerancing and their application in shop processes. Pictorial drawings are created freehand and with the use of drawing instruments.

**Term Offered:** Spring, Fall

## MET 1050 Computers for Engineering Technology

[3 credit hours]

Concepts and techniques on the application of computers to the solution of manufacturing and engineering technology problems. Provides an introduction to computer operating systems, programming language and technical software.

**Term Offered:** Spring, Fall

## MET 1110 Metal Machining And Processes

[3 credit hours]

Material and machining processes dealing with production methods, machining capabilities, tolerances. Metal working with lathe, mill, etc., along with processes such as molding, stamping, forging, etc.

**Term Offered:** Spring, Fall

## MET 1120 Metal Machining & Processes Lab

[1 credit hour]

Provides students with an opportunity to gain hands-on experience with machine tools and gauging measurement instruments.

**Prerequisites:** MET 1020 (may be taken concurrently) with a minimum grade of D- and MET 1110 with a minimum grade of D-

**Corequisites:** MET 1110

**Term Offered:** Spring, Fall

## MET 1250 Computer Aided Drafting and Design

[3 credit hours]

Introduction to two-dimensional and three-dimensional Computer Aided Drafting. Laboratory based experiences with creating and dimensioning working drawings, part libraries, entity insertion, graphics manipulation and customization.

**Prerequisites:** MET 1020 with a minimum grade of D- and MET 1050 with a minimum grade of D-

**Term Offered:** Spring, Fall

## MET 2050 Fluid And Hydraulic Mechanics

[0-4 credit hours]

Application of physical principles for the design of systems to transport liquids in closed hydraulic or process piping systems; friction, pumping, flow meters and gauges.

**Prerequisites:** PHYS 2010 with a minimum grade of D- or PHYS 2070 with a minimum grade of D- or PHYS 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MET 2100 Statics For Technology

[3 credit hours]

Review and extension of static force analysis: free-body diagrams, forces, moments, dry friction and static equilibrium applied to machines, mechanisms, trusses and frames.

**Prerequisites:** PHYS 2010 with a minimum grade of D- or PHYS 2070 with a minimum grade of D- or PHYS 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MET 2120 Strength Of Materials For Technology

[0-4 credit hours]

Introduction to the study of stress distribution and deformation of elastic materials due to applied loads. Consideration of stress, strain, compression, tension, shear, torsion, moments and combined loading in basic machine elements.

**Prerequisites:** MET 2100 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## MET 2150 Numerical Control Applications

[0-3 credit hours]

Survey of tooling and production activities adaptable to numerical control equipment and processes. Includes terminology, definitions and functions. Students will learn how to create part programs for CNC machinery.

**Prerequisites:** (MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D-) and (ENGT 1050 with a minimum grade of D- or MET 1050 with a minimum grade of D-) and MET 1110 with a minimum grade of D- and MET 1120 with a minimum grade of D- and MET 1250 with a minimum grade of D-

**Term Offered:** Spring

## MET 2210 Technical Thermodynamics

[4 credit hours]

Analysis of thermodynamic concepts as they apply to heating and power production; conservation of energy, work and heat, engines and refrigeration. Includes laboratory experiences.

**Prerequisites:** (PHYS 2010 with a minimum grade of D- or PHYS 2070 with a minimum grade of D- or PHYS 2130 with a minimum grade of D-) and (MET 1050 with a minimum grade of D- or ENGT 1050 with a minimum grade of D-) and (MATH 1850 with a minimum grade of D- or MATH 2450 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## MET 2310 Materials Science

[3 credit hours]

Study of the relationships between structures and properties for common engineering materials, including metals, polymers, ceramics and composites. Mechanical behavior, temperature effects, heat treatment, corrosion and electrical properties are covered.

**Prerequisites:** ENGT 3010 with a minimum grade of D- and CHEM 1230 with a minimum grade of D- and CHEM 1280 with a minimum grade of D-

**Corequisites:** MET 2320

**MET 2320 Materials Science Laboratory**

[0-1 credit hours]

Laboratory based study of the relationships between structures and properties for common engineering materials, including metals, polymers, ceramics and composites. Mechanical behavior, temperature effects, heat treatment, corrosion and electrical properties are covered.

**Prerequisites:** ENGT 3010 with a minimum grade of D- and CHEM 1230 with a minimum grade of D- and CHEM 1280 with a minimum grade of D-

**Corequisites:** MET 2310

**MET 2350 Advanced Computer Aided Drafting and Design**

[3 credit hours]

Continuation of MET 1250. Topics covered include attributes, with attention to geometric tolerancing and true dimensioning. Application of three-dimensional modeling techniques and the preparation of detail drawings from the model.

**Prerequisites:** MET 1250 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MET 2980 Special Topics**

[1-4 credit hours]

Student performs work on a specialized project of an advanced nature under the supervision of a Mechanical Engineering Technology faculty member.

**Term Offered:** Spring, Summer, Fall

**MET 3100 Applied Thermodynamics**

[0-4 credit hours]

Basic principles and laws of classical thermodynamics, equations of state, reversibility and entropy applied to processes and cycles for ideal and non-ideal substances. Special attention will be given to gas power cycles, vapor and combined power cycles, refrigeration cycle. Air conditioning processes. Mechanics of heat transfer.

**Prerequisites:** MET 2210 with a minimum grade of D- and (MATH 1860 with a minimum grade of D- or MATH 2460 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**MET 3200 Mechanical Design I**

[3 credit hours]

Introduction to the engineering design process. Analysis of stress, strain, deflection and fatigue in mechanical design. Design of beams, columns, springs and machine elements.

**Prerequisites:** (MET 3400 with a minimum grade of D- and MET 2120 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**MET 3400 Applied Dynamics**

[3 credit hours]

Static force and moment analysis using vector methods. Applications of dry friction. Analysis of structures and machines. Dynamic analysis using force and acceleration, energy and momentum methods.

**Prerequisites:** (MATH 1860 with a minimum grade of D- or MATH 2460 with a minimum grade of D-) and MET 2100 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MET 4100 Applied Fluid Mechanics**

[0-4 credit hours]

Fundamentals of fluid statics and dynamics including differential analysis, dimensional analysis and similitude, laminar and turbulent flow, viscosity and boundary layer concepts, and compressible flow. Application of these principles to practical, applied problems. Flow of fluids in pipes and conduits. Pump selection and application. The design and analysis of HVAC ducts. Drag and Lift.

**Prerequisites:** MET 2050 with a minimum grade of D- and (MATH 1860 with a minimum grade of D- or MATH 2460 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**MET 4200 Mechanical Design II**

[3 credit hours]

Design and application of mechanical components and machine elements including shafts, gears, gear drives, belt drives, chain drives, fasteners, power screws, clutches, brakes and machine frames.

**Prerequisites:** MET 3200 with a minimum grade of D- and MET 2310 with a minimum grade of D- and MET 2320 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MET 4400 Applied Heat Transfer**

[3 credit hours]

Fundamentals of applied heat transfer by conduction, laminar and turbulent convection, condensation and boiling, radiation exchange between surfaces, and heat exchangers.

**Prerequisites:** MET 3100 with a minimum grade of D-

**MET 4600 Engineering Safety**

[3 credit hours]

Application of human factors and engineering practices toward accident prevention and elimination of hazards. Topics include liability, standards, OSHA, hazard control, accident investigation and safety management.

**Term Offered:** Fall

# MEDICAL TECHNOLOGY (MEDT)

## MEDT 2010 Introduction to Medical Laboratory Techniques

[2 credit hours]

This course serves as an introduction to the profession of laboratory medicine. Topics include: organizational structure of hospitals and laboratories; medical ethics; related medical terminology; quality assurance; laboratory safety; laboratory calculations and knowledge of the basic principles of laboratory testing.

**Prerequisites:** BIOL 2170 with a minimum grade of C and BIOL 2180 with a minimum grade of C and CHEM 1240 with a minimum grade of C and CHEM 1290 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## MEDT 4020 Clinical Hematology

[5 credit hours]

Introduction to the theory, practical application, technical performance and evaluation of hematological procedures. Correlation of clinical laboratory data with the diagnosis and treatment of blood cell diseases.

**Term Offered:** Summer

## MEDT 4030 Clinical Urinalysis, Body Fluids and Hemostasis

[3 credit hours]

Normal and pathological physiologic function of renal, synovial, seminal, cerebrospinal, serous and amniotic fluids. Comparison of normal and abnormal hemostatic coagulation and fibrinolytic systems and physiology.

**Term Offered:** Spring, Summer

## MEDT 4040 Clinical Chemistry

[5 credit hours]

Analysis of chemical constituents of blood and body fluids in normal and abnormal physiology, including assay performance, test interpretation, quality control and interpretation, and methodological principles.

**Term Offered:** Summer, Fall

## MEDT 4050 Clinical Microbiology

[5 credit hours]

Study of bacteria that are pathogenic or potentially pathogenic to humans with emphasis on principles of testing methodologies, techniques for isolation, identification, and clinical relevance by body site.

**Prerequisites:** BIOL 4030 with a minimum grade of C and BIOL 4040 with a minimum grade of C

**Term Offered:** Fall

## MEDT 4060 Clinical Immunology

[3 credit hours]

Theory and practical applications of immunodiagnostics and immunopathology, and of molecular diagnostics. Principles of methodologies in relationship to clinical diagnosis and correlation with human disease are stressed.

**Prerequisites:** BIOL 4050 with a minimum grade of C

**Term Offered:** Summer, Fall

## MEDT 4070 Clinical Parasitology

[2 credit hours]

Lecture/laboratory sessions cover the major groups of medically important parasites, including amoebae, helminthes and blood protozoa. Morphologic identification of pathogenic organisms and the ability to distinguish from non-pathogenic genera.

**Term Offered:** Fall

## MEDT 4080 Clinical Immunohematology

[5 credit hours]

Theory of immunohematology, with emphasis on erythrocyte antigen systems and antibodies detection and identification. Overview of regulations governing blood banks, methodologies used, importance and hazards of human blood components transfusion.

**Term Offered:** Spring, Summer, Fall

## MEDT 4090 Clinical Mycology

[2 credit hours]

Study of the medically important fungi including yeast, dermatophytes and opportunistic and dimorphic fungi, including morphologic identification of pathogenic organisms and saprophytes which are commonly encountered in clinical specimens.

**Term Offered:** Spring

## MEDT 4100 Clinical Virology

[2 credit hours]

Discussion of the epidemiology and pathogenesis of viruses implicated in human disease. Emphasis on diagnostic tools used in the clinical laboratory to isolate, culture, and identify these organisms.

**Term Offered:** Spring, Summer, Fall

## MEDT 4500 Clinical Research and Clinical Correlations

[3 credit hours]

Correlate clinical, technical and analytical proficiencies that comprise medical laboratory science practice. Analyze and interpret case studies through selection, application, and interpretation of clinical laboratory protocols.

**Term Offered:** Spring, Fall

## MEDT 4950 Clinical Externship: Management

[1 credit hour]

Clinical practicum experience in a Clinical Sciences Laboratory setting focused on management of laboratory services, including role and responsibilities of supervision, laboratory scheduling/workflow, and financial management.

**Term Offered:** Spring, Fall

## MEDT 4951 Clinical Externship: Microbiology

[4 credit hours]

Clinical laboratory experience in an affiliated Clinical Sciences Laboratory setting focused on microbiological culture and assay techniques and methods. May also include an immunology system.

**Prerequisites:** MEDT 4050 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## MEDT 4952 Clinical Externship: Chemistry

[4 credit hours]

Clinical laboratory experience in an affiliated Clinical Sciences Laboratory focused on clinical chemistry procedures, techniques, principles, and relationship to disease states. May also include an immunology practicum.

**Prerequisites:** MEDT 4040 with a minimum grade of C

**Term Offered:** Summer, Fall

**MEDT 4953 Clinical Externship: Hematology**

[3 credit hours]

Clinical laboratory experience in an affiliated Clinical Sciences Laboratory focused on analytical hematological methodologies, correlation of tests with disease state, hematopoiesis and hemostasis, quality control and instrumentation and manual methods.

**Prerequisites:** MEDT 4020 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**MEDT 4954 Clinical Externship: Immunohematology**

[3 credit hours]

Clinical laboratory experience in an affiliated Clinical Sciences Laboratory focused on methodologies and problem-solving in immunohematology, including crossmatching, antibody identification, blood component preparation, and transfusion and quality assurance.

**Prerequisites:** MEDT 4020 with a minimum grade of C

**Term Offered:** Summer, Fall



# MEDICINAL-BIOLOGICAL CHEMISTRY (MBC)

## MBC 2960 Undergraduate Research

[1-6 credit hours]

Development and pursuit of undergraduate research in Medicinal and Biological Chemistry.

**Term Offered:** Spring, Summer, Fall

## MBC 3100 Practices in Pharmaceutical Research

[1 credit hour]

Consideration of the scientific, ethical, and legal obligations expected in the conduct of academic and industrial pharmaceutical research.

**Term Offered:** Spring

## MBC 3310 Medicinal Chemistry I: Drug Action And Design

[2 credit hours]

An introductory course presenting the basic chemical principles governing the behavior of drugs and the design of new therapeutics.

**Prerequisites:** CHEM 2420 with a minimum grade of D-

**Term Offered:** Fall

## MBC 3320 Medicinal Chemistry II: Drug Design and Drug Action

[3 credit hours]

A course presenting application of basic medicinal chemistry principles in drug design and drug action, which are key to drug discovery and drug development.

**Prerequisites:** (MBC 3310 with a minimum grade of D- and MBC 3550 with a minimum grade of D-)

**Term Offered:** Spring

## MBC 3330 Techniques in Pharmaceutical and Medicinal Chemistry

[2 credit hours]

A consideration and application of analytic and chemistry techniques useful for pharmaceutical and medicinal chemistry students.

**Term Offered:** Fall

## MBC 3340 Techniques in Pharmaceutical and Medicinal Chemistry Laboratory

[1 credit hour]

A laboratory course that fosters development of analytical and chemistry techniques useful for pharmaceutical and medicinal chemistry students.

**Corequisites:** MBC 3330

**Term Offered:** Fall

## MBC 3550 Physiological Chemistry I: Structure And Function Of Biological Macromolecules

[3 credit hours]

An examination of the levels of structure of proteins, nucleic acids, other biomolecules and biomolecular assemblies.

**Term Offered:** Fall

## MBC 3552 Physiological Chemistry II Cellular Metabolism and Homeostasis

[2 credit hours]

This course is an examination of the catabolic and anabolic reactions that comprise cellular metabolism and the regulation mechanisms that operate to maintain cellular homeostasis.

**Prerequisites:** MBC 3550 with a minimum grade of D-

## MBC 3560 Physiological Chemistry II: Chemical Regulation Of Cells And Organisms

[3 credit hours]

An examination of the chemistry and regulation of metabolic processes in cells, interacting cells and tissues.

**Prerequisites:** MBC 3550 with a minimum grade of D-

**Term Offered:** Spring

## MBC 3800 Microbiology And Immunology

[3 credit hours]

A lecture course with emphasis on how the immune system protects the body against bacterial, viral and parasitic invaders. Medically important human infectious diseases are described as well as chemotherapeutic intervention.

**Prerequisites:** MBC 3550 with a minimum grade of D-

**Term Offered:** Spring

## MBC 3850 Microbiology And Immunology Laboratory

[1 credit hour]

A laboratory course that follows the course material presented in MBC 3800. Both immunology and microbiology experiments that are medically useful and clinically important will be performed.

**Corequisites:** MBC 3800

**Term Offered:** Spring

## MBC 3860 Microbiology for Pharmaceutical Professionals

[2 credit hours]

This is a lecture and laboratory course with emphasis on microorganisms that cause disease. Special attention will be paid to structures and mechanisms present in microorganisms that can be exploited to inhibit the growth and survival of these organisms in a human host.

**Prerequisites:** MBC 3550 with a minimum grade of D-

## MBC 3880 Medicinal And Biological Chemistry Laboratory

[3 credit hours]

Laboratory and lecture teaching fundamental laboratory skills in synthetic medicinal chemistry.

**Term Offered:** Spring, Fall

## MBC 4300 MEDICINAL CHEMISTRY III: INFECTIOUS DISEASE CHEMOTHERAPY

[2 credit hours]

The chemical basis for the action of drugs and immune system products that counter infectious disease.

**Prerequisites:** MBC 3800 with a minimum grade of C

**Term Offered:** Spring

## MBC 4380 Medicinal Plants

[3 credit hours]

A lecture/field course emphasizing medicinal and poisonous plants of this locale.

**Term Offered:** Summer

## MBC 4470 Advanced Immuno-Therapeutics

[2 credit hours]

This course emphasizes the development of methods for immunotherapeutic intervention in cancer and autoimmune and infectious disease. The course has a seminar/discussion/student presentation format.

**Prerequisites:** MBC 4300 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MBC 4710 Targeted Drug Design**

[3 credit hours]

A survey of novel macromolecular targeting approaches to drug design in important human disorders. The course has a seminar/discussion/student presentation format.

**Prerequisites:** MBC 3320 with a minimum grade of D-

**Term Offered:** Summer, Fall

**MBC 4720 Advances In Drug Design**

[3 credit hours]

A survey of novel approaches to drug design and development. The course has a seminar/discussion/student presentation format.

**Prerequisites:** MBC 3320 with a minimum grade of D-

**MBC 4780 Internship in Medicinal Chemistry**

[6-12 credit hours]

An experiential course in which students acquire practical knowledge through hands-on experience in an area of medicinal and biological chemistry by working in an academic, private or government laboratory or professional site.

**Prerequisites:** MBC 3320 with a minimum grade of D- and MBC 3560 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**MBC 4850 Advanced Immunology And Tissue Culture Laboratory**

[1-10 credit hours]

Research experience in medically related immunology including literature investigations, tissue culture, cell sorting and sterile biotechniques and culminating with a seminar and written report.

**Term Offered:** Spring, Summer, Fall

**MBC 4870 Biomedical Chemistry Laboratory**

[1-10 credit hours]

Research experience in biomedical chemistry including literature investigations and chemical synthesis of medically important compounds and culminating with a seminar and written report.

**Term Offered:** Spring, Fall

**MBC 4900 Honors Seminar In Medicinal And Biological Chemistry**

[1-3 credit hours]

An examination of a specific question in the context of the primary literature in medicinal or biological chemistry.

**Term Offered:** Spring, Summer, Fall

**MBC 4910 Problems In Biomedical Chemistry**

[1-3 credit hours]

Selected study of topics in biomedical chemistry. New chemical and biochemical strategies in drug design are examined in detail.

**Term Offered:** Spring, Summer, Fall

**MBC 4950 Research In Medicinal Chemistry**

[3-8 credit hours]

Selected research and study in medicinal chemistry.

**Term Offered:** Spring, Summer, Fall

**MBC 4960 Honors Thesis In Medicinal And Biological Chemistry**

[2-5 credit hours]

An examination of a specific research question in medicinal or biological chemistry that can be answered through experimental work.

**Term Offered:** Spring, Summer, Fall

**MBC 4980 Special Topics In Drug Design**

[1-4 credit hours]

A detailed examination of new chemical and biochemical strategies in drug design.

**Prerequisites:** (MBC 3320 with a minimum grade of D- and MBC 3560 with a minimum grade of D-)

**Term Offered:** Spring, Fall

# MILITARY SCIENCE AND LEADERSHIP (MSL)

## MSL 1010 Introduction to the Army

[3 credit hours]

Introduces students to issues and competencies that are central to a commissioned officer's responsibilities. Establishes a framework for understanding leadership, officership, Army values, physical fitness and time management. Leadership Lab required.

**Term Offered:** Fall

## MSL 1020 Foundations of Agile and Adaptive Leadership

[3 credit hours]

Builds upon the basic leadership fundamentals introduced in MSL 1010 and includes lessons in goal setting, problem solving, critical thinking, values clarification, leadership and followership, and introduces techniques for improving listening and speaking skills. Leadership Lab required.

**Term Offered:** Spring

## MSL 1030 Introduction To Physical Fitness

[1 credit hour]

Students participate in the U.S. Army's physical fitness program three days each week. The sessions include running, strength exercises, agility exercises and organized sports.

**Term Offered:** Spring, Fall

## MSL 1040 Physical Fitness

[1 credit hour]

Students participate in the U.S. Army's physical fitness program three days each week. The sessions build upon the fitness level previously achieved.

**Term Offered:** Spring

## MSL 2010 Leadership and Decision Making

[3 credit hours]

Identifies successful leadership characteristics through observation of others and self, using experiential learning exercises designed to teach students how to communicate, how to build teams and how to plan and organize effectively. Leadership Lab required.

**Term Offered:** Fall

## MSL 2020 Army Doctrine and Team Development

[3 credit hours]

Students examine how to build successful teams, including methods for influencing action and achieving goals, effective communication techniques, values and ethics, problem solving and physical fitness. Leadership Lab required.

**Term Offered:** Spring

## MSL 2030 Physical Training I

[1 credit hour]

Students participate in physical training three times each week. Students learn how to conduct and lead a military physical training session.

**Term Offered:** Fall

## MSL 2040 Physical Training II

[1 credit hour]

Students participate in physical training three times each week. The sessions build upon the training level previously achieved.

**Term Offered:** Spring

## MSL 2200 Leader's Training Course

[3 credit hours]

This training is a six week course in leadership management and interpersonal skills taught at Ft. Knox, Kentucky. The training compresses the Military Science 1000 and 2000-level courses. Camp graduates are eligible to enter the Army ROTC Advanced course.

**Term Offered:** Spring, Fall

## MSL 2990 Independent Study In Military Science

[1-3 credit hours]

Students will study an appropriate subject mutually agreed upon between the student and instructor.

**Term Offered:** Spring, Fall

## MSL 3010 Training Management and the Warfighting Functions

[3 credit hours]

Students assess leadership abilities, plan and conduct individual and small unit training, and apply basic tactical principles and reasoning skills. Leadership Lab required

**Term Offered:** Fall

## MSL 3020 Applied Leadership in Small Unit OPS

[3 credit hours]

Examines the role that communications, values and ethics play in effective leadership. Topics include ethical decision making, consideration of others and Army Leadership Doctrine. Leadership Lab required.

**Term Offered:** Spring

## MSL 3030 Physical Fitness Planning I

[1 credit hour]

Students design and implement weekly physical training sessions. In addition, they learn how to supervise a group training session.

**Term Offered:** Fall

## MSL 3040 Physical Fitness Planning II

[1 credit hour]

Students design and implement weekly physical training sessions. The sessions build upon the skill level previously achieved.

**Term Offered:** Spring

## MSL 3600 Airborne Operations

[1 credit hour]

Three weeks of intensive field training conducted at Ft. Benning, Georgia. Combines the study of military airborne operations, strenuous physical conditioning, military parachute techniques and culminates with five parachute jumps from military aircraft.

**Term Offered:** Spring, Fall

## MSL 3700 Cadet Troop Leadership Training (ctlT)

[2 credit hours]

Three weeks of practical experience serving as a platoon leader with U.S. Army soldiers. This training puts the student in leadership situations and allows them to practice and hone their leadership skills in a real world environment.

**Term Offered:** Spring, Summer, Fall

**MSL 3800 Air Assault Operations**

[1 credit hour]

Two weeks of intensive field training conducted at an Army installation. Combines the study of Military Heliborne Operations, strenuous physical conditioning and advanced rappelling. Culminates with 4 rappels from a military helicopter.

**Term Offered:** Spring, Fall

**MSL 3850 Leaders Development And Assessment Course**

[3 credit hours]

This is an intense five-week course conducted between the junior and senior year. This concentrated practical training provides an opportunity to evaluate the student's application of academic knowledge over a myriad of leadership situations and tasks.

**Term Offered:** Spring, Summer, Fall

**MSL 3990 Independent Study In Military Science**

[1-3 credit hours]

Students will study an appropriate subject mutually agreed upon between the student and instructor.

**MSL 4010 The Army Officer**

[3 credit hours]

Develops student proficiency in planning and executing complex operations, functioning as a member of a staff and mentoring subordinates. Students explore the Army's training management system, methods of effective staff collaboration and developmental counseling techniques.

**Term Offered:** Fall

**MSL 4020 Company Grade Leadership**

[3 credit hours]

Course includes a case study analysis of military law and practical exercises on establishing an ethical command climate. Students complete a semester-long Senior Leadership Project that requires them to plan, organize, analyze and demonstrate their leadership skills.

**Term Offered:** Spring

**MSL 4030 Advanced Pt Planning I**

[1 credit hour]

Students design and implement a physical training program for the entire semester. They supervise and critique implementation of the MS 3030 students' weekly training plans.

**Term Offered:** Fall

**MSL 4040 Advanced Pt Planning II**

[1 credit hour]

Students design and implement a physical training program for the entire semester. The sessions build upon the skill level previously achieved.

**Term Offered:** Spring

**MSL 4800 United States Military History**

[3 credit hours]

An in-depth study of the battle and its place in American history, examining combat leadership and the decision making process at both the operational and tactical level.

**Term Offered:** Spring, Fall

**MSL 4990 Independent Study in US Military History**

[1-3 credit hours]

Students will study an appropriate subject mutually agreed upon between the student and instructor.

**Term Offered:** Spring, Summer, Fall

# MUSIC (MUS)

## MUS 1000 Performance Laboratory

[0 credit hours]

Required of music majors and minors. Weekly departmental student recitals. Offered as P/NC only.

**Term Offered:** Spring, Fall

## MUS 1010 Concert Attendance

[0 credit hours]

Required of music majors and minors. Attend 8 department concerts and 2 non-department concerts. Offered as P/NC only.

**Term Offered:** Spring, Fall

## MUS 1100 Introduction To Music Technology

[1 credit hour]

This course introduces students to music applications for sound recording, music notation, and virtual sound design. Students also discover basic tools of the trade such as microphones, speaker monitors, portable recording devices, and current trends within social media relating to self-promotion in music.

**Term Offered:** Spring, Fall

## MUS 1200 Group Guitar For The Non-Major

[2 credit hours]

Basic guitar skills: note reading, chords, accompaniment, variety of musical styles. Includes rhythmic and aural training, theory and ensemble playing. Each student must provide their own guitar.

**Term Offered:** Spring, Fall

## MUS 1250 Group Piano For The Non-Major I

[2 credit hours]

Classical and popular literature in a variety of styles and period will be explored. May be repeated for credit. Students may take P/NC.

**Term Offered:** Spring, Fall

## MUS 1280 Group Voice For The Non-Major

[2 credit hours]

Develops basic vocal techniques with attention to the principles of voice production, vowel formation, breathing, articulation and flexibility. May be repeated for credit. Open to all students regardless of major. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

## MUS 1500 String Class

[2 credit hours]

Principles, concepts, difficulties typical of stringed instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

## MUS 1510 Percussion Class

[2 credit hours]

Principles, concepts, difficulties typical of percussion instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

## MUS 1530 Brass Class

[2 credit hours]

Principles, concepts, difficulties typical of brass instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

## MUS 1550 Woodwinds Class

[2 credit hours]

Principles, concepts, difficulties typical of woodwind instruments and pedagogy addressed through performance.

**Corequisites:** MED 1000

**Term Offered:** Spring, Fall

## MUS 1560 Instrumental Class

[3 credit hours]

An overview of principles, concepts and difficulties typical of string, brass, woodwind and percussion instruments.

**Corequisites:** MED 1000

**Term Offered:** Fall

## MUS 1570 Piano Class For Music Majors I

[1 credit hour]

Progressive sequence of keyboard skills courses stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

**Term Offered:** Spring, Summer, Fall

## MUS 1580 Piano Class For Music Majors II

[1 credit hour]

Provides instruction in keyboard skills required for the various degree programs. Progressive sequence of courses stressing technique, repertoire, sight reading, harmonization, transposition. Includes keyboard technology.

**Prerequisites:** MUS 1570 with a minimum grade of C

**Term Offered:** Spring

## MUS 1590 Jazz Piano Class

[1 credit hour]

Provides instruction in jazz keyboard skills, including jazz techniques, voicings, repertoire, sight reading and harmonization.

**Prerequisites:** MUS 1570 with a minimum grade of C

**Term Offered:** Spring

## MUS 1610 Music Theory And Ear Training I

[4 credit hours]

Dictation, ear training and sight singing skills in rhythm, melody and harmony. Basic theoretical skills include key signatures, clefs, notation of scales, chords and rhythm patterns. Includes computer technology.

**Term Offered:** Fall

## MUS 1620 Music Theory And Ear Training II

[4 credit hours]

Continuation of 1610. Emphasis on melody dictation and sight singing. Additional skill development in harmonizations, figured bass and study of basic forms. Includes computer technology.

**Prerequisites:** MUS 1610 with a minimum grade of C

**Term Offered:** Spring



**MUS 1700 Jazz Fundamentals**

[2 credit hours]

Introduction to jazz performance practices, nomenclature, chord and music notation, analysis and improvisation.

**Prerequisites:** MUS 1610 with a minimum grade of C

**Term Offered:** Spring

**MUS 1800 Applied Music**

[1-4 credit hours]

Private music lessons for first-year music majors and minors. Must be taken twice, and a grade of B or better is required in each semester.

**Term Offered:** Spring, Summer, Fall

**MUS 1810 Applied Music For The Non-Major**

[1-2 credit hours]

Private music lessons for provisional and non-music majors. May be repeated for credit. Limited by instructor availability.

**Term Offered:** Spring, Summer, Fall

**MUS 2200 Music Theory For The Non-Major**

[3 credit hours]

Introduction to the fundamentals of music, including notation, key, time signatures, rhythm, intervals, triads and chords, dominant 7th chords, cadences, and introduction to elementary aural skills. Students may take P/NC. Not for major credit.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

**MUS 2210 Introduction To Music**

[3 credit hours]

The study of vocal and instrumental music from the standard repertoire primarily through listening. Previous music training is not required, but regular listening is part of the course. Not for major credit. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

**MUS 2220 History Of Jazz**

[3 credit hours]

A study of the development of jazz styles, including listening skills and historical perspectives. Because the major innovations and styles of jazz are a result of contributions from African Americans and other ethnicities, the course includes a study of how different time periods influenced the development of jazz and our culture. Students may take P/NC.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

**MUS 2240 History Of Rock And Roll**

[3 credit hours]

A study of the styles, techniques and history of rock and roll. Students may take P/NC. Not for major credit.

**Term Offered:** Summer, Fall

Core Arts & Humanities

**MUS 2250 Musical Diversity In The United States**

[3 credit hours]

The cultures of various ethnic groups (Native Americans, African-American, Mennonite, Moravian, Creole and others) are examined, especially as they relate to the development of folk, popular and art music styles in the United States. This course includes listening. Students may take P/NC. Not for major credit.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural US Diversity, Trans Mod Arts and Humanities

**MUS 2260 Electronic Music**

[2 credit hours]

Both lecture sessions and creative lab assignments. Students start with a basic introduction to the physics of music and sound, professional applications for sound design, MIDI, music-recording, and current personal music-publishing within the internet at large.

**Term Offered:** Spring, Fall

**MUS 2270 Recording Techniques**

[2 credit hours]

Both lecture sessions and creative lab assignments. Students examine the physical aspects of sound and hearing. Recording transducers from microphones to monitors, mixing consoles, MIDI and music technology in the contemporary recording studio are all examined. Current personal music-publishing within the internet at large are presented.

**Term Offered:** Spring, Fall

**MUS 2280 Survey Of The Music Business**

[3 credit hours]

An indepth study of the music business nationally and internationally. Music making, publishing, copyright law, management, broadcast in radio and film, and business affairs are examined.

**Term Offered:** Summer, Fall

**MUS 2410 Music History And Literature I: World Music And Jazz**

[3 credit hours]

A study of music from various world cultures and jazz. A special emphasis is placed on developing listening skills.

**Term Offered:** Spring

**MUS 2420 Cultures And Music Of Non-Western Styles**

[3 credit hours]

An introduction to world music. The course provides overviews of the geography, the social and political environments, the religious practices and spiritual beliefs, and the cultural heritages of people and countries, such as Central Asia, South Asia, Africa, Caribbean, Korea, Japan, Latin America, Native American, Jazz in America, and American Pop, and American Country. Student may take P/NC

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

**MUS 2520 Intro to Voice and Diction 1**

[2 credit hours]

Intro to Voice and Diction I: Voice for Freshman and Vocal Diction - a combined course designed to train the singer in how to function in voice lessons through skill building sets such as; develop a process to learn repertoire, learn and understand International Phonetic Alphabet sounds and demonstrate that knowledge through practical application to vocal technique and repertoire. This creates contextual learning, while building a foundation of experiential knowledge for future training.

**Corequisites:** MUS 1800**Term Offered:** Fall**MUS 2530 Diction For Singers I**

[1 credit hour]

International Phonetic Alphabet mastery; pronunciation of English, German, Latin, Italian and French in relation to art song and aria form, emphasis on the sound of the language. Meets two hours per week.

**Term Offered:** Fall**MUS 2540 Diction For Singers II**

[1 credit hour]

Continuation of MUS 2530. IPA; pronunciation of German and English in relation to art song and aria form; emphasis on the sound of the language. Meets two hours per week.

**Prerequisites:** MUS 2530 with a minimum grade of C**Term Offered:** Spring**MUS 2550 Voice Class For Music Majors**

[1 credit hour]

For instrumental and keyboard majors. Develops basic vocal techniques with attention to the principles of voice production, vowel formation, breathing, articulation and flexibility. May be repeated for credit.

**Prerequisites:** MUS 1620 with a minimum grade of C**MUS 2560 Introduction to Voice and Diction 2**

[2 credit hours]

Intro to Voice and Diction II: Voice for Freshman and Vocal Diction – The second class designed to build upon the skills discussed and demonstrated in Intro to Voice and Diction I. This class will concentrate on the continued skills required to learn more advanced vocal repertoire such as the operatic aria or Romantic song cycle. Advanced, International Phonetic Alphabet sounds and symbols will be part of tools used to aid in the pronunciation and recognition in German and French classical repertoire. More advanced concepts such as acoustical physics and resonance in the human instrument will also be introduced and discussed. This creates contextual learning, while building a foundation of experiential knowledge for future training.

**Prerequisites:** MUS 2520 with a minimum grade of D-**Corequisites:** MUS 1800**Term Offered:** Spring**MUS 2570 Piano Class For Music Majors III**

[1 credit hour]

Provides instruction in keyboard skills required for the various degree programs. Progressive sequence of courses stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

**Prerequisites:** MUS 1580 with a minimum grade of C**Term Offered:** Fall**MUS 2580 Piano Class For Music Majors IV**

[1 credit hour]

Provides instruction in keyboard skills required for the various degree programs. Progressive sequence stressing technique, repertoire, sight reading, harmonization, improvisation and transposition. Includes keyboard technology.

**Prerequisites:** MUS 2570 with a minimum grade of C**Term Offered:** Spring**MUS 2590 Class Piano For Piano Majors**

[2 credit hours]

MUS-2590 KEYBOARD FUNDAMENTALS for PIANO MAJORS, to be taken in conjunction with music theory. Fundamental keyboard skills including harmony, technique, transposition, improvisation, sight reading, score reading, and ensemble playing.

**Corequisites:** MUS 1610, MUS 2610**MUS 2610 Music Theory And Ear Training III**

[4 credit hours]

Continuation of 1620. Students develop proficiency in all musical elements through analytical, written and aural studies. Primary materials are the common practice period literature and small formal units. Includes computer technology.

**Prerequisites:** MUS 1620 with a minimum grade of C**Term Offered:** Fall**MUS 2620 Music Theory And Ear Training IV**

[4 credit hours]

Continuation of 2610. Students are introduced to contemporary topics, styles and music through analysis and creative assignments. Dictation and sightsinging studies will also develop topics from MUS 2610. Includes computer technology.

**Prerequisites:** MUS 2610 with a minimum grade of C**Term Offered:** Spring**MUS 2700 Jazz Improvisation I**

[2 credit hours]

Practical application of beginning jazz improvisation techniques as applied to modal, blues and simple jazz standards. Basic chord-scale relationships, ear training, and style analysis is presented.

**Prerequisites:** MUS 1700 with a minimum grade of C**Term Offered:** Fall**MUS 2710 Jazz Improvisation II**

[2 credit hours]

Practical application of intermediate jazz improvisation techniques as applied to jazz standards and bebop playing.

**Prerequisites:** MUS 2700 with a minimum grade of C**Term Offered:** Spring**MUS 2800 Applied Music**

[1-4 credit hours]

Private music lessons for sophomore music majors.

**Prerequisites:** MUS 1800 with a minimum grade of B**Term Offered:** Spring, Summer, Fall**MUS 2990 Special Projects**

[1-3 credit hours]

Designed to meet the needs of individual students who wish to pursue projects in the area of music.

**Term Offered:** Summer

**MUS 3010 University Band**

[1 credit hour]

Band ensembles include Wind Ensemble, Symphonic Band, Marching Band, and Varsity Pep Band. Ensembles open to all students. Contact the instructor for audition information.

**Term Offered:** Spring, Fall

**MUS 3020 Jazz Ensemble**

[1 credit hour]

Students rehearse and perform a diverse repertoire for large jazz ensemble. Open to all students by audition in the first week of each semester and/or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3030 Brass Choir**

[1 credit hour]

Open to a limited number of qualified students.

**Term Offered:** Spring

**MUS 3040 University Wind Ensemble**

[1 credit hour]

Open to a limited number of qualified students.

**MUS 3050 Chamber Music Ensembles**

[1 credit hour]

The study and performance of chamber music literature in classical or jazz Styles. By permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3060 Symphonic Band**

[1 credit hour]

Students rehearse and perform a diverse concert band repertoire. Open to all students through audition or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3070 Varsity Band**

[1 credit hour]

Students rehearse and perform a diverse athletic band repertoire. Open to all students through audition or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3090 University Orchestra**

[1 credit hour]

Performs a variety of symphonic repertoire. Open to all students through audition.

**Term Offered:** Spring, Fall

**MUS 3100 Introduction to Opera I**

[1 credit hour]

Introducing young singers to the art form of opera through a blended model of lecture and skill building participation exercises.

**Term Offered:** Spring, Fall

**MUS 3120 Intro to Opera II**

[1 credit hour]

Part II of the Intro to Opera classes that prepare singers in the art form of opera through a blended model of lecture and skill building participation exercises as well as participation in the staged production by helping with production aspects such as costumes, set building, marketing, make-up, and super-titles.

**Prerequisites:** MUS 3100 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MUS 3130 University Chorus**

[1 credit hour]

This non-auditioned mixed (SATB) choral ensemble is open to any student. Performing music in a variety of styles, this ensemble places a primary focus on developing musicianship and basic vocal technique.

**Term Offered:** Spring, Summer, Fall

**MUS 3140 Concert Chorale**

[1 credit hour]

This large, auditioned, mixed (SATB) choral ensemble is made up of 40-60 singers. This group is primarily made up of non-music majors who excel in vocal technique and production and who display high-level musical ability. They perform regularly on and off campus. This ensemble requires an audition and instructor approval.

**Term Offered:** Spring, Fall

**MUS 3150 Jazz Vocalstra**

[1 credit hour]

Students rehearse and perform traditional vocal Jazz literature and Vocalese. Open to qualified students by audition at the beginning of each semester and/or permission of instructor.

**Term Offered:** Spring, Fall

**MUS 3160 Rocket Choristers**

[1 credit hour]

This non-auditioned treble voice (SSAA) choral ensemble is open to any student. Performing music in a variety of styles, this ensemble places a primary focus on developing musicianship and basic vocal technique.

**Term Offered:** Spring, Fall

**MUS 3170 Chamber Singers**

[1 credit hour]

This auditioned mixed (SATB) choral ensemble is the premiere choral ensemble at the University of Toledo. With a focus on advanced vocal techniques and performance, this ensemble requires an audition and instructor approval.

**Term Offered:** Spring, Summer, Fall

**MUS 3180 Glee Club**

[1 credit hour]

This non-auditioned Tenor/Bass voiced (TTBB) choral ensemble is open to any student. Performing music in a variety of styles, this ensemble places a primary focus on developing musicianship and basic vocal technique.

**Term Offered:** Spring, Fall

**MUS 3190 Opera Workshop**

[1 credit hour]

Performs both contemporary and classic Opera. Open to a limited number of qualified students.

**Term Offered:** Spring, Fall

**MUS 3200 Opera Production**

[1 credit hour]

Audition only ensemble, with pre-requisites required of Intro to Opera I and Intro to Opera II. This course is designed to provide students with a complete experience in developing the craft of opera from all aspects including marketing, backstage, on stage and the front of the house. This is an advanced performance course for upper division vocal performance students. Building on the skills and experience from (MUS 3100) Intro to Opera I and (MUS 3120) Intro to Opera II this course is designed to provide real-life professional experience in opera production.

**Prerequisites:** MUS 3100 with a minimum grade of D- and MUS 3120 with a minimum grade of D-

**Term Offered:** Spring, Fall

**MUS 3260 Advanced Electronic Music**

[3 credit hours]

Both lecture sessions and creative lab assignments. Pre-requisite is MUS 2260 or by permission of the instructor. In particular, the current computer application Reason is examined and put to test in fine detail. Students will use the application in both sound-recording and virtual, MIDI instrument production. Lab productions are published.

**Prerequisites:** MUS 2260 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 3270 Advanced Recording Techniques**

[2 credit hours]

Both lecture sessions and creative lab assignments. Pre-requisite is MUS 2270 or by permission of the instructor. Material emphasizes music production in a professional recording studio. Students collaborate in the tracking, mixing, and mastering of complete song titles both originals and covers. Students will self-publish completed songs.

**Prerequisites:** MUS 2270 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 3280 Concert And Event Production**

[3 credit hours]

The presentation of cultural and commercial entertainment in the form of concert events is examined from artistic, technical, and business viewpoints. The roles of the cultural impresario and concert promoter in contemporary society are examined.

**Prerequisites:** MUS 2280 with a minimum grade of D-

**MUS 3290 Music Industry Practicum**

[1 credit hour]

Provides a practical application of the skills acquired in MUS 3280, Concert and Event Production. Students gain experience working on various campus musical productions and events.

**Prerequisites:** MUS 3280 with a minimum grade of D-

**MUS 3410 Music History And Literature II**

[3 credit hours]

A study of the literature, composers, theorists, trends and musical style of Western Music from Plainchant through Early Classic.

**Term Offered:** Fall

**MUS 3420 Music History And Literature III**

[3 credit hours]

An intensive study of the music of the Late Classic period to the present day through the examination of major trends and styles.

**Term Offered:** Spring

**MUS 3450 Jazz History And Literature**

[3 credit hours]

An in-depth study of jazz styles, trends, performers and composers geared for music majors.

**Term Offered:** Spring

**MUS 3470 Theatre Sound**

[3 credit hours]

Students study the methods and techniques of sound production and design used in the theatre. Tools and techniques of audio production are used in laboratory recording and mixdown. (Alternate years.)

**Prerequisites:** MUS 2270 with a minimum grade of C or THR 1040 with a minimum grade of C

**MUS 3500 Conducting**

[2 credit hours]

Basic baton techniques and rehearsal routine applicable to both vocal and instrumental conducting. Preparation of scores and opportunity for conducting experience with student groups. Includes MUS 1000:002 and video recording technology.

**Prerequisites:** MUS 1620 with a minimum grade of C

**Term Offered:** Fall

**MUS 3510 Choral Conducting**

[2 credit hours]

Conducting techniques and rehearsal routine especially concerned with choral groups. Opportunities to direct choral groups. Includes MUS 1000:002 and video recording technology.

**Term Offered:** Spring, Summer

**MUS 3520 Instrumental Conducting**

[2 credit hours]

Conducting techniques and rehearsal routine especially concerned with instrumental ensembles. Opportunities to direct student instrumental groups. Includes MUS 1000:002 and video recording technology.

**Prerequisites:** MUS 3500 with a minimum grade of C

**Term Offered:** Spring

**MUS 3530 Marching Band Techniques**

[1 credit hour]

The pedagogy and administration of marching bands in secondary schools. Includes practical laboratory experiences and use of relevant technology and software.

**Term Offered:** Fall

**MUS 3540 Jazz Synthesis**

[1 credit hour]

Instruction in the art of improvisation in the jazz style. A study of jazz harmony, melodic construction, keyboard voicings and practice materials. Lab instruction in combo performance techniques and repertoire. May be repeated for credit.

**Prerequisites:** MUS 2620 with a minimum grade of D-

**MUS 3550 Vocal Pedagogy and Literature 1**

[2 credit hours]

This class will provide students with a twofold practical application of how to teach varied forms of vocal literature as it relates to pedagogical strategies and vocal technique. This class also includes a Vocal Literature review from the Renaissance period to the 18th century Classical repertoire. This review of Vocal Literature would apply to pedagogical techniques such as stylistic considerations, phrasing, range, language and vocal demands through breath and support..

**Prerequisites:** MUS 2410 with a minimum grade of D-**Term Offered:** Spring, Fall**MUS 3560 Jazz Pedagogy And Conducting**

[2 credit hours]

An in-depth study of Jazz pedagogical materials and methods as well as rehearsal and conducting techniques.

**Prerequisites:** MUS 2620 with a minimum grade of C**Term Offered:** Spring, Fall**MUS 3570 Guitar Pedagogy**

[3 credit hours]

Comprehensive study of techniques and materials for private and group guitar instruction.

**MUS 3580 Functional Piano Techniques**

[2 credit hours]

Designed for keyboard majors to develop functional skills and harmonization, improvisation, transposition, sight reading, score reading, etc. Successful completion of this course fulfills the piano requirement for student teaching and Licensure.

**Prerequisites:** MUS 2590 with a minimum grade of C**Term Offered:** Spring**MUS 3590 Piano Pedagogy**

[2 credit hours]

Exploration of techniques and materials for comprehensive, private and group instruction.

**Term Offered:** Spring, Fall**MUS 3610 Form And Analysis**

[3 credit hours]

The study of musical structures: the theme, the motive, the phrase and analysis of homophonic and polyphonic forms and procedures.

**Prerequisites:** MUS 2620 with a minimum grade of C**Term Offered:** Fall**MUS 3630 Instrumentation**

[3 credit hours]

A study of wind, percussion and string instrumentation; scoring for small ensembles, band and orchestra. Opportunities for performances of student scores by university organizations. Includes computer technology.

**Prerequisites:** MUS 2620 with a minimum grade of C**Term Offered:** Spring**MUS 3650 Jazz Arranging And Composition I**

[3 credit hours]

Scoring for contemporary jazz ensembles. A study of jazz notations, voicing, orchestration and composition for small jazz groups and the rhythm section.

**Prerequisites:** MUS 2620 with a minimum grade of C**Term Offered:** Fall**MUS 3660 Jazz Arranging And Composition II**

[3 credit hours]

Advanced scoring for contemporary jazz ensembles. A study of notations, voicing, orchestration and composition for large jazz groups.

**Prerequisites:** MUS 3650 with a minimum grade of C**Term Offered:** Spring**MUS 3700 Jazz Improvisation III**

[2 credit hours]

Practical application of advanced jazz improvisation techniques as applied to post-bop, fusion and avant-garde playing.

**Prerequisites:** MUS 2710 with a minimum grade of C**Term Offered:** Fall**MUS 3710 Jazz Improvisation IV**

[2 credit hours]

Practical application of jazz improvisation techniques as applied to contemporary and chromatic jazz composition and performance.

**Prerequisites:** MUS 3700 with a minimum grade of C**Term Offered:** Spring**MUS 3800 Applied Music**

[1-4 credit hours]

Private music lessons for junior music majors.

**Prerequisites:** MUS 2800 with a minimum grade of B**Term Offered:** Spring, Summer, Fall**MUS 3810 Recital**

[1 credit hour]

A juried public performance of no more than 25-minutes of musical compositions selected from repertoire studied in MUS 3800 and in consultation with the student's major applied professor.

**Prerequisites:** MUS 2800 with a minimum grade of C**Corequisites:** MUS 3800**Term Offered:** Spring, Fall**MUS 4290 Music Industry Internship**

[2-6 credit hours]

Designed to provide students with professional experience in their area of interest within the music industry; students may enroll for variable credit internships up to 6 credits.

**Prerequisites:** (MUS 3280 with a minimum grade of D- and MUS 3290 with a minimum grade of D- and MUS 2270 with a minimum grade of D- and MUS 3270 with a minimum grade of D-)**MUS 4410 Instrumental Music Literature**

[3 credit hours]

Course will examine the development of the orchestral and chamber repertoire, from their origins to the present day.

**Prerequisites:** (MUS 2410 with a minimum grade of C and MUS 2420 with a minimum grade of C)**Term Offered:** Spring**MUS 4420 Vocal Pedagogy and Literature 2**

[2 credit hours]

This course is the second class in a two-semester sequence. This class will continue to build upon the twofold practical applications of how to teach varied forms of vocal literature as it relates to pedagogical strategies and vocal technique.

**Prerequisites:** MUS 3550 with a minimum grade of D-**Term Offered:** Spring, Fall



**MUS 4450 Keyboard Literature**

[3 credit hours]

A survey of piano or organ/harpsichord literature from earliest publications to the present. Emphasis on a particular period or genre at the discretion of the instructor.

**Term Offered:** Spring, Fall

**MUS 4460 Guitar History And Literature**

[3 credit hours]

The history and literature of the guitar, including a study of the Renaissance and Baroque lute, vihuela and Baroque guitar, 19th and 20th century instruments.

**MUS 4620 Counterpoint: Introduction**

[3 credit hours]

The study of counterpoint in modal, tonal, and contemporary styles. Studies include contrapuntal techniques such as imitation, canon, invertible counterpoint, non-harmonics and the balance of consonance and dissonance. Formal constructions studied include motets, canons, inventions, and fugues.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Spring

**MUS 4690 Seminar In Music Composition**

[2 credit hours]

May be repeated, but maximum accumulated credit is six hours toward graduation. Beginning composition including writing in the smaller musical forms. Opportunity for performance of original student compositions.

**Prerequisites:** MUS 2620 with a minimum grade of C

**Term Offered:** Spring, Fall

**MUS 4800 Applied Music**

[1-4 credit hours]

Private music lessons for seniors.

**Prerequisites:** MUS 3800 with a minimum grade of B

**Term Offered:** Spring, Summer, Fall

**MUS 4810 Recital**

[1 credit hour]

A juried public performance of no more than 50-minutes of musical compositions selected from repertoire studied in MUS 4800 and in consultation with a student's major applied professor.

**Prerequisites:** MUS 4800 with a minimum grade of B

**Corequisites:** MUS 4800

**Term Offered:** Spring, Fall

**MUS 4850 Advanced Vocal Pedagogy**

[3 credit hours]

An upper-division level course designed to more intricately address pedagogical strategies for vocal instruction, with an emphasis on surveying methods and research in singing voice specialization as it relates to vocal dysfunction and correction within the context of vocal instruction. This course aims to train future singer/vocal instructors to appropriately teach students of all ages and abilities, as well as diagnose and correct common vocal faults and dysphonias.

**Prerequisites:** MUS 3550 with a minimum grade of D- and MUS 4420 with a minimum grade of D-

**Term Offered:** Spring

**MUS 4980 Seminar: Special Topics**

[1-3 credit hours]

Critical inquiry into specific topics through lectures, class seminar reports and discussion. Seminar topics announced in semester schedule of classes.

**Term Offered:** Spring, Summer, Fall

**MUS 4990 Special Projects**

[1-3 credit hours]

Designed to meet the needs of individual students who wish to pursue projects in the area of music.

**Term Offered:** Spring, Summer, Fall

# MUSIC EDUCATION (MED)

## MED 1000 Music Education Lab

[0 credit hours]

Experiential learning for music education majors. All music education majors must register for this course when enrolled in the following classes: MUS 1500, 1510, 1530, 1550, 1560, 3500, 3510, 3520, or any MED course. A total of 5 semesters is required. Offered as P/NC only. - 0 hours.

**Term Offered:** Spring, Fall

## MED 3000 Foundations Of Music Education

[2 credit hours]

General overview of music education. Addresses history and philosophy of music education, music in a diverse society, classroom observation skills, analysis of music teaching, classroom communication and educational theories.

**Term Offered:** Spring, Fall

## MED 3030 Music For The Early Childhood Teacher

[2 credit hours]

Topics: Children's voices, music literacy, appreciation, creativity, classroom instruments. Analysis of music books, comparative methodology, curriculum integration. May include field experience.

**Prerequisites:** MUS 2200 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## MED 3300 Elementary And Secondary School Instrument Methods For Music Majors

[3-4 credit hours]

Choral/Gen cluster 3 cr.; Inst cluster 4 cr. A study of the techniques and teaching procedures used in the presentation of the instrumental music program in elementary and secondary schools. Field experience required. Includes participation in MUS 1000:002.

**Term Offered:** Spring

## MED 3310 Music For Children

[3 credit hours]

Topics: Children's voices, music reading readiness and music reading, appreciation, creativity, use of classroom instruments. Projects: Analysis of music books for children, a comparative review of Orff, Kodaly, Dalcroze, & Gordon. Field experience required.

**Term Offered:** Spring, Fall

## MED 3320 Secondary School Vocal Methods For Music Majors

[3-4 credit hours]

Choral/General cluster 4 cr.; Instrumental cluster 3 cr. An overview of secondary school problems of vocal music education. Field experience required. Includes participation in MUS 1000:002.

**Term Offered:** Fall

## MED 3330 Early Childhood Music Methods For Music Majors

[3 credit hours]

Topics include children's voices, music readiness skills, appreciation, creativity, use of classroom instruments. Projects include keyboard technology, analysis of basic series, a comparative review of Orff, Kodaly, Dalcroze and Gordon. Includes computer and keyboard technology and field experience.

## MED 4230 Integrating Aesthetic Experience

[3 credit hours]

This course will provide students majoring in education an overview of the role of music and art in educational curriculum development. Students will learn about the history of art and music through lecture, discussion and participation in art and music activities and develop methods of teaching art and music in the classroom. Interdisciplinary teaching and curriculum planning methods will be a focus of the course, affording students methods of incorporating the historical, cultural and social aspects of art and music in a general curriculum. (Students may enroll in either the Music or Art Education Sections)

**Term Offered:** Fall

## MED 4900 Student Teaching Seminar

[2 credit hours]

This course is required for all music education majors. This course focuses reflectivity on common experiences in student teaching. Attention is also given to resume preparation, portfolio use and job interviews.

**Term Offered:** Spring, Fall

## MED 4930 Student Teaching

[6-12 credit hours]

This course is required for all music education majors. Planned field experiences in public school classrooms under the direction of University supervisors. Observation of teaching of experienced teachers; gradual acceptance of full teaching responsibility by student teacher. Must register for 6 hours elementary and 6 hours secondary.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

## MED 4990 Individual Study In Music Education For Undergraduate Students

[1-3 credit hours]

Individual study is designed to provide a student with the opportunity to work individually on professional interests and concerns under the direction of the faculty of the Department of Music.

**Term Offered:** Spring, Summer, Fall

## NATURAL SCIENCE (NASC)

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### **NASC 1100 Our Physical World**

[3 credit hours]

Elementary study of motion and gravity, thermodynamics, wave phenomena, light, electricity, magnetism, models of the atom, the solar system, stars and galaxies.

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

### **NASC 1110 Physical World Laboratory**

[1 credit hour]

Quantitative measurements and predictions concerning the physical universe in a laboratory environment. Motion, electric and magnetic fields, properties of matter, temperature and heat, radioactive decay. Two hours of laboratory per week.

**Corequisites:** NASC 1100

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

# NATURAL SCIENCES & MATHEMATICS (NSM)

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## **NSM 1000 Natural Sciences & Mathematics**

[2 credit hours]

THIS COURSE IS REQUIRED BY ALL UNDERGRADUATE PROGRAMS IN THE COLLEGE. Course will introduce new students to the University and college, provide information on requirements, regulations, campus resources and career exploration, and help students achieve their academic goals.

**Term Offered:** Spring, Fall

# NURSING (NURS)

## NURS 1000 Professional Nursing Orientation

[1 credit hour]

Course provides opportunity for development of academic, personal, and interpersonal skills required to become a successful, independent learner, introduces student to professional nursing as a career.

**Term Offered:** Spring, Fall

## NURS 3040 Nursing to Promote Wellness Across the Lifespan

[5 credit hours]

Focus on wellness and primary prevention across the lifespan. Introduction to nursing as a discipline. Emphasis on concepts of wellness, communication, lifespan, clinical judgment and physiologic processes. Recognize individuals in context of family and community. Student experiences in community-based settings.

**Corequisites:** NURS 3080, NURS 3150, NURS 3190

**Term Offered:** Spring, Summer, Fall

## NURS 3080 Fundamentals of Nursing and Assessment Across the Lifespan

[5 credit hours]

Focus on holistic assessment of individuals across the lifespan. Emphasis on assessment, skills, technology and professional nursing role. Experiential learning with peers in a simulated environment.

**Corequisites:** NURS 3040, NURS 3150, NURS 3190

**Term Offered:** Spring, Summer, Fall

## NURS 3110 Nursing Agency II: Assessment

[3 credit hours]

Provides for acquisition of knowledge and development of skill in comprehensive nursing assessment.

**Term Offered:** Spring, Summer, Fall

## NURS 3120 Adult Health Nursing I

[7 credit hours]

Care of adults with common nursing problems using Orem's Self-Care Deficit Theory of Nursing.

**Prerequisites:** (NURS 3010 (may be taken concurrently) with a minimum grade of C and NURS 3110 (may be taken concurrently) with a minimum grade of C and NURS 3170 (may be taken concurrently) with a minimum grade of C and NURS 3210 (may be taken concurrently) with a minimum grade of C and NURS 4950 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

## NURS 3130 Gerontological Nursing

[3 credit hours]

Focus on theories and concepts of aging and health, based on Universal Self-Care Requisites from Orem's Self-Care Deficit Theory of Nursing.

**Prerequisites:** NURS 4030 (may be taken concurrently) with a minimum grade of C and NURS 4020 (may be taken concurrently) with a minimum grade of C and NURS 3620 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## NURS 3150 Pathopharmacology 1

[3 credit hours]

Focus on fundamental concepts in pathophysiology and pharmacology across the life span. Foundation for understanding disease processes and drugs [i.e. therapeutic outcomes and potential drug interactions].

**Corequisites:** NURS 3040, NURS 3080, NURS 3190

**Term Offered:** Spring, Summer, Fall

## NURS 3170 Concepts Of Pathophysiology

[3 credit hours]

Basic science of pathophysiology of disease across the life span. Prepares for critical thinking in application of concepts to nursing practice.

**Term Offered:** Spring, Summer, Fall

## NURS 3180 Concepts Of Nursing Pharmacology

[3 credit hours]

Fundamental pharmacologic principles of physiological response to drugs, therapeutic outcomes and potential drug interactions. Prepares for critical thinking in application of pharmacotherapy principles to nursing.

**Prerequisites:** NURS 3010 (may be taken concurrently) with a minimum grade of C and NURS 3110 (may be taken concurrently) with a minimum grade of C and NURS 3210 (may be taken concurrently) with a minimum grade of C and NURS 3170 (may be taken concurrently) with a minimum grade of C and NURS 4950 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## NURS 3190 Nursing Research 1

[2 credit hours]

Focus on introduction of concepts, issues, and processes in nursing research.

**Corequisites:** NURS 3040, NURS 3080, NURS 3150

**Term Offered:** Spring, Summer, Fall

## NURS 3280 Advanced Fundamentals

[3 credit hours]

Focus on application of assessment skills and demonstrating safe procedures for high risk interventions in simulated experiences. Emphasis on the concepts of clinical judgment, professional behaviors, and collaboration.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3290, NURS 3300, NURS 3400, NURS 3540

**Term Offered:** Spring, Summer, Fall

## NURS 3290 Nursing Research 2

[1 credit hour]

Introduction to evidence based practice. Emphasis is on learning how to evaluate research for evidence based practice in nursing as a baccalaureate nurse.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3300, NURS 3400, NURS 3540

**Term Offered:** Spring, Summer, Fall



**NURS 3300 Nursing Care of Persons with Health Challenges**

[4 credit hours]

Focus on holistic care of adults and older adults in acute care settings experiencing health problems. Emphasis on the concepts of leadership, collaboration, and communication. Recognizes individuals in context of family and community.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3080 with a minimum grade of C and NURS 3150 with a minimum grade of C

**Corequisites:** NURS 3280, NURS 3400, NURS 3540

**Term Offered:** Spring, Summer, Fall

**NURS 3400 Family Health**

[4 credit hours]

Focus on health, wellness and illness of child - bearing families and children across various settings. Emphasis on concepts of gas exchange, sexuality, reproduction, grief, mood and affect, family, safety, advocacy and family communication. Recognizes individuals in context of family and community.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3280, NURS 3300, NURS 3540

**Term Offered:** Spring, Summer, Fall

**NURS 3540 Pathopharmacology 2**

[3 credit hours]

Focuses on selected alterations and related pharmacology across the life span. Foundation for understanding disease processes and drugs [i.e. therapeutic outcomes and potential drug interactions]. Basis for critical thinking in nursing to help clients cope with effects of illness and return to health. Emphasis on concepts of: clotting, elimination, gas exchange, intracranial regulation, mood & affect, nutrition, patient education, perfusion, reproduction, sensory perception, tissue integrity.

**Prerequisites:** NURS 3040 with a minimum grade of C and NURS 3190 with a minimum grade of C and NURS 3150 with a minimum grade of C and NURS 3080 with a minimum grade of C

**Corequisites:** NURS 3280, NURS 3300, NURS 3400

**Term Offered:** Spring, Summer, Fall

**NURS 3620 Women's Health Nursing**

[5 credit hours]

Provides didactic and clinical opportunities relevant to care of women across lifespan. Various clinical settings used in application of nursing system with a self-care framework.

**Prerequisites:** (NURS 3120 (may be taken concurrently) with a minimum grade of C and NURS 3180 (may be taken concurrently) with a minimum grade of C and NURS 3630 (may be taken concurrently) with a minimum grade of C)

**Corequisites:** NURS 4020, NURS 4030

**Term Offered:** Spring, Summer, Fall

**NURS 3630 Mental Health Nursing**

[5 credit hours]

Psychosocial influences on self-care agency are presented within the context of culturally competent nursing care. Concepts are interpreted within self-care deficit theory and applied in clinical experiences.

**Prerequisites:** (NURS 3010 (may be taken concurrently) with a minimum grade of C and NURS 3110 (may be taken concurrently) with a minimum grade of C and NURS 3210 (may be taken concurrently) with a minimum grade of C and NURS 3170 (may be taken concurrently) with a minimum grade of C and NURS 4950 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 3640 Parent-Child Nursing**

[5 credit hours]

Nursing care of infants, children, and adolescents within families and groups using Orem's Self Care Deficit Theory of Nursing. Clinical experiences in wellness, acute, and chronic care settings.

**Prerequisites:** (NURS 3620 (may be taken concurrently) with a minimum grade of C and NURS 4020 (may be taken concurrently) with a minimum grade of C and NURS 4030 (may be taken concurrently) with a minimum grade of C)

**Corequisites:** NURS 3130, NURS 4010, NURS 4250

**Term Offered:** Spring, Summer, Fall

**NURS 4010 Community Health Nursing**

[5 credit hours]

Focuses on design and implementation of nursing care for aggregates and communities. Individual and family care is provided within the context of population health.

**Prerequisites:** (NURS 3620 (may be taken concurrently) with a minimum grade of C and NURS 4030 (may be taken concurrently) with a minimum grade of C) and NURS 4020 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4020 Leadership And Management In Nursing**

[3 credit hours]

Focus on principles and theories of management/leadership as a basis for provision of nursing care.

**Prerequisites:** (NURS 3120 (may be taken concurrently) with a minimum grade of C and NURS 3180 (may be taken concurrently) with a minimum grade of C and NURS 3630 (may be taken concurrently) with a minimum grade of C)

**Corequisites:** NURS 4030

**Term Offered:** Spring, Summer, Fall

**NURS 4030 Adult Health Nursing II**

[7 credit hours]

Design and implementation of nursing systems for the adult population with complex health states. Includes application of nursing leadership principles in clinical settings.

**Prerequisites:** (NURS 3120 (may be taken concurrently) with a minimum grade of C and NURS 3180 (may be taken concurrently) with a minimum grade of C and NURS 3630 (may be taken concurrently) with a minimum grade of C)

**Term Offered:** Spring, Summer, Fall

**NURS 4080 Perioperative Nursing Care**

[4 credit hours]

Clinical elective with focus on the practice of perioperative nursing.

**Prerequisites:** (NURS 3120 with a minimum grade of C and NURS 3630 with a minimum grade of C)**Term Offered:** Spring, Summer, Fall**NURS 4100 Transition to BSN Practice**

[3 credit hours]

Explores concepts relevant to the transition from ADN/Diploma RN role to BSN nursing practice.

**Term Offered:** Spring, Fall**NURS 4110 Applied Health Assessment Across the Lifespan**

[3 credit hours]

This course emphasizes the concepts and skills essential to the assessment parameter of the nursing process to broaden the learners' knowledge base and to increase assessment skills in all settings.

**Prerequisites:** NURS 4100 with a minimum grade of C**Term Offered:** Spring, Fall**NURS 4120 Nursing Leadership And Management**

[5 credit hours]

Focus on principles of management and leadership for the baccalaureate prepared nurse. Provision of professional care in a variety of settings.

**Prerequisites:** (NURS 4230 (may be taken concurrently) with a minimum grade of C and NURS 4180 (may be taken concurrently) with a minimum grade of C and NURS 4190 (may be taken concurrently) with a minimum grade of C)**Term Offered:** Spring, Fall**NURS 4130 Nursing Care of Persons in Crisis 1**

[4 credit hours]

Focus on nursing care of persons across the lifespan in the acute care setting with mental health issues. Emphasis on concepts related to coping and stress tolerance; emotion; cognitive function; and maladaptive behavior.

**Prerequisites:** NURS 3280 with a minimum grade of C and NURS 3300 with a minimum grade of C and NURS 3540 with a minimum grade of C and NURS 3290 with a minimum grade of C and NURS 3400 with a minimum grade of C**Corequisites:** NURS 4240, NURS 4260**Term Offered:** Spring, Summer, Fall**NURS 4180 Theoretical And Professional Foundations In Nursing**

[4 credit hours]

Focus on RN student's transition to professional higher education and theory-based practice. Current professional issues are explored. Political, socioeconomic, ethical and legal issues are critically examined and discussed.

**Term Offered:** Spring, Fall**NURS 4190 Interpersonal Strategies In Nursing Of Older Individuals**

[6 credit hours]

Focus on application of Self-Care Deficit Theory of Nursing and health maintenance for older individuals within the family and environment; emphasis on development of interpersonal skills for RNs.

**Prerequisites:** NURS 4180 (may be taken concurrently) with a minimum grade of C**Term Offered:** Spring, Fall**NURS 4200 Population Focused Care**

[5 credit hours]

Focuses on the design and implementation of nursing care for aggregates and communities. Individual and family care is provided within the context of population focused care.

**Prerequisites:** (NURS 4190 (may be taken concurrently) with a minimum grade of C and NURS 4230 (may be taken concurrently) with a minimum grade of C)**Term Offered:** Spring, Fall**NURS 4210 Applied Nursing Research**

[3 credit hours]

Emphasizes all phases of the research process. Analysis and application of research strategies for the professional nurse.

**Term Offered:** Spring, Fall**NURS 4220 Applied Pathophysiology And Pharmacology**

[4 credit hours]

Concepts of pathophysiology and pharmacology. Prepares for critical thinking in application of concepts to nursing practice.

**Term Offered:** Spring, Fall**NURS 4230 Applied Health Assessment**

[3 credit hours]

Nursing application of health history, physical and psychosocial assessment skills across the lifespan.

**Term Offered:** Spring, Fall**NURS 4240 Nursing Care of Persons in Crisis 2**

[8 credit hours]

Focus on changes in health in acute care settings across the lifespan. Emphasis on concepts related to oxygenation and hemostasis; homeostasis and regulation; protection and movement, and coping and stress tolerance.

**Prerequisites:** NURS 3280 with a minimum grade of C and NURS 3300 with a minimum grade of C and NURS 3400 with a minimum grade of C and NURS 3290 with a minimum grade of C and NURS 3540 with a minimum grade of C**Corequisites:** NURS 4130, NURS 4260**Term Offered:** Spring, Summer, Fall**NURS 4250 Professional Nursing Competency**

[2 credit hours]

This course provides an overview of NCLEX and practice in the application of knowledge required for the professional nursing examination. Required for passing of exam.

**Prerequisites:** (NURS 3620 (may be taken concurrently) with a minimum grade of C and NURS 4020 (may be taken concurrently) with a minimum grade of C and NURS 4030 (may be taken concurrently) with a minimum grade of C)**Term Offered:** Spring, Summer, Fall

**NURS 4260 Professional Development**

[3 credit hours]

This course facilitates the development and implantation of strategies to enable the synthesis of professional development for the baccalaureate nurse. The course enables the student to recognize and understand the critical role that nurses play in health care delivery. Students will analyze principles of professional practice and will explore strategies to model the professional practice role in current clinical situations. This course also assists the student in the online classroom environment.

**Prerequisites:** NURS 3280 with a minimum grade of C and NURS 3300 with a minimum grade of C and NURS 3540 with a minimum grade of C and NURS 3290 with a minimum grade of C and NURS 3400 with a minimum grade of C

**Corequisites:** NURS 4130, NURS 4240

**Term Offered:** Spring, Summer, Fall

**NURS 4270 Applied Health Assessment Across the Lifespan**

[3 credit hours]

This course emphasizes the concepts and skills essential to the assessment parameter of the nursing process. The purpose of this course is to broaden the learners' knowledge base, to increase their assessment skills, and to facilitate their ability to apply these skills in a clinical setting. The knowledge from this course is immediately applicable to everyday patient care. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4290 Nursing Care of Older Adults**

[4 credit hours]

Focus on the analysis and application of health and illness concepts with older adults. Concepts include healthcare delivery, attributes & roles of the nurse, and patient profile concepts. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4300 Informatics in Nursing**

[2 credit hours]

Focuses on current and future topics of informatics in nursing. Foundation for competency in documentation, informatics-based theory, implementation of evidence-based quality measures, evolving trends, legal, ethical implications.

**Prerequisites:** NURS 4100 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4310 Research Methods and Evidence Based Practice**

[3 credit hours]

Introduction to concepts, issues and processes in nursing research and evidence-based practice. Emphasis is on the use of research as a baccalaureate-prepared nurse, including critical analysis and evaluation of published research for use in evidence-based practice.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4320 Pathopharmacology Across the Lifespan**

[4 credit hours]

Covers basic concepts of pathophysiology and pharmacology. Prepares the nurse for critical thinking in application of concepts to nursing practice.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4330 Nursing Leadership and Management**

[5 credit hours]

Students focus on the professional nurse's role in applying the principles and theories of leadership and management as a basis for provision of nursing care across healthcare delivery systems. Emphasis will be on leadership concepts to achieve safe, high quality patient-centered nursing care.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4340 Population Focused Care**

[5 credit hours]

This course facilitates the development and implementation of strategies to enable the synthesis of professional development for the baccalaureate nurse within the community. The course enables the student to recognize and understand the critical role that nurses play in community and public health care delivery. Students will analyze principles of public health and will explore strategies to model the professional practice role in current community clinical situations. This course also assists the student in the online classroom environment. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4350 Transition to BSN Practice**

[2 credit hours]

This course facilitates the development and implementation of strategies to enable the synthesis of professional development for the baccalaureate nurse. The course enables the student to recognize and understand the critical role that nurses play in health care delivery. Students will analyze principles of professional practice and will explore strategies to model the professional practice role in current clinical situations. This course also assists the student in the online classroom environment. This course is online.

**Term Offered:** Spring, Fall

**NURS 4360 Theory and Collaborative Practice**

[3 credit hours]

This course facilitates the development and implementation of strategies to enable the synthesis of nursing theory and collaborative practice for the baccalaureate nurse. The course enables the student to recognize and understand the critical role that nurses play in health care delivery collaboration. Students will analyze theories of nursing and will explore strategies to apply nursing theory in current clinical situations. This course also assists the student in the online classroom environment. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4370 Health Promotion and Wellness Across the Lifespan**

[3 credit hours]

Focus on wellness and health promotion across the lifespan. Health promotion has become a national priority and is a foundation to the care for people of all ages.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4390 Health Promotion and Wellness Across the Lifespan**

[3 credit hours]

Focus on wellness and primary prevention across the lifespan. Emphasis on concepts of wellness, communication, lifespan, and physiologic processes. Additional concepts include the role of the nurse in healthcare delivery as related to health promotion. This is an online course.

**Prerequisites:** NURS 4350 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4400 Quality and Safety in Nursing**

[2 credit hours]

Course examines responsibilities of baccalaureate prepared nurses in healthcare teams and ways they provide patient safety and quality care leading to optimum patient outcomes. This is an online course.

**Prerequisites:** NURS 4100 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4500 Leadership and Professional Development**

[3 credit hours]

Focus on the professional nurse's role in applying the principles of leadership. Emphasis will be on leadership and professional development concepts to achieve safe, high quality patient-centered nursing care.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Fall

**NURS 4510 Population Health**

[4 credit hours]

Focuses on the design and implementation of nursing care for aggregates and communities across the lifespan. Emphasis on professional nursing and health care concepts.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4620, NURS 4700, NURS 4760

**Term Offered:** Spring, Summer, Fall

**NURS 4520 Pathopharmacology for the Practicing RN**

[3 credit hours]

Basic concepts of pathophysiology and pharmacology. Prepares for critical thinking in application of concepts to nursing practice.

**Prerequisites:** NURS 4100 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4600 Critical Care Nursing**

[4 credit hours]

Clinical elective with focus on design and implementation of partially and wholly compensatory nursing systems for clients with critical health states.

**Prerequisites:** NURS 3120 with a minimum grade of C and NURS 3630 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4610 Translating Evidence for Nursing Practice**

[3 credit hours]

Introduces concepts, issues and processes in nursing evidence-based practice (EBP). Emphasis is on application of scientific evidence as a baccalaureate-prepared nurse, including critical appraisal and synthesis of evidence for EBP.

**Prerequisites:** NURS 4100 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**NURS 4620 Precepted Clinical Practicum**

[5 credit hours]

Focus on partnering with clients (individuals, families, groups and/or communities) who are dealing with complex health problems of any age group and setting. Emphasis on concepts of health-care delivery, attributes and roles of nurse, and care competencies. Includes weekly seminars relevant to clinical issues.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4510, NURS 4700, NURS 4760

**Term Offered:** Spring, Summer, Fall

**NURS 4700 Nursing Care of Persons and Families with Complex Care Needs**

[3 credit hours]

Focus on nursing care of people with complex health issues across the lifespan. Emphasis on care coordination and Interprofessional collaborative teamwork.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4510, NURS 4620, NURS 4760

**Term Offered:** Spring, Summer, Fall

**NURS 4760 Professional Nursing Competency**

[3 credit hours]

Focus on preparation for the National Council Licensure Examination for Registered Nurses (NCLEX – RN). All concepts in the curriculum are included in comprehensive review.

**Prerequisites:** NURS 4130 with a minimum grade of C and NURS 4240 with a minimum grade of C and NURS 4260 with a minimum grade of C

**Corequisites:** NURS 4510, NURS 4620, NURS 4700

**Term Offered:** Spring, Summer, Fall

**NURS 4990 Independent Study**

[1-3 credit hours]

Independent study in nursing.

**Term Offered:** Spring, Summer, Fall

# OCCUPATIONAL THERAPY (OCCT)

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## OCCT 2550 PURPOSEFUL LIVING ROLE OF OCCUPATIONAL THERAPY

[3 credit hours]

Introduces the occupational therapy profession and occupational therapy's role in maintaining functional daily living. Explore your daily occupations through self-reflection and develop strategies for personal growth.

**Term Offered:** Spring, Fall



# OPERATIONS & SUPPLY CHAIN MGMT (OSCM)

## **OSCM 3310 Computer And Model Based Business Decision Making** [3 credit hours]

An introduction to quantitative methods of decision making including linear programming, transportation, simulation, waiting line analysis, advanced decision theory and Markov chains. Computer packages and creative thinking will be emphasized.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

## **OSCM 3340 Quality Management and Process Improvement** [3 credit hours]

Covers major aspects of lean processes and managing total quality functions in manufacturing/service operations. Includes: quality assurance, process control techniques, product liability and organization of the quality function as well as process improvement tools such as lean principles, process analysis.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **OSCM 3600 Facility Planning** [3 credit hours]

The study of the design and planning of new facilities. Topics include product and process design, the application of CIM, FMS, capacity planning, facility location and layout, and job design.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

## **OSCM 3610 Operations Planning and Scheduling** [3 credit hours]

A study of operations planning and its relation to organizational goals. Students learn concepts of developing materials and resources requirement plans, capacity management, just-in-time, resource scheduling in manufacturing and service organizations. Emerging concepts in the discipline will also be discussed.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **OSCM 3660 Strategic Sourcing** [3 credit hours]

Relationship between supply management and firm's strategic goals, state-of-the-art supplier management, competing through effective supplier relationships, commodity strategy development, supplier negotiations, supplier selection and quality management, managing the RFP/RFQ process, cost management, and latest trends in sourcing and covered in the course.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## **OSCM 3750 Applied Regression Analysis** [3 credit hours]

This course emphasizes model formulation, tests of goodness-of-fit and significance of parameters for the traditional linear regression model. Business applications/cases and computer packages will be emphasized.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

## **OSCM 3760 Management Science: Cases And Applications** [3 credit hours]

A study of business applications emphasizing model formulation, identification and validation. The course includes linear programming, critical path methods, queuing and various modeling techniques using computer packages.

**Prerequisites:** OPMT 3310 with a minimum grade of D-

## **OSCM 4020 Statistics For Administrative Services** [3 credit hours]

An introduction to statistical methods, including measures of central tendency and dispersion, probability and probability distributions, sampling theory, decision theory, regression and correlation. Specifically designed for the Administrative Services program.

**Prerequisites:** MATH 1270 with a minimum grade of D-

## **OSCM 4150 Supply Chain Analytics and Cases** [3 credit hours]

This course focuses on developing skills in using techniques and software tools for the design and operational control of supply chains. Students will investigate issues relating to configuring supply chain networks (distribution systems), inventory deployment, planning and routing of transportation systems, warehouse and plant location and contract design etc. The focus will be on applications to practical situations. Necessary skills will be developed using cases, projects and presentations.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

## **OSCM 4210 Project Management** [3 credit hours]

This course covers planning, organizing and controlling projects. Topics such as project selection, scheduling, budgeting, resource management, project control, time-based competition and concurrent engineering will be discussed.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

## **OSCM 4250 Business Analytics-Techniques and Cases** [3 credit hours]

This course provides an introduction to the analytical tools and techniques used in business for decision making with focus on using data visualization, and data mining techniques. It also familiarizes and equips students with prescriptive and evaluative techniques. Industrial grade software along with case studies will be used.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

## **OSCM 4420 Service Operations Management** [3 credit hours]

The service sector is the dominant sector of the economy. Students will study various aspects of Operations Management as applied to service industries. Services for manufacturing will be emphasized.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

## **OSCM 4450 Buasiness Forecasting** [3 credit hours]

A study of qualitative and quantitative forecasting techniques. The course will cover applications of these analysis techniques to various functions such as finance, operations and supply chain management, marketing and economics. Students will also gain experience in using statistical software packages for forecasting.

**Prerequisites:** BUAD 2070 with a minimum grade of D-

**OSCM 4500 Supply Chain Strategy**

[3 credit hours]

The course examines firms' strategic management of resources, and discusses its importance and benefits to its overall competitiveness. The purpose of the course is to provide students with an understanding of the content of firms' supply chain strategy and the processes by which they are developed and implemented. Topics covered in the course are related to operations/supply chain strategy, including environmental analysis, sustainability, product/service design, structure and infrastructure, coordination strategy, logistics and risk management.

**Prerequisites:** BUAD 3020 with a minimum grade of D- and MKTG 3130 with a minimum grade of D- and (OSCM 3340 with a minimum grade of D- and OSCM 3610 with a minimum grade of D- or OSCM 3660 with a minimum grade of D-)

**OSCM 4750 Analysis of Variance**

[3 credit hours]

Analysis of variance and related topics such as factorial design and Latin squares. Experimental designs including repeated measures, factorial and nested designs.

**OSCM 4760 Sim Mod/Anlys Sppl Chn System**

[3 credit hours]

This course provides an introduction to the use of computer simulation for business decision making. Students are introduced to modeling uncertainty in supply chain systems using various techniques including Monte Carlo simulation, waiting line analysis, discrete event simulation and other emerging techniques using simulation software (such as @Risk, Simul8 and ARENA) and business cases.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**OSCM 4940 Internship**

[3 credit hours]

A prearranged work study program where students specializing in OPMT or SCM obtain on the job experience while learning and applying the basic concepts and techniques of their respective discipline.

**Term Offered:** Spring, Summer, Fall

**OSCM 4980 Contemporary Topics In Operations and Supply Chain Management**

[3 credit hours]

Selected current topics in Operations Management practice, trends and technology.

**Prerequisites:** BUAD 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

# PEACE AND JUSTICE STUDIES (PJS)

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## **PJS 1000 Introduction to Peace and Justice Studies**

[3 credit hours]

This survey course provides an overview to fundamental peace knowledge: theories of peace, ethics, violence, conflict and change in the context of historical and 21st century issues and events.

**Term Offered:** Spring, Fall

Core Social Sciences

## **PJS 2000 Nonviolence and Conflict Transformation Theory and Practice**

[3 credit hours]

This course provides an overview of theories and principles of nonviolence, ethics of conflict, and conflict transformation; it engages students in the application of practical methods and skills of peacebuilding through the lenses of these theories and principles.

Core Arts & Humanities

## **PJS 2500 Peace Education Facilitating Learning for Change in Schools and Beyond**

[3 credit hours]

The purpose of this course is to introduce the basic concepts, theories, and approaches to peace education. The course explores the theories of peace education, including pedagogical approaches to peace-learning for formal, informal, and non-formal learning settings. The course also introduces the substantive areas of peace education.

**Prerequisites:** PJS 1000 with a minimum grade of D- and PJS 2000 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **PJS 3000 Peace Lab Issues and Practices in Peace**

[3 credit hours]

Peace Lab is an experiential, issue-focused laboratory that introduces students to practical skills of research or program design for applied peacebuilding in a variety of settings. The project developed by the student is informed by and demonstrates understanding of their core peace studies knowledge. Students present their projects to the public in a scholarly fair/ conference organized by the course.

**Prerequisites:** PJS 1000 with a minimum grade of D- and PJS 2000 with a minimum grade of D- and PJS 2500 with a minimum grade of D-

## **PJS 4000 Senior Capstone Seminar**

[3 credit hours]

The Capstone Seminar provides the opportunity for the student to develop a formal, independent study culminating in a written discourse that advances our understanding of peace studies or a formal, independent project applying principles of peace studies to analyze a particular problem and culminating in a written discourse. The course builds on the work projects formulated in the Peace Lab (PJS 3000).

**Prerequisites:** PJS 1000 with a minimum grade of D- and PJS 2000 with a minimum grade of D- and PJS 2500 with a minimum grade of D- and PJS 3000 with a minimum grade of D-

# PHARMACOLOGY (PHCL) (PHCL)

## PHCL 2220 Drugs, Medicine And Society

[3 credit hours]

The course conveys a general knowledge of drugs, including how and where drugs act and the general pharmacology of specific classes of drugs, e.g., central nervous system active agents, bronchodilators, etc.

**Term Offered:** Spring

## PHCL 2600 Functional Anatomy And Pathophysiology I

[4 credit hours]

A study of functional anatomy, physiology and pathophysiology to serve as background for the understanding of the action of drugs.

**Prerequisites:** (CHEM 1240 with a minimum grade of D- and CHEM 1290 with a minimum grade of D- and BIOL 2150 with a minimum grade of D- and BIOL 2160 with a minimum grade of D- and BIOL 2170 with a minimum grade of D- and BIOL 2180 with a minimum grade of D-)

**Term Offered:** Fall

## PHCL 2610 Introductory Physiology

[3 credit hours]

This class is designed to give students a thorough introduction to human physiology and prepare them for success in the Pharmacy/ Pharmaceutical Science curriculum.

**Prerequisites:** BIOL 2170 with a minimum grade of D-

**Term Offered:** Spring, Fall

## PHCL 2620 Functional Anatomy And Pathophysiology II

[4 credit hours]

A continuation of PHCL 2600.

**Prerequisites:** PHCL 2600 with a minimum grade of D-

**Term Offered:** Spring

## PHCL 2900 Pharmacology Research Introduction

[1-3 credit hours]

The course will introduce the undergraduate student to research in pharmacology. Students will work with faculty members throughout the semester to learn a variety of fundamental laboratory procedures, including record keeping, pharmacological calculations, experimental design, set-up and conduct of assays, data analysis and research presentation.

**Term Offered:** Spring, Summer, Fall

## PHCL 3700 PHARMACOLOGY I: PRINCIPLES OF PHARMACOLOGY, AUTONOMIC PHARMACOLOGY AND RELATED PHARMACOLOGY

[3 credit hours]

An introduction to the principles of pharmacology and the pharmacology of the autonomic nervous system."

**Term Offered:** Fall

## PHCL 3720 PHARMACOLOGY II: ENDOCRINE, NSAID AND CARDIOVASCULAR PHARMACOLOGY

[2 credit hours]

The pharmacology of drugs acting upon the endocrine and reproductive systems will be discussed followed by a discussion of the non-steroidal antiinflammatory agents and the drugs used to treat hypertension and hyperlipidemia.

**Prerequisites:** PHCL 3700 with a minimum grade of C

**Corequisites:** MBC 3320, PHPR 3140

**Term Offered:** Spring

## PHCL 3730 BSPS Pharmacology II: Endocrine and CNS Pharmacology

[3 credit hours]

The pharmacology of drugs acting upon the endocrine and reproductive systems as well as for the management of sleep disorders, anxiety, affective illness, schizophrenia and seizure disorders.

**Prerequisites:** PHCL 3700 with a minimum grade of D-

**Term Offered:** Spring

## PHCL 3810 Pharmacology And Toxicology Laboratory

[1 credit hour]

The course will teach undergraduate students current methods in pharmacology and toxicology with an emphasis on practical, hands-on experience. Students will learn a variety of techniques commonly used in the pharmaceutical and toxicology industries.

**Prerequisites:** PHCL 3700 with a minimum grade of D-

**Term Offered:** Spring

## PHCL 4700 Pharmacology III: Cns And Cardiovascular Pharmacology

[2 credit hours]

The pharmacology of central nervous system active agents. Continues from PHCL 3720. Agents acting on the cardiovascular and renal systems are also discussed.

**Prerequisites:** PHCL 3700 with a minimum grade of C

**Term Offered:** Fall

## PHCL 4720 Pharmacology IV: Chemotherapeutic Agents

[2 credit hours]

The pharmacology of anti-infective chemotherapeutic agents is presented. Issues such as the mechanism of antimicrobial action, disposition, resistance and problems attending the use of antimicrobial drugs will be discussed.

**Prerequisites:** (PHCL 3700 with a minimum grade of C and MBC 3800 with a minimum grade of C)

**Term Offered:** Spring

## PHCL 4730 Toxicology I

[3 credit hours]

A synopsis of the basic elements of toxicology including dose-response, lethal dose-50, margin of safety, mechanisms of toxicity and nature of toxic injuries including mutagenesis, carcinogenesis, reproduction, and systemic toxicology. The toxicities of heavy metals and pesticides are also discussed.

**Corequisites:** PHCL 3700

**Term Offered:** Fall

**PHCL 4750 Toxicology II**

[3 credit hours]

This course provides the students with an overview of environmental toxicology, which emphasizes both air and water pollution. It also reviews the applications of different areas of toxicology, such as food toxicology emphasizing the safety standards of food and methods of evaluation of food safety, analytic toxicology and its applications in forensic toxicology and occupational toxicology. It also discusses general methods for toxicity evaluation.

**Prerequisites:** PHCL 3700 with a minimum grade of D-

**Term Offered:** Spring

**PHCL 4760 Toxicokinetics**

[3 credit hours]

The theory and practice of using kinetic principles to model the time course of toxic chemicals in the body and in the environment. Relation of the chemical time course to negative outcomes and application to risk assessment. Hands-on practice with kinetic analysis methods and software.

**Term Offered:** Summer, Fall

**PHCL 4780 Internship in Pharmacology/Toxicology**

[6-12 credit hours]

In this experiential course, students will acquire practical knowledge through hands-on experience in the area of Pharmacology and / or Toxicology by working at an academic, private, or governmental laboratory or a professional site.

**Prerequisites:** (PHCL 3730 with a minimum grade of D- and PHCL 3810 with a minimum grade of D- and MBC 3320 with a minimum grade of D- and MBC 3560 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

**PHCL 4810 BPS Pharmacology III: CNS and Cardiovascular Pharmacology**

[3 credit hours]

The pharmacology of central nervous system active agents and agents acting on the cardiovascular and renal systems.

**Prerequisites:** PHCL 3730 with a minimum grade of D-

**Term Offered:** Fall

**PHCL 4820 BPS Pharmacology IV: Chemotherapeutic Agents**

[3 credit hours]

The pharmacology of anti-infective chemotherapeutic agents including their mechanism of antimicrobial action, disposition, resistance and issues related to use.

**Prerequisites:** PHCL 4810 with a minimum grade of D-

**Term Offered:** Spring

**PHCL 4900 Honors Seminar In Pharmacology**

[1-3 credit hours]

To examine a specific question in the context of the primary literature in pharmacology and be able to present that in a seminar

**Term Offered:** Spring, Summer, Fall

**PHCL 4910 Problems In Pharmacology**

[1-3 credit hours]

An examination of a specific question in pharmacology which can be answered through application of experimental work.

**Term Offered:** Spring, Summer, Fall

**PHCL 4960 Honors Thesis In Pharmacology**

[2-5 credit hours]

An examination of a specific question in pharmacology which can be answered through application of experimental work, and a presentation in a thesis format.

**Term Offered:** Spring, Summer, Fall



# PHARMACY PRACTICE (PHPR)

## PHPR 1000 Orientation

[1 credit hour]

Lectures and small group discussions include University, Freshman Orientation, FYI subjects, plus introductory elements of Pharmacy professional culture.

**Term Offered:** Fall

## PHPR 2040 Introduction to Cosmetic Science

[1 credit hour]

An overview of the cosmetic and personal care industry. Topics will include business factors driving the industry, legal considerations which govern the industry, marketing views and perspectives, and various jobs available within the industry for student consideration after their graduation. An individual project will be required and will be present to the entire class.

**Term Offered:** Spring, Fall

## PHPR 3000 Pharmaceuticals and Dosage Form Design

[5 credit hours]

The lectures and labs in Pharmaceuticals and Dosage Form Design have an overarching theme of drug product knowledge. Topics for the lectures and labs include drug product design, pharmaceutical calculations, and an emphasis on contemporary pharmacy compounding.

## PHPR 3010 Pharmaceutical Calculations

[2 credit hours]

This course is intended to present the principles involved in solving any mathematical problem which may be encountered in the practice of pharmacy-logical thought processes will be used.

**Term Offered:** Fall

## PHPR 3020 Pharmaceuticals I

[3 credit hours]

A lecture introduction to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

**Corequisites:** PHPR 3010

**Term Offered:** Fall

## PHPR 3030 Pharmaceuticals II

[3 credit hours]

A continuation of PHPR 3020 as a lecture to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

**Prerequisites:** PHPR 3020 with a minimum grade of D- and PHPR 3010 with a minimum grade of D-

**Term Offered:** Spring

## PHPR 3040 Cosmetic Raw Materials

[2 credit hours]

Physical, chemical and cosmetic properties, function and use of the varied raw materials used in cosmetics and personal care products. Students will learn how and why these ingredients are present and how to select them for a given formulation. Topics include moisturizers, peptides, surfactants, silicones, preservatives, antioxidants, chelating agents, flavors and sweeteners, color additives, fragrances, thickeners, functional materials, active ingredients and miscellaneous ingredients.

**Prerequisites:** CHEM 1230 with a minimum grade of D- and CHEM 1240 with a minimum grade of D-

**Term Offered:** Spring, Fall

## PHPR 3050 Interprofessional Approach to Patient Care

[1 credit hour]

This course has been designed to prepare all health professions students to deliberately and constructively work together with the common goal of building a safer, better patient-centered and community/population-oriented U.S. health care system. Students will be assigned to small-group interprofessional teams, and given opportunities to interact and collaborate with students from other healthcare professions.

## PHPR 3060 Introduction to Patient Care

[1 credit hour]

This course will introduce concepts relative to the patient care process and the understanding of the pathophysiology and pharmacotherapy of disease states. The course will discuss commonly used clinical laboratory tests and how to interpret and apply their results to improve patient care, identify patient specific factors that impact medication dosing.

**Prerequisites:** MBC 3310 with a minimum grade of D- and PHCL 3700 with a minimum grade of D-

**Corequisites:** PHPR 3460

**Term Offered:** Spring

## PHPR 3070 Pharmaceuticals and Pharmaceutical Technology I

[4 credit hours]

Course considers the principles and thought processes involved in solving pharmacy-related mathematical problems and the theory and processes involved in the manufacture and extemporaneous compounding of dosage forms.

**Term Offered:** Fall

## PHPR 3080 PPD-2

[4 credit hours]

Further exploration of the principles, theory and processes involved in the development and preparation of parenteral, ophthalmic and other non-oral drug delivery systems.

**Term Offered:** Spring

## PHPR 3100 Emulsion Science

[1 credit hour]

Emulsion and aligned colloidal phenomena is at the core of most cosmetic and personal care formulation technology. This course will provide an overview of emulsion formulation basics including reversible and irreversible formulation changes and emulsion stabilization techniques.

**Prerequisites:** PHPR 3040 with a minimum grade of D-

**PHPR 3110 Pharmaceutics Lab I**

[1 credit hour]

A laboratory introduction to the principles, theory, and processes involved in the manufacture and compounding of fundamental classes of dosage forms.

**Corequisites:** PHPR 3010, PHPR 3020

**PHPR 3120 Pharmaceutics Lab II**

[1 credit hour]

A laboratory course that follows PHPR 3025 that introduces principles, theory, and processes involved in the manufacture and compounding of various classes of dosage forms.

**Corequisites:** PHPR 3030

**PHPR 3130 PPT-1**

[2 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of attention deficit hyperactivity disorder, sleep disorders, acid-base, fluid & electrolytic imbalances, pain and substance abuse.

**Corequisites:** MBC 3310, PHCL 3700

**Term Offered:** Fall

**PHPR 3140 PPT-2**

[2 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of endocrine disorders and reproduction.

**Prerequisites:** PHPR 3130 with a minimum grade of C

**Corequisites:** MBC 3320, MBC 3560, PHCL 3720

**Term Offered:** Spring

**PHPR 3250 Introduction to Self Care**

[1 credit hour]

The course will provide an introduction to the over-the-counter marketplace and discussion of the pharmacist's patient care process. Special emphasis will be placed on how pharmacists should help patients safely and effectively treat common medical problems.

**Prerequisites:** PHPR 3450 with a minimum grade of D- and PHCL 3700 with a minimum grade of D-

**Corequisites:** PHPR 3460

**PHPR 3260 PHCAD-1**

[2 credit hours]

Description and analysis of the organization, financing and delivery of healthcare in the U.S.. Development of communication skills for pharmacists to function optimally in the system is emphasized.

**Term Offered:** Spring, Fall

**PHPR 3300 Commonly Prescribed Meds and Med Term 1**

[1 credit hour]

This course introduces students to commonly prescribed medications and medical terminology.

**PHPR 3310 Introduction to Pharmacy Law**

[1 credit hour]

The purpose of this course is to introduce students to laws that regulate the practice of pharmacy. Federal drug laws and specific state laws that regulate the filling and dispensing of prescriptions will be reviewed and applied.

**PHPR 3450 Pharmacy Skills Development-1**

[2 credit hours]

This course is designed to introduce students to the Pharmacists' Patient Care Process as it is applied to the Community Pharmacy Setting in order to prepare them for their Community Pharmacy Introductory Pharmacy Practice Experiences.

**PHPR 3460 Pharmacy Skills Development-2**

[2 credit hours]

The course will develop skills in the Pharmacists' Patient Care Process (PPCP) as they are applied to the Community Pharmacy Setting and prepare students for skill development in medication therapy management.

**Prerequisites:** PHPR 3450 with a minimum grade of D-

**PHPR 3470 Pharmacokinetics**

[3 credit hours]

This course will provide the theoretical basis and clinical application of pharmacokinetics as relates to drug dosing, absorption, distribution, biotransformation and excretion.

**PHPR 3670 Chemical Dependency and The Pharmacist**

[3 credit hours]

Overview of chemical dependency and substance abuse, with emphasis on the neuropathophysiology of dependency and the pharmacology of drugs of abuse. Also includes extensive review of the impact of chemical dependency on the healthcare professional, with a focus on the impact of pharmacists.

**Term Offered:** Summer

**PHPR 3920 Introductory Pharmacy Practice Experience I**

[1 credit hour]

First professional year course designed to enhance professional growth through an introduction to clinical skill development and direct patient care activities within institutional and community pharmacy practice settings. Prerequisite: Admission into the Pharm.D. Program.

**Term Offered:** Spring, Summer, Fall

**PHPR 3930 Introductory Pharmacy Practice Experience 2**

[1 credit hour]

First professional year course designed to enhance professional growth through an introduction to clinical skill development and direct patient care activities within institutional and community pharmacy practice settings. Prerequisite: Admission into the Pharm.D Program.

**Term Offered:** Spring

**PHPR 4050 Pharmacy Skills Development-3**

[2 credit hours]

This course will enhance skills in interpersonal communication with emphasis on application of one-to-one communication and patient counseling. Also includes the development of skills in the delivery of immunizations and medication therapy management (MTM).

**Prerequisites:** PHPR 3460 with a minimum grade of D-

**PHPR 4070 PPD-3**

[3 credit hours]

Interpersonal communication with emphasis upon application of one-to-one communication and patient counseling. Instruction in the broad dimension of professional pharmacy practice and responsibility for providing pharmaceutical care, and use of drug information resources, and provision of drug information.

**Prerequisites:** PHPR 3070 with a minimum grade of C

**Term Offered:** Fall

**PHPR 4080 PPD-4**

[3 credit hours]

Course enhances professional development to meet specific patient and health care practitioner needs. Instruction includes effective literature analysis, presentation of care plans, and pharmacy jurisprudence.

**Prerequisites:** PHPR 4070 with a minimum grade of C

**Corequisites:** PHPR 4140, PHPR 4330

**Term Offered:** Spring

**PHPR 4130 PPT-3**

[4 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of immune, renal and rheumatologic disorders and transplantation.

**Prerequisites:** PHPR 3140 with a minimum grade of C and MBC 3800 with a minimum grade of C

**Corequisites:** PHCL 4700

**Term Offered:** Fall

**PHPR 4140 PPT-4**

[4 credit hours]

Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of immunology and infectious diseases

**Prerequisites:** MBC 3800 with a minimum grade of C

**Corequisites:** MBC 4300, PHCL 4720

**Term Offered:** Spring

**PHPR 4160 Pharmacokinetics**

[3 credit hours]

Theoretical basis and clinical application of pharmacokinetics as relates to drug dosing, absorption, distribution, biotransformation, and excretion.

**Term Offered:** Spring, Fall

**PHPR 4220 Medication Therapy Management**

[2 credit hours]

This course focuses on the various aspects of Medication Therapy Management (MTM) services and programs.

**PHPR 4270 Health Systems**

[1.5 credit hours]

This course will provide an overview of the organization, financing and delivery of healthcare in the U.S.

**PHPR 4300 Commonly Prescribed Meds and Med Term II**

[1 credit hour]

This course further develops students' knowledge of commonly prescribed medications and medical terminology.

**Prerequisites:** PHPR 3300 with a minimum grade of D-

**PHPR 4330 RESEARCH DESIGN AND DRUG LITERATURE EVALUATION I**

[2 credit hours]

Concepts of research design, statistical analysis, literature evaluation and evidence based medicine are introduced and integrated in a manner that depicts their practical relevance to pharmacy practice.

**Corequisites:** PHPR 4080

**Term Offered:** Spring

**PHPR 4350 Pharmacy Skills Development - 3**

[2 credit hours]

This course will enhance skills in interpersonal communication with emphasis on application of one-to-one communication and patient counseling. Also includes the development of skills in the delivery of immunizations and medication therapy management (MTM).

**Prerequisites:** PHPR 3460 with a minimum grade of D-

**Corequisites:** PHPR 4220

**PHPR 4360 Pharmacy Skills Development - 4**

[2 credit hours]

This course considers the principles and thought processes of the Pharmacists' Patient Care Process (PPCP) as it relates to institutional based pharmacy practice as well as the resources and critical thinking skills to evaluate and answer complex patient and population based drug information questions.

**Prerequisites:** PHPR 4350 with a minimum grade of D- and PHPR 4530 with a minimum grade of D-

**PHPR 4450 Pathophysiology And Pharmacotherapy: Renal**

[3 credit hours]

Discussion of pathophysiology, clinical presentation, etiological causes, laboratory findings, diagnosis and therapy of renal disease states.

**PHPR 4470 Applied Clinical Pharmacokinetics Primer**

[1 credit hour]

This course is a discussion of pharmacokinetic concepts which are commonly utilized in therapeutic drug monitoring and clinical application.

**Prerequisites:** PHPR 3470 with a minimum grade of D-

**Corequisites:** PHM 4030

**PHPR 4520 PHCAD-2**

[2 credit hours]

This course is to introduce students to the administrative sciences (marketing/management, etc.) and their respective roles in the provision of pharmaceutical care.

**Prerequisites:** PHPR 3260 with a minimum grade of C

**Term Offered:** Spring

**PHPR 4530 Evidence Based Medicine 1**

[3 credit hours]

This course introduces the principles and practice of evidence based medicine (EBM) in guiding clinical decision making in pharmacy practice.

**Prerequisites:** MATH 2640 with a minimum grade of D- or MATH 2600 with a minimum grade of D-

**PHPR 4540 Evidence Based Medicine 2**

[2 credit hours]

This course expands upon the principles and practice of evidence based medicine (EBM) in guiding clinical decision making in pharmacy practice. Students will develop their formal oral presentation skills.

**Prerequisites:** PHPR 4530 with a minimum grade of D-

**Corequisites:** PHPR 4360

**PHPR 4550 Analysis Of The Pharmaceutical Environment**

[3 credit hours]

A theoretical and practical examination of the pharmaceutical environment and drug distribution system using the science of marketing as a tool for analysis.

**Term Offered:** Spring

**PHPR 4600 Seminar in Pharmacy Administration**

[1 credit hour]

This course provides a global perspective on pharmacy administration and healthcare related issues, including economic, humanistic, clinical, and other aspects of disease management. Prerequisite: Enrollment in the BSPS in Pharmacy Administration program or permission of instructor

**Term Offered:** Fall**PHPR 4610 Pharmacoeconomics And Outcomes I**

[3 credit hours]

This course emphasizes introductory concepts, methods, and practical procedures for pharmacoeconomic analysis and outcomes research. The student will understand and develop instruments for assessing patients' health status, quality of life, satisfaction and cost-effectiveness for pharmacoeconomic and health outcomes research. Prerequisite: Enrollment in the BSPS in Pharmacy Administration program or permission of instructor

**Term Offered:** Spring**PHPR 4640 Cosmetic Science Essentials**

[3 credit hours]

The course will provide a brief overview of the basic definitions regarding cosmetics and over-the-counter/cosmetic combination products and the current FDA requirements. Topics will cover the structure and functions of skin, hair, lips, eye lashes, nails and teeth; disorders of the skin, hair and oral cavity as well as the formulation, manufacturing, safety testing and quality control issues of cosmetics and personal care preparations.

**PHPR 4680 Parenteral Manufacturing**

[2 credit hours]

The theory and technology of parenteral and ophthalmic formulation design, production, sterilization, packaging and stability.

**Prerequisites:** (PHPR 3010 with a minimum grade of D- and PHPR 3070 with a minimum grade of D- and PHPR 3080 with a minimum grade of D-)

**PHPR 4690 Dosage Form Design**

[3 credit hours]

The utilization of pharmaceutical principles and practices for the design and manufacture of modern commercial dosage forms such as tablets, aerosols, emulsions, suspensions and solutions emphasizing biopharmaceutically efficacious products.

**Prerequisites:** (PHPR 3070 with a minimum grade of D- and PHPR 3080 with a minimum grade of D- and PHPR 3010 with a minimum grade of D-)

**PHPR 4710 Selected Topics In Pharmaceutical Technology**

[3 credit hours]

Discussion, evaluation, experimentation and production of selected dosage forms. A forum for the discussion of new dosage form technology and advances.

**Prerequisites:** (PHPR 3010 with a minimum grade of D- and PHPR 3070 with a minimum grade of D-)

**Term Offered:** Fall**PHPR 4720 Pharmaceutical Rate Processes**

[3 credit hours]

A theoretical and practical application of kinetic principles applied to pharmaceutical and cosmetic systems in liquid and solid state. A mathematical treatment and development of the equations which support each reaction mechanism.

**Term Offered:** Fall**PHPR 4730 Cosmetic Science I**

[3 credit hours]

This course focuses on cosmetics and personal care products for both genders with an emphasis on ingredient selection, product design, formulation development, preparation, product testing, packaging and regulatory requirements. Topics discussed include makeup products for the lips, eyes, face and nails as well as oral care products and deodorants/antiperspirants. Guest speakers from the cosmetic and personal care industry are regularly invited to the classes.

**Prerequisites:** PHPR 3040 with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4740 Cosmetic Science Laboratory I**

[1 credit hour]

A basic laboratory course in personal care cosmetics for both men and women with emphasis on the product design, formulation development, preparation and packaging of Lipsticks, lip balms, eye shadow, eye liners, foundation make-up, theatrical make-up, rouge, face powders, etc. Laboratory activities will also consider marketing, advertisement creation for radio, TV, bill boards, newspaper and magazines as well as other activities.

**Prerequisites:** PHPR 3030 (may be taken concurrently) with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4750 Cosmetic Science II**

[3 credit hours]

This course focuses on cosmetics and personal care products for both genders with an emphasis on ingredient selection, product design, formulation development, preparation, product testing, packaging and regulatory requirements. Topics discussed include skin cleanser, skin moisturizers, anti-acne and anti-aging products, shampoos and hair conditioners, hair styling products, hair coloring products, hair removal products, baby care products, sunscreens and sunless tanners. Guest speakers from the cosmetic and personal care industry are regularly invited to the classes.

**Prerequisites:** PHPR 4730 with a minimum grade of D- and PHPR 4740 with a minimum grade of D- and PHPR 3010 with a minimum grade of D- and PHPR 3020 with a minimum grade of D- and PHPR 3030 with a minimum grade of D-

**Term Offered:** Spring, Fall**PHPR 4760 Cosmetic Science Laboratory II**

[1 credit hour]

A basic course in personal care cosmetics for both men and women with emphasis on the theory, product design, formulation development, preparation and packaging of hair care and coloring, shampoos and rinses, skin care products, creams, lotions, sunscreens, oral care products including mouthwash tooth paste and powders, baby care products, etc. Consideration of marketing, ad creation for radio, TV, bill boards, newspapers and magazines will be incorporated as part of the laboratory activities.

**Prerequisites:** PHPR 4730 with a minimum grade of D- and PHPR 4740 with a minimum grade of D-

**Term Offered:** Spring, Fall

**PHPR 4770 Advanced Drug Delivery Systems - I**

[3 credit hours]

PHPR4770: The development of drug delivery systems relies on the broad understanding of many different physiological, chemical, and biological factors. This course is designed to introduce advanced drug delivery systems for oral, ocular, transdermal and buccal delivery. The course design is based on the premise that the student desires knowledge about the latest developments in formulation and drug delivery.

**Prerequisites:** PHPR 3020 with a minimum grade of D- and PHPR 3030 with a minimum grade of D-

**PHPR 4780 Internship In Pharmacy Administration**

[3-6 credit hours]

An experiential course in which students acquire practical knowledge through hands-on experience in an area of pharmacy administration by working in an academic or non-academic (private business) environment.

**Term Offered:** Spring, Summer, Fall

**PHPR 4810 Finance and Personal Planning for Pharmacists**

[1 credit hour]

Practical topics on financial, professional, and personal situations to better prepare students to make knowledgeable decisions that affect future security and success.

**Term Offered:** Spring

**PHPR 4880 Internship in Pharmaceutics**

[3-6 credit hours]

Students will acquire practical knowledge and hands-on experience in the areas of pharmacy administration or industrial pharmacy/pharmaceutics by working in the pharmaceutical industry or with health care systems.

**Term Offered:** Spring, Summer, Fall

**PHPR 4890 Internship in Cosmetic Science and Formulation Design**

[3-6 credit hours]

An experiential course in which students acquire practical knowledge through hands-on experience in an area of cosmetic science by working in an academic, private or government laboratory or professional site.

**Term Offered:** Spring, Summer, Fall

**PHPR 4900 Honors Seminar In Pharmacy Practice**

[1-3 credit hours]

An examination of a specific question in the context of the primary literature in pharmacy practice for advanced students.

**Term Offered:** Spring, Summer, Fall

**PHPR 4910 Pharmacy Practice Problems**

[1-5 credit hours]

Selected undergraduate research projects in pharmacy practice.

**Term Offered:** Spring, Summer, Fall

**PHPR 4920 Introductory Pharmacy Practice Experience 3**

[1 credit hour]

The purpose of this course is to increase students' awareness and involvement in areas related to the contemporary practice of pharmacy. Students will participate in projects that nurture their professional growth.

**Prerequisites:** PHPR 3930 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

**PHPR 4930 Introductory Pharmacy Practice Experience 4**

[1 credit hour]

The purpose of this course is to increase students' awareness and involvement in areas related to the contemporary practice of pharmacy. Students will participate in projects that nurture their professional growth.

**Prerequisites:** PHPR 4920 with a minimum grade of C

**Term Offered:** Spring, Summer

**PHPR 4960 Honors Thesis In Pharmacy Practice**

[2-5 credit hours]

An examination of a specific research question in pharmacy practice which can be answered through application of experimental work.

**Term Offered:** Spring, Summer, Fall



# PHILOSOPHY (PHIL)

## PHIL 1010 Introduction To Logic

[0-3 credit hours]

(not for major credit) An introduction to the symbolic analysis of argument components and structures. Topics include definition, syllogistic reasoning, semantics, sentential logic and probability.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## PHIL 1020 Critical Thinking

[0-3 credit hours]

(not for major credit) A study of principles and patterns of good reasoning and writing, including the evaluation and construction of arguments and the identification and avoidance of fallacies.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## PHIL 2200 Introduction To Philosophy

[3 credit hours]

An introduction to philosophical reflection on such issues as the existence of God, free will, knowledge and objectivity, social justice and moral responsibility. Humanities core course.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## PHIL 2400 Contemporary Moral Problems

[3 credit hours]

A study of topics such as abortion, euthanasia, environmental responsibility, famine relief, affirmative action and sexuality. Attention is paid to moral argument and the bases of moral decisions.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## PHIL 3000 Symbolic Logic

[3 credit hours]

A study of propositional and predicate logic, techniques used to evaluate deductive arguments. Topics may include computability, set theory, Bayesianism and other formal systems with philosophical and mathematical relevance.

**Term Offered:** Spring, Fall

## PHIL 3060 Philosophy Of Language

[3 credit hours]

A historical and critical examination of topics in the philosophy of language such as truth, reference, representation, metaphor and interpretation.

**Term Offered:** Fall

## PHIL 3120 Business Ethics

[3 credit hours]

An examination of the ethical dimensions of the relationships between a business and employees, consumers, other businesses, society, government, the law and the environment.

**Term Offered:** Spring, Summer, Fall

## PHIL 3140 Computers And Culture

[3 credit hours]

A study of the philosophical issues computers raise which affect and reflect human values. Topics include censorship and privacy on the internet, virtual reality and the possibility of artificial intelligence.

**Term Offered:** Spring, Fall

## PHIL 3160 Data Science Ethics

[3 credit hours]

A course which covers ethical and social implications of big data science and management. Topics include big data research ethics, privacy, identity, healthcare, and social justice.

**Term Offered:** Spring, Fall

## PHIL 3180 Environmental Ethics

[3 credit hours]

An examination of our relation and responsibility to the natural environment. Topics include risk assessment, the value of non-human living things, resource use, economics, technology, environmental racism and ecology.

**Term Offered:** Spring, Summer, Fall

## PHIL 3210 Ancient And Medieval Philosophy

[3 credit hours]

A study of ancient and medieval philosophy from the pre-Socratics to Aquinas.

**Term Offered:** Fall

## PHIL 3230 Modern Philosophy

[3 credit hours]

A study of early modern philosophy from Descartes to Kant. Writing intensive course.

**Term Offered:** Spring

## PHIL 3240 Existentialism

[3 credit hours]

An examination of existentialist philosophy from the 19th Century to the present as represented in the works of Kierkegaard, Nietzsche, Heidegger, Camus, Sartre, de Beauvoir, Fanon and others. Topics may include anxiety, meaning and meaninglessness, freedom, and community.

**Term Offered:** Spring, Fall

## PHIL 3310 Science And Society

[3 credit hours]

A study of twentieth-century science and its relationships with government, industry, religion and medicine, including the emergence of Big Science and the future of science education and research.

**Term Offered:** Spring

## PHIL 3370 Medical Ethics

[3 credit hours]

The application of ethics to the practice of medical professionals. Topics include authority, paternalism, truth-telling, informed consent, health care reform, genetic manipulation, abortion, infanticide and euthanasia.

**Term Offered:** Spring, Summer, Fall

## PHIL 3400 Ethical Theory

[3 credit hours]

A examination of the assumptions, methods and content of major theories of ethics, with an emphasis on the nature of the good, moral obligations, rights and duties. Questions to be examined include: What is the best life for a human being? What is the foundation of the distinction between right and wrong? What motives do I have for acting morally?

**Term Offered:** Spring, Fall

**PHIL 3500 Eastern Thought**

[3 credit hours]

An examination of major philosophies of Asia and the Far East, their specific concerns and their relevance to contemporary problems.

**Term Offered:** Spring

Multicultural Non-US Diversity

**PHIL 3540 Feminism And Philosophy**

[3 credit hours]

An examination of feminist perspectives in philosophy, exploring the relevance of gender to central questions in ethics, political theory and epistemology.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**PHIL 3560 Aesthetics**

[3 credit hours]

An analysis and evaluation of aesthetic topics such as the definition of art, truth in the arts, the role of representation, the nature of aesthetic value and the character of aesthetic experience.

**Term Offered:** Spring, Fall**PHIL 3570 Philosophy Of Religion**

[3 credit hours]

A critical, philosophical exploration of questions about the nature of religion, including the existence and nature of God, the problem of evil, and the relation between faith and knowledge. Other topics may include the relation of religion to science and morality, as well as the role of religious experience and miracles in religious belief.

**Term Offered:** Spring, Fall**PHIL 3630 Philosophy Of Psychology**

[3 credit hours]

A philosophical examination of problems concerning the nature of mind such as the relation between mind and body, consciousness, free will and personal identity.

**Term Offered:** Fall**PHIL 3750 Social And Political Philosophy**

[3 credit hours]

A study of classic and contemporary treatments of justice, authority, the relations between individual and community, the meaning of freedom and equality, power and violence, and race and gender.

**Term Offered:** Spring, Fall**PHIL 3760 Crime And Punishment**

[3 credit hours]

A philosophical study of topics such as crime, responsibility, justice and punishment. Special attention is paid to current practices in the criminal justice system.

**Term Offered:** Spring, Fall**PHIL 3900 Seminar**

[3 credit hours]

Topics vary.

**Term Offered:** Spring, Fall**PHIL 4210 Ancient Philosophy Seminar**

[3 credit hours]

An intensive study of the texts and arguments of Presocratic philosophers, Plato, Aristotle, or Hellenistic philosophers. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall**PHIL 4230 Modern Philosophy Seminar**

[3 credit hours]

An intensive study of one or more Continental or British philosophers from the sixteenth through eighteenth centuries. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall**PHIL 4240 19th Century European Philosophy**

[3 credit hours]

An intensive study of European philosophy after Kant, including Hegel, Marx, Kierkegaard and Nietzsche.

**Term Offered:** Fall**PHIL 4250 Phenomenology**

[3 credit hours]

An intensive study of major works from phenomenological philosophers, such as Husserl, Heidegger, Sartre, or Merleau-Ponty. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall**PHIL 4260 Recent European Philosophy**

[3 credit hours]

An examination of texts and problems in the Frankfurt school, post-structuralism, deconstruction and post-modernism, or of such thinkers as Habermas, Foucault, Derrida and Lyotard. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall**PHIL 4270 American Philosophy**

[3 credit hours]

A study of the development of American Philosophy, or one or more of Pierce, James, Dewey, or Mead. Course may be repeated as topics vary.

**Term Offered:** Fall**PHIL 4280 20th Century Analytic Philosophy**

[3 credit hours]

Selected readings from Frege, Russell, Wittgenstein, the Vienna Circle, the Ordinary Language school, and American neo-pragmatists such as Quine, Rorty and Davidson. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall**PHIL 4300 Philosophy Of Natural Science**

[3 credit hours]

A study of scientific inquiry including the structure of scientific explanations, relations of evidence and confirmation, the metaphysics of theoretical entities, and the nature of scientific change and progress.

**Term Offered:** Spring, Fall**PHIL 4400 Ethics Seminar**

[3 credit hours]

Selected topics or philosophers in ethical theory. Course may be repeated as topics vary.

**Term Offered:** Spring**PHIL 4650 Philosophy Of Mind**

[3 credit hours]

Advanced study of issues in the philosophy of mind such as: intentionality and misrepresentation, rationality and interpretation, supervenience and reductionism, folk psychology and eliminative materialism. Course may be repeated as topics vary.

**Term Offered:** Spring

**PHIL 4750 Political Philosophy Seminar**

[3 credit hours]

Selected topics or philosophers in political philosophy. Course may be repeated as topics vary.

**Term Offered:** Spring, Fall

**PHIL 4900 Advanced Seminar**

[2-4 credit hours]

Topics vary.

**Term Offered:** Spring, Fall

**PHIL 4920 Directed Readings**

[1-4 credit hours]

**PHIL 4990 Independent Study - Honors**

[3 credit hours]

# PHYSICS (PHYS)

## PHYS 1050 The World Of Atoms

[3 credit hours]

The atomic structure of matter and the ideas of quantum physics. The sizes of objects from galaxies to nucleons. Molecules, solids, the wave nature of the electron, quarks and gluons.

Core Natural Sciences

## PHYS 1300 Physics In Everyday Life

[3 credit hours]

Not for major credit. Selected subjects of current interest, with their relation to the principles and concepts of physics. Content may vary from year to year. No special science or mathematics background needed.

**Term Offered:** Fall

Core Natural Sciences

## PHYS 1310 Physics Of Music And Sound

[3 credit hours]

Not for major credit. Physics of waves and vibration. Human sound perception. Physics principles of wind, string and percussion instruments. Analog and digital reproduction of sound.

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

## PHYS 1320 Jurassic Physics

[3 credit hours]

Not for major credit. Mechanics, energy, sound and thermodynamics of dinosaurs. The physics of vision and hearing. Fluids and flight. Radioactivity. Climate and the effects of an asteroid collision with the Earth.

**Term Offered:** Spring

Core Natural Sciences

## PHYS 1330 Physics Of Light And Color

[3 credit hours]

Not for major credit. Physics of light and human vision. Atmospheric phenomena, images, depth perception, color analysis, pigments and dyes, color perception, the physics of art, the reproduction of color, thin film interference and holography.

**Term Offered:** Spring

Core Natural Sciences, Trans Mod Natural Science

## PHYS 1340 The Nature Of Science

[3 credit hours]

An interdisciplinary course that discusses major scientific discoveries, the role of hypothesis testing in science, the use of mathematics in science; data presentation; and moral and ethical issues that stem from science.

Core Natural Sciences

## PHYS 1750 Introduction To Physics

[4 credit hours]

Not for major credit. High school mathematics including plane geometry, trigonometry and two years of algebra is strongly recommended. Fundamental laws of nature pertaining to mechanics, thermodynamics, waves, electricity, magnetism, optics, atoms and particles.

**Term Offered:** Fall

Core Natural Sciences, Trans Mod Natural Science

## PHYS 1910 Frontiers Of Physics And Astronomy

[3 credit hours]

An examination of our current understanding of the physical world at the conceptual level. Topics may include the ultimate structure of matter, quantum theory, relativity, astrophysics, cosmology and contemporary applications.

**Term Offered:** Fall

## PHYS 2010 Technical Physics I

[0-5 credit hours]

Topics include measurement, statics, Newton's laws, friction, work, energy, power, impulse and momentum, and simple machines. Includes integrated laboratory.

**Prerequisites:** MATH 1340 with a minimum grade of D- or MATH 1330 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

## PHYS 2020 Technical Physics II

[0-5 credit hours]

Topics include thermodynamics, electricity, and magnetism, electromagnetic radiation, optics, atomic and nuclear physics. Includes integrated laboratory.

**Prerequisites:** MATH 1340 with a minimum grade of D- or MATH 1330 with a minimum grade of D-

**Term Offered:** Spring, Fall

Core Natural Sciences, Trans Mod Natural Science

## PHYS 2070 General Physics I

[5 credit hours]

Calculus not required. Mechanics of energy and motion, gravitation, harmonic motion, fluids, heat, entropy and the laws of thermodynamics. Four hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** (MATH 1320 with a minimum grade of D- and MATH 1330 with a minimum grade of D-) or MATH 1340 with a minimum grade of D- or MATH 1750 with a minimum grade of D- or MATH 1850 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

## PHYS 2080 General Physics II

[5 credit hours]

Calculus not required. Electricity and magnetism, capacitors and inductors, electromagnetic waves, optics, atomic physics, nuclear physics, and elementary particles. Four hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** PHYS 2070 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2100 Physics With Calculus**

[2 credit hours]

A bridge course for students wishing to continue in physics after taking PHYS 2070-2080. The application of calculus and elementary differential equations in various physical contexts. No credit for students who take PHYS 2130-2140.

**Prerequisites:** (PHYS 2080 with a minimum grade of D- and MATH 1860 with a minimum grade of D-) or (PHYS 2080 with a minimum grade of D- and MATH 1840 with a minimum grade of D-) or (PHYS 2080 with a minimum grade of D- and MATH 1880 with a minimum grade of D-) or (PHYS 2080 with a minimum grade of D- and MATH 1930 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PHYS 2130 Physics For Science And Engineering Majors I**

[5 credit hours]

Calculus based general physics. Mechanics of motion and energy, rotation, gravitation, harmonic motion, waves, fluids and the laws of thermodynamics. Five hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** MATH 1830 (may be taken concurrently) with a minimum grade of C or MATH 1850 (may be taken concurrently) with a minimum grade of C or MATH 1920 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 2140 Physics For Science And Engineering Majors II**

[5 credit hours]

Calculus based general physics. Electricity and magnetism, capacitors and inductors, electromagnetic oscillations, Maxwell's equations and electromagnetic radiation, optics, images, interference, and diffraction. Five hours lecture and discussion, two hours laboratory per week.

**Prerequisites:** PHYS 2130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Core Natural Sciences, Trans Mod Natural Science

**PHYS 3150 Methods Of Theoretical Physics**

[3 credit hours]

Basic theoretical methods of physics. Topics include mechanical oscillations, wave propagation, electromagnetic fields, symm and eigenfunctions. Emphasis is on techniques that are common to many areas of physics and astrophysics.

**Prerequisites:** (MATH 1890 with a minimum grade of D- and MATH 2850 with a minimum grade of D- and PHYS 2140 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PHYS 3180 Intermediate Laboratory**

[3 credit hours]

Physical measurements laboratory related to the development of modern physics, emphasizing techniques such as electronics, computer-aided experimental control and data acquisition, and data analysis. May be offered as writing intensive.

**Prerequisites:** PHYS 2140 with a minimum grade of D- or PHYS 2100 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 3310 Modern Physics I**

[3 credit hours]

Quantum mechanics: atomic and molecular structure and spectra.

**Prerequisites:** (PHYS 2140 with a minimum grade of D- and MATH 1840 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 1860 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 1880 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 1930 with a minimum grade of D-)

**Term Offered:** Fall

**PHYS 3320 Modern Physics II**

[3 credit hours]

Quantum statistics, applications of quantum mechanics and quantum statistics in laser physics and solid state physics, nuclear physics.

**Term Offered:** Spring

**PHYS 3400 Physical Principles Of Energy Sources For Humans**

[3 credit hours]

This course will involve the study of various conventional and unconventional sources of energy for human consumption. Past, present, and future energy sources will be examined on scientifically established principles and data.

**Prerequisites:** PHYS 2140 with a minimum grade of D- or PHYS 2080 with a minimum grade of D- and CHEM 1240 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 3410 Thermal Physics**

[3 credit hours]

Statistical mechanics, kinetic theory and thermodynamics from a unified microscopic point of view, with applications to a variety of topics from different areas of physics.

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 3610 Optics And Lasers**

[3 credit hours]

Electromagnetic theory, ray and wave optics including matrix methods, polarization, interference, diffraction, basic laser physics and survey of current laser systems.

**Prerequisites:** PHYS 2140 with a minimum grade of D-

**Term Offered:** Spring, Fall

**PHYS 4130 Computational Physics**

[3 credit hours]

Working knowledge of computer operations and programming required. Numerical accuracy, advanced programming, graphics and spreadsheet packages, numerical techniques for differentiation, integration, matrices, solving differential equations and eigenvalue problems.

**PHYS 4210 Theoretical Mechanics**

[3 credit hours]

Statics and dynamics of particles, work, energy, Lagrange equations of motion, small oscillations, dynamics of rigid bodies.

**Prerequisites:** (PHYS 2140 with a minimum grade of D- and MATH 1890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-)

**Term Offered:** Fall



**PHYS 4230 Electricity And Magnetism I**

[3 credit hours]

Mathematical formulation of electrostatic and magnetostatic fields, potential theory solution of boundary value problems, method of images, dielectric and magnetic materials.

**Prerequisites:** (PHYS 2140 with a minimum grade of D- and MATH 1890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-) or (PHYS 2140 with a minimum grade of D- and MATH 2890 with a minimum grade of D- and MATH 2860 with a minimum grade of D-)

**Term Offered:** Fall

**PHYS 4240 Electricity And Magnetism II**

[3 credit hours]

Maxwell's field equations, production and propagation of electromagnetic waves, solution of boundary value problems with application to the laws of optics and guided waves.

**Prerequisites:** PHYS 4230 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4310 Quantum Mechanics**

[3 credit hours]

Formalism and applications of quantum mechanics: Hilbert space, time-independent and time-dependent perturbation theories, atomic and molecular structure and spectra, and scattering theory.

**Prerequisites:** (PHYS 3310 with a minimum grade of D- and MATH 2860 with a minimum grade of D- and MATH 1890 with a minimum grade of D-) or (PHYS 3320 with a minimum grade of D- and MATH 2890 with a minimum grade of D-)

**Term Offered:** Spring

**PHYS 4400 Principles and Varieties of Solar Energy**

[3 credit hours]

Types and extent of solar energy used in human society including photosynthesis, photovoltaic, solar thermal, and concentrating solar electric; scope of the necessary energy storage and long distance electricity transmission.

**Prerequisites:** CHEM 1240 with a minimum grade of D- and PHYS 2080 with a minimum grade of D- and PHYS 3400 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4430 Physics Applications in Medicine I**

[3 credit hours]

Physical concepts as applied to medicine including: mechanics, exponential growth, statistical physics, fluid transport, and electricity and magnetism. This is a companion course to PHYS 4440.

**Prerequisites:** (PHYS 2080 with a minimum grade of D- or PHYS 2140 with a minimum grade of D-) and (MATH 1760 with a minimum grade of D- or MATH 1840 with a minimum grade of D- or MATH 1860 with a minimum grade of D-)

**PHYS 4440 Physics Applications in Medicine II**

[3 credit hours]

Physical concepts as applied to medicine including: detectors, feedback and control, signal analysis, atomic physics, high energy particles, nuclear medicine, treatment and imaging devices. Prerequisite: PHYS 4430.

**Prerequisites:** PHYS 4430 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4510 Physics Of Condensed Matter**

[3 credit hours]

Crystal lattices and structures, reciprocal lattice and kinematical diffraction theory, binding in crystals, lattice dynamics and phonons, thermodynamic, electronic, and optical properties of insulators, semiconductors, metals and alloys.

**Prerequisites:** (PHYS 3310 with a minimum grade of D- and PHYS 3410 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PHYS 4580 Molecular And Condensed Matter Laboratory**

[3 credit hours]

Experiments in molecular and condensed matter physics. Measurements and analysis based on techniques such as film thickness and surface morphology, X-ray diffraction, optical absorption, four-point probe and Hall measurements. One four-hour lab and one-hour lecture per week. May be offered as writing intensive.

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**Term Offered:** Fall

**PHYS 4620 The Physics Of Lasers**

[3 credit hours]

Longitudinal and transverse coherence, stimulated emission, optical pumping, resonator structures, Q-switching, mode-locking and laser systems (gas, dye, diode, doped insulator and free electron lasers).

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**PHYS 4780 Atomic And Nuclear Physics Laboratory**

[3 credit hours]

Detectors and electronics, gamma-ray and X-ray spectroscopies, beta and alpha particle spectroscopies, nuclear magnetic resonance, grating and interferometric spectroscopy, laser applications, and solar atomic spectroscopy. One four-hour lab and one-hour lecture per week. May be offered as writing intensive.

**Prerequisites:** PHYS 3310 with a minimum grade of D-

**Term Offered:** Spring

**PHYS 4910 Research Problems-Physics And Astronomy**

[1-3 credit hours]

Individual experimental or theoretical projects selected with the approval of the department.

**Term Offered:** Spring, Summer, Fall

**PHYS 4920 Senior Capstone Project**

[1 credit hour]

Required senior capstone project for all physics and astronomy majors. The topics may involve physics/astronomy research, physics/astronomy education, research in a related field with an emphasis on physics/astronomy, internships with companies or other institutions with an emphasis on physics/astronomy. Students should register for this course in the closest spring semester prior to graduation.

**Prerequisites:** PHYS 4950 with a minimum grade of D-

**PHYS 4940 Internship in Renewable Energy**

[1-4 credit hours]

Experiential learning in an advisor-approved business, non-profit, or academic organization. Maximum of three hours may count toward minor. Credit hours 1-4; may be repeated once for credit

**Prerequisites:** PHYS 3400 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PHYS 4950 Undergraduate Professional Development Seminar**

[1 credit hour]

Selected topics on professional development as it applies to junior / senior level physics or astronomy major undergraduates. Specific emphasis will be on topics relevant to near-term professional goals of students (graduate school applications, job interviews, career pathways, CV/resume, professional presentation skills, and ethical research).

**PHYS 4980 Special Topics In Physics**

[1-4 credit hours]

Individual or small group study of selected topics not covered in regular undergraduate courses.

**Term Offered:** Spring, Summer, Fall

# POLITICAL SCIENCE (PSC)

## PSC 1200 American National Government

[3 credit hours]

An introductory survey of the institutions, processes and politics of the government of the United States and its relationship to state governments. (not for major credit)

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## PSC 1710 Current International Problems

[3 credit hours]

A course designed to give the student a perspective on world affairs through an examination of some contemporary international problems like war, human rights, democratization, regional politics, and global health and the environment.

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

## PSC 2210 Women And Politics

[3 credit hours]

An exploration of women and gender relations in US political life. Special attention is paid to differences among women, their socializing experiences, political power bases, and legal status.

Multicultural US Diversity

## PSC 2300 Principles Of State And Local Government

[3 credit hours]

A study of the political processes and institutions of American state and local governments, with attention given to selected areas of public policy and intergovernmental relations.

**Term Offered:** Spring, Summer

## PSC 2400 Topics in Political Science

[3 credit hours]

Examination of current topics in Political Science. Area and topic to be determined by instructor.

**Term Offered:** Spring

## PSC 2600 Principles of Comparative Politics

[3 credit hours]

How can we explain the vast array of political systems around the world? This course examines the political systems of various countries and the internal and external factors shaping their political decisions. We will focus on institutional arrangements at the country level and the shaping forces behind their design, as well as on broad global topics affecting national politics

**Term Offered:** Spring, Fall

## PSC 2700 Principles Of International Relations

[3 credit hours]

An examination of the theoretical and methodological foundations of the international system. Through case studies, students will analyze and predict issues of cooperation and competition among states. For example, why does war occur? Why does the international system have particular international institutions rather than others? What best explains a state's foreign policy?

**Term Offered:** Spring, Summer, Fall

## PSC 2800 Principles Of Political Theory

[3 credit hours]

This course investigates core concepts in the history of political theory such as justice, liberty, and equality. We discuss how and why the influence of certain authors and ideas persists. Contemporary issues are interpreted using these authors and ideas in order to strengthen critical thinking skills and broaden students' thinking about politics.

**Term Offered:** Spring, Fall

## PSC 3150 Research and Writing in Political Science

[3 credit hours]

This course introduces the student to academic writing and research techniques in the political science discipline. Topics covered include: research ethics, scholarly literature review, peer-review process, research questions and research design, methodological approaches, and data analysis, among others.

**Term Offered:** Spring

## PSC 3210 Political Parties

[3 credit hours]

Why are political parties central to organizing democracy? This course examines how they set the terms of public debate, mobilize citizens, inform voter preferences, and shape policy.

**Term Offered:** Spring

## PSC 3250 Public Opinion

[3 credit hours]

This course explores the role of public opinion in American politics. It also develops data analysis skills and familiarizes students with survey development.

**Term Offered:** Spring, Fall

## PSC 3270 Campaign and Elections

[3 credit hours]

Campaigns and elections are vital components of democracy in the United States. In this course, we examine how candidates, parties, and citizens participate in the electoral process. Topics covered throughout the semester include candidate recruitment, voting behavior, advocacy groups, campaign finance, and the impact of new technology on voter mobilization.

**Term Offered:** Spring, Fall

## PSC 3280 Race and American Politics

[3 credit hours]

This course examines the role that race plays in the development of American politics. The class investigates definitions of race, how they have evolved, and how they continue to influence policy debates. This seminar assesses the impact that different racial groups, and their struggles for equality, have had on American democracy. This course examines the leading theoretical frameworks and empirical findings to analyze the relationship between race and American political development.

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

## PSC 3410 Principles of Public Policy

[3 credit hours]

This course is an introduction to public policy. It is focused on the factors that affect policymaking in the United States.

**Term Offered:** Spring, Summer, Fall

**PSC 3500 Principles Of Law**

[3 credit hours]

An overview of the politics of law. We examine such questions as the sources and existence of law, the legal process in civil and criminal cases, the nature of rights and the search for justice through participation in the legal system. Addresses specific issues such as plea bargaining and jury trials, personal injury lawsuits, national security and police powers, and the nomination and confirmation of federal judges.

**Term Offered:** Spring, Summer, Fall**PSC 3510 Constitutional Law I**

[3 credit hours]

Examines the political and institutional role of the U.S. Supreme Court in the development of the American legal system, the separation of powers between the executive, legislative, and judicial branches of the federal government, and the relationship between the federal government and the states. The course focuses on the analysis of Supreme Court cases as well as political science and legal scholarship.

**Term Offered:** Fall**PSC 3520 Constitutional Law and Politics II**

[3 credit hours]

Examines the political and institutional role of the Supreme Court in the development of the U.S. system of civil liberties, the relationship between judicial decisions and state actions affecting rights such as free speech, religion, and privacy, and the underlying theories of civil liberty in a democratic society. The course focuses on the analysis of Supreme Court cases as well as political science and legal scholarship.

**Term Offered:** Spring**PSC 3600 Fascism and Populism in Comparative Perspective**

[3 credit hours]

A comparative survey of historical fascist regimes and contemporary populist governance, mainly in Europe and Latin America. Contemporary populist rule is frequently equated with fascism but the differences are significant. In this course we will examine the differences and similarities between the two regime types.

**PSC 3690 Peasant Politics**

[3 credit hours]

The study of political science has become increasingly urban but peasant movements remain a significant political force around the world, particularly in less-developed regions. In this course we will study peasants and their politics worldwide from both a historical and contemporary perspective.

**PSC 3730 American Foreign Policy**

[3 credit hours]

An examination of the American foreign policy-making process as well as an analysis of the major problems facing the United States in its interaction with the international environment.

**Prerequisites:** (PSC 1200 with a minimum grade of D- or PSC 1300 with a minimum grade of D-) or (PSC 1400 with a minimum grade of D- or PSC 1710 with a minimum grade of D-) or PSC 2700 with a minimum grade of D-

**PSC 3790 Model United Nations/Model European Union**

[1 credit hour]

This is a faculty-advised, student-led simulation course. Students are exposed to the decision-making procedures of one of two major international organizations: The United Nations or The European Union. Through role-play, students will represent countries, delegates, prime ministers, foreign ministers, and government officials. Whenever possible, the organization represented in a given semester (UN or EU) will be chosen based on the opportunity to attend a conference where students will apply the concepts learned throughout the semester.

**PSC 3800 Sexual Politics**

[3 credit hours]

This course critically examines gender, sex and sexuality as identities, practices, and relationships. Through readings in feminist political theory and history, we study state practices, social norms, and historical movements for change to understand why and how various forms of gender, sex and sexuality become normal or are challenged in unexpected ways.

**Term Offered:** Spring, Fall**PSC 3820 Contemporary Political Ideas**

[3 credit hours]

Surveys developments and themes in political theory since the early 20th century. Particular issues addressed include bureaucracy, mass society, state and civil violence, and identity politics.

**Term Offered:** Spring**PSC 3850 Sports, Politics and Policy**

[3 credit hours]

This course explores the intersection of sports with politics and policy-making. Topics covered include sports and nationalism, sports and international diplomacy, globalization and sports, economic development and sport stadiums, baseball and antitrust law, Title IX and women's athletics, college athletics and race, and athletes and political advocacy.

**PSC 3990 Independent Study For Honors Students**

[3 credit hours]

Individual reading and research in selected topics for honors students.

**Term Offered:** Spring, Summer, Fall**PSC 4220 Advocacy Groups in US Politics**

[3 credit hours]

This course investigates the role of advocacy groups in American politics. It develops practical lobbying skills through experiential learning and covers topics such as the role of advocacy groups in campaigns and elections, grass roots mobilization, and agenda setting.

**Term Offered:** Spring, Fall**PSC 4230 Presidency**

[3 credit hours]

Presidents enjoy special prominence in the American political system. However, they are strongly influenced by their interactions with other political institutions, such as Congress, courts, the bureaucracy, and political parties. This course examines the presidency's original design and how the office has developed over time. We also investigate contemporary cases and controversies in presidential power.

**Term Offered:** Spring

**PSC 4280 U.s. Congress**

[3 credit hours]

Despite its key role in our political system, the U.S. Congress is not well understood by the public. This course examines how it works: the committee system, parties, and arcane legislative procedures. We consider topics like the impact of party polarization on congressional gridlock, the impact of divided government on policymaking, and how to improve representation.

**Term Offered:** Spring, Summer, Fall**PSC 4300 Principles of Public Administration**

[3 credit hours]

This course provides an overview of public administration. It addresses organization theory, decision making, budgeting, public policy, and the changing role of public institutions. It covers important democratic, professional, ethical and human values that are central to public administration.

**PSC 4320 Urban Policy And Administration**

[3 credit hours]

What does it take to govern a city and its environs? In this course, we examine the balance between the pressing needs of a city and the many economic and political constraints that citizens, leaders, and experts must navigate to achieve their goals.

**Term Offered:** Fall**PSC 4340 Environmental Policy**

[3 credit hours]

Policy for air and water pollution control, hazardous wastes, nuclear wastes. Examination of EPA, Congressional committees, state and city agencies. Some international issues.

**Term Offered:** Fall**PSC 4360 Ethics In Public Policy And Administration**

[3 credit hours]

Examination of values and principles which influence public policy and public administration. Applications to policy problems and responsibilities of public administrators will be emphasized.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Spring**PSC 4410 Management Of Nonprofit Organizations**

[3 credit hours]

Examination of forces that influence management of nonprofit organizations in the United States, and their roles and responsibilities. Consideration of organizational structures, leadership, fiscal administration, and relations with citizens and other organizations.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Spring**PSC 4430 Public Personnel Administration**

[3 credit hours]

The organization, operation and problems of public personnel systems in the functions of selection, training, classification and employee relations.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Fall**PSC 4440 Budgeting And Financial Administration**

[3 credit hours]

An examination of the institutions and techniques of financial administration, including government accounting, budgeting, financial management and governmental choice. Prior knowledge of spreadsheet applications recommended.

**Prerequisites:** PSC 3420 with a minimum grade of D-**Term Offered:** Spring**PSC 4520 The Politics of Development and Underdevelopment**

[3 credit hours]

This course examines political and economic development through a comparative lens. We focus on developing regions of the world to explore successes, possibilities, outcomes, and setbacks in their path towards achieving "developed" status.

**PSC 4530 Civil Rights**

[3 credit hours]

Examines the role of the US Supreme Court, judicial policy-making, and administrative implementation in the development of policies involving race, gender, sexual orientation, and the family. Issues covered include equal protection, voting rights, and affirmative action.

**Term Offered:** Summer, Fall**PSC 4550 CONTEMPORARY ISSUES IN LAW AND POLITICS**

[3 credit hours]

Examines current controversies in US law and politics drawing on recent research in political theory, constitutional history, and legal doctrine. Includes issues such as freedom of speech, presidential war powers, and religious freedom.

**Term Offered:** Spring, Fall**PSC 4560 Law And Public Administration**

[3 credit hours]

The impact of law on public administration with emphasis on judicial review, agency rule making and procedures.

**Prerequisites:** PSC 3420 with a minimum grade of D-**PSC 4580 International Law**

[3 credit hours]

A course focusing on the foundations of international law and the current use of international law in cases covering a wide range of issues such as war, weapons, diplomacy, the environment, economics, and human rights.

**PSC 4590 Law, Policy, And The Politics of Sexuality**

[3 credit hours]

This course explores the public policies that affect the lesbian, gay, bisexual and transgender communities in the United States and in other countries. It examines the factors that affect policymaking in this area.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**PSC 4640 The European Union**

[3 credit hours]

An analysis of the evolution, institutional structure, and operation of the European Union. Issue areas include human rights, trade, migration and refugees, international and domestic law, and foreign policy.

**Term Offered:** Spring, Fall



**PSC 4660 Politics of Africa**

[3 credit hours]

There are multiple political systems, ethnic identities and external interests among the countries in Sub-Saharan Africa. Applying a comparative lens, we will survey Africa's pre-colonial and colonial heritage; and economic, cultural, social and environmental characteristics that help define Africa. We will delve deeper into a few countries as case studies as well as examine the international and regional influences, thereby gaining a broad understanding of the political, social and economic implications surrounding Africa today.

**Term Offered:** Fall

Multicultural Non-US Diversity

**PSC 4680 Politics of Latin America**

[3 credit hours]

This course provides a survey of the Latin American region, its political transformation, and place in international politics. It covers an array of issues that have shaped and continue to shape the region: its history, its people, its culture, institutions and politics, and social and economic issues. Themes are approached both from a regional and country-level perspective.

Multicultural Non-US Diversity

**PSC 4720 International Organization**

[3 credit hours]

A study of the background, general concepts and problems of international organizations including the United Nations, regional organizations and non-governmental organizations. Issues covered include war, security, human rights, trade, international law, and global health.

**Term Offered:** Fall**PSC 4740 Politics of the Middle East**

[3 credit hours]

An advanced examination of international relations theory applied to the Middle East and a survey of modern Middle Eastern governments, cultures, and institutions with case studies on key issues facing the region.

Multicultural Non-US Diversity

**PSC 4750 Terrorism in International Relations**

[3 credit hours]

This course will give students a comparative historical, empirical, and theoretical overview of the causes, strategies, and goals of terrorist and counter-terrorism. The primary focus of the course is on the comparative and international nature of terrorism. Global and regional case studies will be used to better understand issues related to terrorism.

**PSC 4770 Human Rights**

[3 credit hours]

What are human rights? How are human rights created? Why do states protect or repress human rights? This class answers these questions by examining both the theoretical and empirical contributions to the study of human rights from the social sciences and law. In addition, human rights best (and worst) practices are considered.

**Term Offered:** Spring**PSC 4810 Environmental Justice**

[3 credit hours]

Environmental Justice examines the unequal distribution of environmental benefits and burdens among vulnerable communities. This course will examine the challenges and solutions associated with environmental justice, both as a social movement and as a public policy initiative. We will discuss several different policy areas like health, pollution, hazardous waste siting, climate change, food, and natural disasters; and strategies applied by NGOs and interest groups, to understand the patterns of environmental inequality and injustice.

**PSC 4900 Politics of Asia**

[3 credit hours]

Asia is the largest of all continents and hosts more than half the world's population. This course will apply a comparative framework to explore the historical, cultural, and social forces shaping the politics of Asia. We will explore the similarities and variations across countries, regional influences of countries on one another, and the role of the international community, with special focus on U.S. - Asia relations (such as North-South Korea, Japan, India, China).

Multicultural Non-US Diversity

**PSC 4940 Applied Politics Internship**

[3 credit hours]

A study of electoral politics, public decision-making or policy implementation through internships with candidates, political parties, public officials or governmental or nonprofit agencies.

**Term Offered:** Spring, Summer, Fall**PSC 4950 Capstone in Political Science**

[1 credit hour]

This course provides the opportunity to integrate and reflect on knowledge and experiences gained during completion of the political science major with an eye towards post-graduation endeavors such as graduate or professional study, or employment. Topics include how to construct a portfolio and write cover letters, resumes, and CVs.

**PSC 4960 Senior Honors Thesis**

[3 credit hours]

Supervised research and writing for honors students only.

**Term Offered:** Spring, Summer, Fall**PSC 4980 Current Topics In Political Science**

[3 credit hours]

Timely examination of emerging issues within the various segments of the discipline of political science.

**Term Offered:** Spring, Fall**PSC 4990 Independent Study In Political Science**

[1-3 credit hours]

Individual study and research in a selected political science topic under mentorship of a faculty member.

**Term Offered:** Spring, Summer, Fall

# PRE-MEDICAL (PMED)

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## **PMED 1000 Hospital Field Experience**

[1-3 credit hours]

Supervised independent study designed to provide pre-medical students with volunteer experiences in a health care institution. To receive 1 hr credit, students must complete 4 hrs of volunteer work per week. May be taken only as PS/NC.

**Term Offered:** Spring, Summer, Fall

# PROFESSIONAL SALES (PSLS)

## PSLS 3000 Sales Career Orientation And Management

[1 credit hour]

This course addresses careers in sales, looking at different types of selling and sales activities.

**Term Offered:** Spring, Fall

## PSLS 3080 Purchasing And Business Relationship Management

[3 credit hours]

Purchasing and Business Relationship Management is designed for students interested in a career in sales, purchasing or general marketing. You will be exposed to the industrial buyer behavior and buying processes, strategic purchasing, relationship management and supply chain management. You will develop skills in communication, planning, analytical thinking and negotiation.

**Term Offered:** Spring, Summer, Fall

## PSLS 3440 Professional Sales

[3 credit hours]

This course introduces the professional selling process from a customer collaboration perspective. The course utilizes role plays and exercises to develop a strong but adaptable sales process that will serve a student well in a business or complex selling situation.

**Term Offered:** Spring, Summer, Fall

## PSLS 3450 Sales Technologies and Strategies

[3 credit hours]

This course introduces the student to the activities involved in supporting buyer-seller interactions and the personal selling function using the principles of Customer Relationship Management (CRM). Its purpose is to provide skills in areas related to prospecting, sales force automation technology, time and territory management, and managing customer follow-up.

**Prerequisites:** BUAD 3010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSLS 4500 International Sales Negotiation

[3 credit hours]

This course is designed to explore the cultural and business implications of a sales career within an international or cross-cultural setting. Students will work in an applied setting engaging in role-playing and company analysis to understand the unique characteristics of this context. **Prerequisite:** Junior standing

## PSLS 4710 Salesforce Leadership

[3 credit hours]

The role and functions of the first line sales manager will be examined, including sales force size and organization, and management of the sales force. Issues related to hiring, training, supervising, compensating and evaluating salespersons are also emphasized.

**Prerequisites:** PSLS 3440 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSLS 4740 Advanced Sales

[3 credit hours]

This course provides in depth study of advanced selling concepts including relationship management, account management, strategic selling, team selling and selected current topics. The course includes business presentations, field work, role playing and case studies.

**Prerequisites:** (PSLS 3440 with a minimum grade of D- and PSLS 3450 with a minimum grade of D-)

**Term Offered:** Spring, Fall

## PSLS 4940 Integrative Capstone: Sales Internship

[3 credit hours]

Receive practical sales experiences working in a business environment.

**Prerequisites:** PSLS 3440 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

# PSYCHOLOGY (PSY)

## PSY 1010 Principles Of Psychology

[3 credit hours]

A survey of the branches of psychology and the scientific approach to the study of behavior.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## PSY 2100 Statistical Methods

[3 credit hours]

Descriptive and inferential statistics as applied to research in basic behavioral science and to clinical research. Students are encouraged to take PSY 3120 Understanding Psychological Research before taking this course.

**Prerequisites:** MATH 1320 with a minimum grade of C- or MATH 1330 with a minimum grade of C- or MATH 1340 with a minimum grade of C- or MATH 1750 with a minimum grade of C- or MATH 1830 with a minimum grade of C- or MATH 1850 with a minimum grade of C- or MATH 1920 with a minimum grade of C- or MATH 2450 with a minimum grade of C- or MATH 2600 with a minimum grade of C-

**Term Offered:** Spring, Fall

## PSY 2200 Abnormal Psychology

[3 credit hours]

Disordered human behavior; its etiology, classification and treatment. Consideration of different theories.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSY 2400 Cognitive Psychology

[3 credit hours]

Theoretical and empirical approaches to the role of pattern recognition, attention, memory, language, problem solving and decision making in human thinking.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSY 2510 Lifespan Developmental Psychology

[3 credit hours]

Emphasizes research and theory from conception through old age, and integrates important developmental issues within a lifespan approach.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSY 2600 Psychobiology

[3 credit hours]

The neural bases of behavior; topics include organization of the nervous system, perception and movement, learning and memory, emotion and motivation, drugs, language, and mental disorders.

**Term Offered:** Spring, Summer, Fall

## PSY 2610 Learning And Motivation

[3 credit hours]

Extended treatment of learning, conditioning and motivation including operant learning, reinforcement schedules, symbolic reward, generalization and related theoretical developments.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## PSY 2700 Social Psychology

[3 credit hours]

Theoretical and empirical treatment of socially-based perception and cognition, interpersonal influence, small group processes and interpersonal relations.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSY 3000 History Of Psychology

[3 credit hours]

An historical treatment of the development of modern psychology, starting in the mid 19th century, with some consideration of earlier approaches. Theoretical developments are emphasized.

**Prerequisites:** PSY 1010 with a minimum grade of D-

## PSY 3010 Culture And Psychology

[3 credit hours]

Theoretical and empirical examination of the generality of psychological concepts across cultural and ethnic groups. A cultural analysis of key topics in clinical, cognitive, developmental and social psychology.

**Prerequisites:** PSY 2200 with a minimum grade of D- or PSY 2400 with a minimum grade of D- or (PSY 2500 with a minimum grade of D- or PSY 2510 with a minimum grade of D- or PSY 2700 with a minimum grade of D-)

**Term Offered:** Spring, Summer, Fall

## PSY 3110 Research Methods In Psychology

[4 credit hours]

Design, execution, analysis and reporting of research in psychology. Lecture and laboratory.

**Prerequisites:** PSY 2100 with a minimum grade of C-

**Term Offered:** Spring, Fall

## PSY 3120 Understanding Psychological Research

[3 credit hours]

Emphasis on the interpretation (as opposed to execution) of psychological research. Features overview of statistical methods and experimental design principles. Recommended before taking PSY 2100 Statistical Methods.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring

## PSY 3200 Personality And Individual Differences

[3 credit hours]

Overview of major theoretical ideas and empirical research in personality and individual differences.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

## PSY 3210 Clinical Psychology

[3 credit hours]

An overview of the field of Clinical Psychology including clinical assessment, psychotherapy, community intervention methods and professional/ethical issues.

**Prerequisites:** PSY 2200 with a minimum grade of D-

**Term Offered:** Summer, Fall

**PSY 3220 Psychopathology Of Childhood**

[3 credit hours]

Clinical and experimental perspectives on behavioral, developmental and emotional disturbances in childhood.

**Prerequisites:** (PSY 2500 with a minimum grade of D- and PSY 2200 with a minimum grade of D-) or (PSY 2510 with a minimum grade of D- and PSY 2200 with a minimum grade of D-)

**Term Offered:** Spring, Summer

**PSY 3230 Psychological Testing**

[3 credit hours]

History and purpose of psychological testing, review of statistics, reliability and validity, test development, measures of intelligence, personality, and clinical assessment

**Prerequisites:** PSY 1010 with a minimum grade of D- and PSY 2100 with a minimum grade of D-

**PSY 3300 Organizational Development Theory and Principles**

[3 credit hours]

Organizational Development Theory and Principles This course uses applied behavioral science, social psychology and humanist ideologies. This course will examine organizational fundamentals It investigates systems theory; client centered; integral and learning organizations. Conscious business models; globalization; and sustainability will be discussed. Exploration of ethics, morality, values and transforming organizations will be studied. Upon completing this course a student can think critically about organizations and synthesize and apply organizational development theory and concepts.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**PSY 3310 OD Practices**

[3 credit hours]

Organizational Development Practices We will examine processes, interventions, and methods for leading and participating within organizations. Topics include working with collaborative organizations; initiating and leading change; process improvement; appreciative inquiry and action research; empowerment; integration and diversity; working with teams; focus groups; managing organizational stress; renewal and reintegration and authenticity and trust. Upon completion of the course students will possess tools to intervene in organizations and make informed, reasoned and ethical choices about assisting organizations to change.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSY 3320 Psychology of Work**

[3 credit hours]

Psychology of Work is intended to look at life inside an organization and view organizations from an interpersonal level. At the conclusion of this course students will possess a greater understanding of how they act and behave within an organization. Topics we will examine include whole life satisfaction; career anchors; influence; conflict; change; crucial and critical conversations; coaching; ownership of performance and tolerating ambiguity.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSY 3330 Psychology of Leadership**

[3 credit hours]

Psychology of Leadership focuses on developing yourself as a leader. Based on the work of Warren Bennis, we discuss how to become a leader and examination of our mindset about leadership. Students will demonstrate a holistic perspective of leadership by understanding the basics of leadership; by knowing our self and knowing the world. Students will critically think about their own leadership abilities and determine if leadership is for them.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

**PSY 3400 Cognitive Neuropsychology**

[3 credit hours]

Analysis of the neural basis of higher level mental functions (e.g., perception, language, emotion), with an emphasis on anatomic and functional differences between the left and right cerebral hemispheres.

**Prerequisites:** PSY 2400 with a minimum grade of D-

**Term Offered:** Spring, Fall

**PSY 3510 The Adult Years**

[3 credit hours]

Emphasizes growth and change throughout adulthood. Issues of personality and cognitive change are investigated, and theory and research are highlighted.

**Prerequisites:** PSY 2500 with a minimum grade of D- or PSY 2510 with a minimum grade of D-

**Term Offered:** Fall

**PSY 3610 Behavioral Neuroscience**

[3 credit hours]

In-depth treatment of the structure and function of neurons and their mediation of behavior, both normal and abnormal: circadian rhythms, eating, emotions, sexual behavior, memory, language and mental disorders. The scientific study of the brain and methods of neuroscience are emphasized.

**Prerequisites:** PSY 2600 with a minimum grade of C or BIOL 2150 with a minimum grade of C or BIOL 2170 with a minimum grade of C or BIOL 4250 with a minimum grade of C

**Term Offered:** Spring

**PSY 3620 Sensory Processes**

[3 credit hours]

In-depth treatment of the neural organization of the sensory and motor systems. A comparative and evolutionary approach to the study of perception is emphasized.

**PSY 3630 Everyday Behavior Analysis**

[3 credit hours]

Application of learning and motivation in the home, classroom and workplace. Covers how to define and measure behavior principles of positive and negative reinforcement, and the effects of aversive control.

**Term Offered:** Spring, Summer, Fall

**PSY 3710 Psychology And The Law**

[3 credit hours]

Emphasizes the utilization of theoretical and empirical notions of psychological science as they apply to both civil and criminal law.

**Prerequisites:** PSY 2700 with a minimum grade of D-

**Term Offered:** Spring, Fall



**PSY 3720 Social Cognition**

[3 credit hours]

This course examines how people make sense of other people, themselves, and social situations by examining the cognitive structures and processes involved in judgments, decisions, perceptions, beliefs, and behavior. The topics include (but are not limited to) attribution, counterfactual thinking, judgment heuristics, schemas, person perception, attitudes, and stereotypes/prejudice.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**PSY 3730 Stereotyping, Prejudice, & Discrimination**

[3 credit hours]

This course will examine issues of and related to stereotyping, prejudice, and discrimination from a social psychological perspective with a special emphasis on racism and sexism.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural US Diversity

**PSY 3740 Health Psychology**

[3 credit hours]

This course explores the behavioral and psychological factors that affect stress and illness; topics include health-compromising behaviors (e.g., smoking), stress and pain management, alternative medicine, treatment adherence, and chronic illness.

**Prerequisites:** PSY 1010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSY 3750 Science and Pseudoscience**

[3 credit hours]

In this interdisciplinary course, students will be exposed to scientific principles, concepts, and methods that guide the pursuit of knowledge and aid in the development of critical thinking skills. Students will also be provided with information on how knowledge obtained from science impacts our lives and understanding of the world around us. In learning what constitutes a scientific claim, students will also learn what constitutes an unscientific claim, or pseudoscience.

**Term Offered:** Spring, Summer, Fall

**PSY 3800 Honors Proposal**

[1-3 credit hours]

Literature review and design of an experiment that will form the basis for an Honors Thesis; a formal written proposal will be prepared in conjunction with, and approved by, the thesis advisor and must be submitted to the departmental honors advisor.

**Prerequisites:** PSY 2100 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSY 3910 Honors Research**

[1-3 credit hours]

Data collection for research that will form the basis for the Honors Thesis. Admission to Psychology Honors and consent of instructor.

**Term Offered:** Spring, Summer, Fall

**PSY 3940 Externship In Psychology**

[1-4 credit hours]

Supervised work experience in Psychology-related employment settings.

**Term Offered:** Spring, Summer, Fall

**PSY 4100 Research Practicum**

[1-4 credit hours]

Directed by experience in empirical psychological research by students participating in faculty laboratories. Section number denotes field of research. :030-Developmental psychology :040-Social psychology :060-Cognitive and biological psychology :070-Clinical psychology

**Term Offered:** Spring, Summer, Fall

**PSY 4500 Research In Developmental Psychology**

[3-4 credit hours]

A hybrid writing-intensive course developed to provide students both classroom and laboratory experiences to provide training in designing and conducting research in developmental psychology; includes work on research projects.

**Prerequisites:** (PSY 2500 with a minimum grade of D- and PSY 3110 with a minimum grade of D-) or (PSY 2510 with a minimum grade of D- and PSY 3110 with a minimum grade of D-)

**Term Offered:** Spring

**PSY 4700 Research In Social Psychology**

[2-4 credit hours]

A hybrid research course with both classroom and laboratory experiences to provide training in designing and conducting research in experimental social psychology, includes direct work on research projects. May repeat for credit. Prerequisite: PSY 3110, 2700 or equivalent.

**Prerequisites:** PSY 3110 with a minimum grade of D- and PSY 2700 with a minimum grade of D-

**PSY 4910 Independent Research**

[1-4 credit hours]

This course will be offered every semester and will fill the requirement for an advanced research course. A student will carry out an empirical research project of his or her own design under the guidance of a member of the faculty.

**Prerequisites:** PSY 3110 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**PSY 4960 Honors Thesis**

[2-3 credit hours]

Analysis, interpretation and reporting of research aimed at understanding some aspect of behavior or its underlying mechanisms. The reports include a formal written thesis, a scientific poster and an oral presentation.

**Prerequisites:** (PSY 3110 with a minimum grade of D- and PSY 3800 with a minimum grade of D- and PSY 3820 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**PSY 4980 Special Topics In Psychology**

[3 credit hours]

Seminar discussion of selected topics in psychology to allow for a more comprehensive treatment than possible in other available courses; or technical laboratory course in neuroanatomical techniques. Topics will vary depending on student demand and availability of instructors.

**Term Offered:** Spring, Fall

**PSY 4990 Independent Study**

[1-4 credit hours]

This course is a tutorial consisting of directed independent reading, conferences with the instructor to discuss the readings and assess the student's understanding of their significance, and a paper in which the student summarizes the read material, integrates the material and discusses its significance for understanding some aspect of behavior.

**Term Offered:** Spring, Summer, Fall

# PUBLIC HEALTH (PUBH)

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**PUBH 4110 Intro Spanish for Healthcare**

[1-3 credit hours]

This course introduces the Spanish language in a medical context. Through development of oral and aural skills, enables more effective communication with Spanish speaking patients.

**PUBH 4120 Adv Med Spanish Hlth Care Pro**

[3 credit hours]

Prerequisites: Previous experience in Spanish language and/or completion of PUBH411 Builds upon previous Spanish in a medical context and development of oral and aural skills for more effective communication, improving interaction with Spanish speaking patients.

# RECREATION AND REC THERAPY (RCRT)

## **RCRT 1300 Introduction To Recreation And Leisure Studies**

[3 credit hours]

An introductory course which gives an overview of recreation and leisure in educational, governmental, institutional and professional settings. Explores historical, social and economic implications from personal and professional perspectives. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 1310 Recreation Programming**

[3 credit hours]

An introductory course that presents theories and principles of programming, program planning, practical experiences in implementation, and facilitation of recreational programs. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 2200 Principles of Travel, Tourism and Event Planning**

[3 credit hours]

Travel and tourism is one of the largest industries in the world today. Students will be introduced to the principles of tourism, industry history, types and functions of tourism sectors, the tourism distribution system, the role of stakeholders in the creation and delivery of tourism, and motivations for travel as a means of understanding tourism demand.

## **RCRT 3310 Inclusive Recreation**

[3 credit hours]

An introductory course which defines the principals of inclusion and major legislation that impacts the provision and delivery of recreational services for individuals with disabilities. Thirty hour volunteer component required. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 3710 Leadership and Administration In Outdoor Pursuits**

[3 credit hours]

An introduction to theory and techniques of adventure programming as a treatment protocol and/or leisure education tool. Students learn and apply the components of risk management through the development of a risk management plan and practical implication exercises. Outdoor trips required. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 1310 with a minimum grade of D-

**Term Offered:** Spring, Fall

## **RCRT 4000 Community Event Planning**

[3 credit hours]

This course introduces the principles, strategies, and risk management concerns for planning a variety of events to achieve treatment outcomes and community/social integration. Students gain experience planning accessible events for a variety of group sizes and diverse populations. Event critiques required. Minimum "C" required for RCRT majors.

**Term Offered:** Summer, Fall

## **RCRT 4010 Planning & Promotion of Sport**

[3 credit hours]

This course focuses on the basic principles of marketing and delivery of services associated with intercollegiate athletics, professional, and multi-sport club operations, facilities and management of resources. This course also examines motivation and behavior of sports tourists.

**Term Offered:** Fall

## **RCRT 4330 Administration In Recreation And Recreational Therapy**

[3 credit hours]

This course focuses on the administrative functions of delivering therapeutic recreation services. Students will gain an understanding of the aspects of management principles including ethics, legislation, technology, quality management, risk management, financial and human resources, marketing, and accrediting agencies. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 4340 Leisure Recreation And Aging**

[3 credit hours]

This course provides a study of the impacts of aging on leisure and recreation activities during middle and later adulthood by investigating the aging process, leisure across the lifespan, and the impact of leisure and recreation on quality of life and wellness. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 4440 Park And Recreation Planning**

[3 credit hours]

An integration of landscape architecture, facility design and location, as well as the functional aesthetic considerations of park and recreational facility planning. Emphasis will be on plan-formulation procedures.

**Term Offered:** Spring

## **RCRT 4450 Research Applications In Recreation And Recreational Therapy**

[3 credit hours]

This course introduces research applications utilized by Recreation Therapy practitioners. Students will learn about evidence based practice, development and implementation of survey research, and the use of experimental designs. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 4600 Therapeutic Arts**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using arts and crafts modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 4610 Rt Intervention: Horticulture Therapy**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using horticulture modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

## **RCRT 4620 Animal Assisted Therapy**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using a variety of animal-assisted modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4630 Therapeutic Activities**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using a variety of games, humor and play modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4640 Rt Intervention: Therapeutic Groups**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using therapeutic group techniques and processes as a modality. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4660 Relaxation And Stress Management**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using relaxation and stress management techniques as a modality. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4670 Rt Intervention: Leisure Education**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using leisure education activities, including: social skills, values clarification, leisure awareness, resources and knowledge. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4680 Rt Intervention: Assistive Technology And Techniques**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes utilizing assistive technology, techniques, and resources in therapeutic settings. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4690 Rt Intervention: Aquatic Therapy**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes utilizing swimming, evidence-based aquatic programming methods, and resources. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Summer, Fall

**RCRT 4720 Introduction To Therapeutic Recreation**

[3 credit hours]

This course is designed to introduce the student to theories, models, principles, and history of therapeutic recreation service. Through lectures, discussions and self-directed learning activities, the student will examine the structure and function of therapeutic recreation processes in a variety of treatment settings. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4730 Medical And Clinical Aspects Of Therapeutic Recreation**

[3 credit hours]

This course is designed to provide the student with in-depth knowledge of health-related conditions or disabilities related to physical, neurological, sensory and metabolic impairments across the lifespan. Uses of pharmacological interventions, family involvement, programming, and other implications impacting Therapeutic Recreation practice will be examined. Minimum "C" required for RCRT majors.

**Term Offered:** Fall

**RCRT 4740 Assessment And Documentation In Therapeutic Recreation**

[3 credit hours]

This course introduces the student to the APIE(D) process, reviews assessment tools (standardized and self-designed) used in practice, common documentation methods and skills needed for therapeutic recreation practice including: initial assessment, treatment planning, documentation, and discharge planning. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4750 Group Dynamics In Recreational Therapy**

[3 credit hours]

This course introduces students to the concepts and theories of the therapeutic group process as it applies to professional practice. Students will be introduced to and practice: facilitation skills, behavior modification techniques, and effective communication and leadership skills. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4760 Research Administrative Programming In Therapeutic Recreation**

[3 credit hours]

Course will focus on current issues and techniques relating to comprehensive research program design, implementation and evaluation relating to the practice of therapeutic recreation.

**Prerequisites:** (RCRT 4720 with a minimum grade of D- and RCRT 4730 with a minimum grade of D- and RCRT 4740 with a minimum grade of D-)

**RCRT 4770 Project Design**

[2 credit hours]

In support of the recreation therapy internship the student will design a capstone project that links practical experience with formal academic preparation.

**Corequisites:** RCRT 4940

**Term Offered:** Spring, Summer, Fall

**RCRT 4780 Project Evaluation**

[2 credit hours]

In support of RCRT 4770, this course requires the student to implement, evaluate, and prepare a professional presentation of the recreation therapy internship capstone project.

**Term Offered:** Spring, Summer, Fall



**RCRT 4790 Medical & Clinical Aspects In Therapeutic Recreation II**

[3 credit hours]

This course is designed to provide the student with in-depth knowledge of health-related conditions or disabilities related to intellectual and developmental disabilities and psychological impairments across the lifespan. Uses of pharmacological interventions, family involvement, programming, and other implications impacting Therapeutic Recreation practice will be examined. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-

**Term Offered:** Spring

**RCRT 4800 Clinical: Physical Rehabilitation**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a physical rehabilitation population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**RCRT 4810 Clinical: Psychiatric Rehabilitation**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a psychiatric rehabilitation population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**RCRT 4820 Clinical: Intellectual Deficit/Developmental Disability**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with an ID/DD rehabilitation population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**RCRT 4830 Clinical: Geriatric**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a geriatric population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**RCRT 4840 Clinical: Pediatric**

[1 credit hour]

This course requires a 50-hour practicum experience in a community agency. The practicum experience provides the student a structured environment to apply the APIE(D) process with a pediatric population. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4730 with a minimum grade of D-

**Term Offered:** Summer, Fall

**RCRT 4850 Internship Preparation**

[1 credit hour]

This course is designed to prepare the student for the internship process and professional employment in recreation therapy. Students will learn and practice professional skills; such as, resume writing, interviewing techniques, and professionalism. Student internship expectations and professional certifications and licensure are also addressed. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4860 Therapeutic Fitness**

[1 credit hour]

This course provides the student the fundamental skill development needed to implement therapeutic outcomes using therapeutic fitness modalities. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4870 Program Planning In Recreational Therapy**

[3 credit hours]

This course requires the student to apply cumulative knowledge of the APIE(D) process through designing evidence-based: treatment programs, program evaluations, protocols and treatment plans in recreation therapy practice. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4900 Seminar In Recreation And Leisure**

[1-3 credit hours]

This course provides faculty the opportunity to develop additional curriculum in recreation therapy related academic areas not offered as part of the current curriculum. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Fall

**RCRT 4930 Senior Internship**

[4 credit hours]

An opportunity for the student to become totally involved as an intern in functionally related tasks which will help prepare for an appropriate role as a professional in the field. Not available for therapeutic recreation students. This course may be taken twice in the same semester.

**Term Offered:** Spring, Summer, Fall

**RCRT 4940 Internship In Recreational Therapy**

[5 credit hours]

In accordance with the University of Toledo and NCTRC certification requirements, this course requires 560 hours of internship experience over a minimum of 14 consecutive weeks supervised by a CTRS. The internship experience is only offered in the summer and requires faculty approval. Minimum "C" required for RCRT majors.

**Prerequisites:** RCRT 4950 with a minimum grade of D-

**Term Offered:** Summer

**RCRT 4950 Recreation Therapy Internship I**

[5 credit hours]

In accordance with the University of Toledo and NCTRC certification requirements, this course requires 280 hours of internship experience over a minimum of 7 consecutive weeks supervised by a CTRS. The internship experience is only offered in the summer and requires faculty approval. Minimum "C" required for RCRT majors.

**RCRT 4960 Recreation Therapy Internship II**

[5 credit hours]

In accordance with the University of Toledo and NCTRC certification requirements, this course requires 280 hours of internship experience over a minimum of 7 consecutive weeks supervised by a CTRS. The internship experience is only offered in the summer and requires faculty approval. Minimum "C" required for RCRT majors.

**RCRT 4990 Independent Study In Recreation And Leisure Studies**

[1-3 credit hours]

This course provides students the opportunity to develop an independent learning experience in support of academic and/or professional interests. Minimum "C" required for RCRT majors.

**Term Offered:** Spring, Summer, Fall

# RELIGION (REL)

## REL 1220 World Religions

[3 credit hours]

A study of the major religions of the world, with an emphasis on their histories, beliefs and practices

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## REL 2000 Introduction To Religion

[3 credit hours]

Critical and thematic study of the concepts, values, practices and world-views intrinsic to the religious life.

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## REL 2070 Early Judaism

[3 credit hours]

Institutions, culture and religion from the earliest times through the Biblical period to the Medieval period.

## REL 2300 Understanding The Monotheistic Religions

[3 credit hours]

A critical examination of the similarities and differences between the three major manifestations of monotheistic religion in the Western Tradition, Islam, Judaism and Christianity.

Core Arts & Humanities, Multicultural Non-US Diversity, Trans Mod Arts and Humanities

## REL 2310 Old Testament/Tanakh

[3 credit hours]

An examination of the history and ideas of the Jewish scriptures within the context of Judaism and their appropriation within Christian traditions.

**Term Offered:** Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## REL 2330 New Testament History And Ideas

[3 credit hours]

Examination of the history and ideas of the New Testament.

**Term Offered:** Spring

Core Arts & Humanities, Trans Mod Arts and Humanities

## REL 2350 Bible And Church Authority

[3 credit hours]

This course will explore issues related to the sources and exercise of religious authority within Christianity, with an extended consideration given to a particular Christian tradition determined by the instructor.

## REL 2380 Topics In Catholic Thought

[3 credit hours]

Critical examination of selected topics in contemporary Catholic thought and life.

**Term Offered:** Spring, Fall

## REL 2410 Introduction To Christian Thought

[3 credit hours]

This course will introduce students to the fundamental creedal commitments of Christianity, with an extended consideration given to a particular Christian tradition determined by the instructor.

**Term Offered:** Fall

## REL 2500 Introduction To Islam

[3 credit hours]

An introduction to the academic understanding of Islam. Topics may include; faith, rituals, law (Shari'h), jurisprudence (Figh), theology (Kalam), and stories from the Islamic heritage. Non-Western multicultural course. Multicultural Non-US Diversity

## REL 2610 Religious Studies Topics In The Humanities

[3 credit hours]

Cross-listings with 2000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

## REL 2980 Special Topics In Religious Studies

[3 credit hours]

Special topics courses. Course may be repeated for credit as topics vary.

**Term Offered:** Spring, Fall

## REL 3000 Religious Studies Proseminar

[1 credit hour]

This course enhances students' professional development in fields related to religious studies.

## REL 3080 Jewish Biblical Studies

[3 credit hours]

An examination of the texts and methods of historical and contemporary Jewish scriptural studies.

**Term Offered:** Spring, Fall

## REL 3100 Islam

[3 credit hours]

An overview of the central doctrines and the many cultural expressions of Islam, the role of the Qur'an and the Prophet Muhammad, Hadith as religious narrative, and tensions between law, modernity, and mysticism. Multicultural Non-US Diversity

## REL 3210 Ancient And Medieval Philosophy

[3 credit hours]

A study of ancient and medieval philosophy from the pre-Socratics to Aquinas.

**Term Offered:** Fall

## REL 3350 The Qur'an And Hadith

[3 credit hours]

A study of the two main texts for Islamic belief and practice: Qur'an and the Hadith (the tradition of the Prophet Muhammad). Topics include their thematic structure, methods of interpretation, and their unique authority within Islam.

## REL 3420 Christian Ethical Perspectives

[3 credit hours]

This course will study fundamental ethical concerns in Christian thought, with an extended consideration given to a particular Christian tradition determined by the instructor.

**Term Offered:** Spring

## REL 3500 Eastern Thought

[3 credit hours]

An examination of major philosophies of Asia and the Far East, their specific concerns and their relevance to contemporary problems.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**REL 3510 Comparative Religion: Living Non-Western Religions**

[3 credit hours]

Study of the major attitudes toward life, human existence and the world embodied in such major religions of the world as Buddhism, Confucianism, Hinduism, Islam and Taoism. Non-U.S. Diversity

**REL 3570 Philosophy Of Religion**

[3 credit hours]

A critical, philosophical exploration of questions about the nature of religion, including the existence and nature of God, the problem of evil, and the relation between faith and knowledge. Other topics may include the relation of religion to science and morality, as well as the role of religious experience and miracles in religious belief.

**Term Offered:** Spring, Fall**REL 3580 Contemporary Issues In Islam**

[3 credit hours]

An examination of key contemporary issues facing Islamic thought and culture, such as the changing and contested understandings of religious authority, jihad, role of women, courting, and family norms and the effects on all these of globalization and social media. Course may be repeated for credit as topics vary. Non-Western multicultural course.

**Term Offered:** Spring, Fall

Multicultural Non-US Diversity

**REL 3610 Religious Studies Topics In The Humanities**

[3 credit hours]

Cross listings with 3000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**REL 3670 Christian Worship And Ritual**

[3 credit hours]

This course will explore the history of both Christian ritual practice and the diverse theological understandings of that practice, with a focus on a particular Christian tradition determined by the instructor.

**REL 3710 Literature Of The Old Testament**

[3 credit hours]

A study of the Old Testament from the literary point of view, including ancient poetry, history, romance, short story, hymn, prophecy and wisdom writing. Recommended: ENGL 2700 or 2800.

**Term Offered:** Spring, Summer**REL 3720 Literature And Mythology**

[3 credit hours]

Study of classical and biblical mythologies in modern Western literature, private mythologies and literary adaptations of patterns from legend and folklore. Recommended: ENGL 2700 or 2800.

**Term Offered:** Fall**REL 3900 Seminar-Contemporary Religious Thought**

[3 credit hours]

A critical examination of selected topics in the area of religion.

**Term Offered:** Spring, Fall**REL 3980 Special Topics In Religious Studies**

[3 credit hours]

Special topics courses. Course may be repeated for credit as topics vary.

**Term Offered:** Spring, Fall**REL 4520 History Of The Middle East From 600 - 1500**

[3 credit hours]

A survey of Middle East history from the emergence of Islam and the formation of Islamic states until the establishment of the Ottoman and Persian empires in the 15th-16th centuries.

**REL 4600 Religious Studies Topics In The Arts**

[3 credit hours]

Cross listings with 4000-level courses offered in the visual and performing arts departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**Term Offered:** Fall**REL 4610 Religious Studies Topics In The Humanities**

[3 credit hours]

Cross listings with 4000-level courses offered in the humanities departments. Specific topics vary, and course may be repeated for credit as topics vary. Check course schedules for specific subject and prerequisites.

**Term Offered:** Spring, Fall**REL 4630 Religion, Violence and Peace**

[3 credit hours]

This seminar is a sustained exploration of whether religion is related to the occurrence of violence, peace or community-building, and if so, when and how.

**REL 4820 Anthropology Of Religion**

[3 credit hours]

Cross-cultural comparison of religious concepts, roles, and practices. The analysis of religious symbolism as well as their sociopolitical and economic basis.

**Prerequisites:** ANTH 2800 with a minimum grade of D-**REL 4900 Seminar In Religious Studies**

[3 credit hours]

Topics vary. Course may be repeated for credit as topics vary. See adviser for Seminar Request Form.

**Term Offered:** Spring**REL 4920 Directed Readings In Religious Studies**

[1-4 credit hours]

Critical inquiry of selected works under the guidance of an instructor on a topic not offered as a regular course.

**Term Offered:** Fall**REL 4940 Internship In Religious Studies**

[1-6 credit hours]

Student is placed in a campus or community setting approved by the instructor of record to work on issues pertaining to religion, and analyzes verbally and in writing how religion functioned in this setting.

**Term Offered:** Spring, Summer, Fall**REL 4960 Senior Thesis for Honors**

[3 credit hours]

Prerequisite: Junior standing and consent of program director

**Term Offered:** Spring, Summer, Fall**REL 4980 Special Topics In Religious Studies**

[3 credit hours]

Topics vary. Course may be repeated for credit as topics vary.

**Term Offered:** Spring, Fall

**REL 4990 Independent Study In Religious Studies**

[1-4 credit hours]

Directed study in religious studies under the supervision of a religious studies instructor.

**Term Offered:** Spring, Fall



# RESEARCH AND MEASUREMENT (RESM)

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## **RESM 4100 Educational Statistics**

[3 credit hours]

Introduction to major concepts of statistical description; central tendency, dispersion, and relative position and relationship. Inferential methods such as t-tests, one-way analysis of variance and multiple comparisons are also presented.

**Term Offered:** Spring, Summer, Fall

## **RESM 4200 Classroom Assessment**

[3 credit hours]

Familiarizes preservice teachers with concepts and principles of classroom assessment. Examines formal and informal strategies for assessing student achievement and explores conceptual and practical issues in assessment and grading.

**Term Offered:** Spring, Fall

## **RESM 4990 Independent Study In Educational Research**

[1-4 credit hours]

The study of a current topic in educational research, measurement, statistics, or program evaluation. The student meets with the instructor at arranged intervals without formal classes.

**Term Offered:** Summer

# RESPIRATORY CARE (RCBS)

## RCBS 3010 Respiratory Care Fundamentals

[4 credit hours]

A study of the anatomy and physiology of the respiratory and cardiovascular systems, including the physics of gas exchange, ventilation, and blood flow.

**Corequisites:** RCBS 3020

**Term Offered:** Summer

## RCBS 3020 Respiratory Care Practice I

[4 credit hours]

An introductory experience in the basic assessment and care of the patient with cardiopulmonary disease. Ethical issues, interpersonal communication, and infection control in the healthcare setting will also be covered.

**Corequisites:** RCBS 3010

**Term Offered:** Summer

## RCBS 3110 Respiratory Care Therapeutics I

[4 credit hours]

Etiology, pathophysiology, clinical manifestations, and treatment of selected diseases of pulmonary and cardiovascular systems with emphasis on pharmacologic principles and agents used in the treatment of those diseases.

**Prerequisites:** (RCBS 3010 with a minimum grade of D- and RCBS 3020 with a minimum grade of D-)

**Term Offered:** Fall

## RCBS 3120 Respiratory Care Practice II

[7 credit hours]

Didactic, laboratory, and introductory clinical experiences with a variety of equipment and procedures that are used to establish and maintain a patent airway, and to monitor and treat patients with cardiopulmonary diseases.

**Prerequisites:** (RCBS 3010 with a minimum grade of D- and RCBS 3020 with a minimum grade of D-)

**Term Offered:** Fall

## RCBS 3130 Cardiopulmonary Diagnostics I

[4 credit hours]

Discussion of the theory and selected techniques used in cardiopulmonary diagnostics, including analysis of blood gases, cardiac rhythms, hemodynamic monitoring values, spirometry results, and chest x-rays.

**Prerequisites:** (RCBS 3010 with a minimum grade of D- and RCBS 3020 with a minimum grade of D-)

**Term Offered:** Fall

## RCBS 3210 Respiratory Care Therapeutics II

[4 credit hours]

Continuation of RCBS 3110 with consideration of disease states of the pulmonary and cardiovascular systems not previously considered. Emphasis on analysis of assessment, diagnosis and treatment of individual patients by students.

**Prerequisites:** (RCBS 3110 with a minimum grade of D- and RCBS 3120 with a minimum grade of D- and RCBS 3130 with a minimum grade of D-)

**Term Offered:** Spring

## RCBS 3220 Respiratory Care Practice III

[7 credit hours]

Theoretical principles involved in the initiation, maintenance, and discontinuance of mechanical ventilation. Laboratory experiences with a variety of adult mechanical ventilators. Clinical experiences providing respiratory care for patients requiring mechanical ventilation.

**Prerequisites:** (RCBS 3110 with a minimum grade of D- and RCBS 3120 with a minimum grade of D- and RCBS 3130 with a minimum grade of D-)

**Term Offered:** Spring

## RCBS 3230 Cardiopulmonary Diagnostics II

[3 credit hours]

Classroom and laboratory experiences in the theory and practice of selected cardiopulmonary diagnostic procedures including measures of pulmonary volumes, flows, gas distribution, and gas diffusion. Capnography, exercise testing, and specialized test regimens will also be covered.

**Prerequisites:** (RCBS 3110 with a minimum grade of D- and RCBS 3120 with a minimum grade of D- and RCBS 3130 with a minimum grade of D-)

**Term Offered:** Spring

## RCBS 3300 Advanced Cardiac Life Support

[1 credit hour]

American Heart Association Advanced Cardiac Life Support course designed to aid in the management of cardiopulmonary emergencies. Students must have previous knowledge of cardiac pharmacology and rhythms, and current CPR certification.

**Term Offered:** Spring, Fall

## RCBS 4140 Integrated Clinical Practice I

[4 credit hours]

Clinical experiences in the acute care setting that requires the application of theory related to the diagnosis, treatment and management of adult, neonatal and pediatric patients with cardiopulmonary disease.

**Prerequisites:** (RCBS 3210 with a minimum grade of D- and RCBS 3220 with a minimum grade of D- and RCBS 3230 with a minimum grade of D-)

**Term Offered:** Fall

## RCBS 4150 Neonatal/Pediatric Respiratory Care

[4 credit hours]

A discussion of the etiology, pathophysiology and treatment of neonatal and pediatric disorders. Laboratory exercises designed to familiarize student with neonatal and pediatric resuscitation and ventilation.

**Prerequisites:** (RCBS 3210 with a minimum grade of D- and RCBS 3220 with a minimum grade of D- and RCBS 3230 with a minimum grade of D-)

**Term Offered:** Fall

## RCBS 4160 Clinical Assessment

[3 credit hours]

This course will provide the students with knowledge and enhance their critical thinking skills related to patient assessment and the development and modification of patient respiratory care plans.

**Prerequisites:** (RCBS 3210 with a minimum grade of D- and RCBS 3220 with a minimum grade of D- and RCBS 3230 with a minimum grade of D-)

**Term Offered:** Fall

**RCBS 4240 Integrated Clinical Practice II**

[3 credit hours]

Clinical experiences with a primary focus on advanced skills used in the management of cardiopulmonary patients of all ages in the acute and subacute care settings.

**Prerequisites:** (RCBS 4150 with a minimum grade of D- and RCBS 4140 with a minimum grade of D-)

**Term Offered:** Spring

**RCBS 4510 Respiratory Care in Alternate Sites**

[3 credit hours]

The delivery of care to cardiopulmonary patients outside of the acute care facility will be discussed. Standards of care in addition to the funding of this care will be investigated. Special procedures in respiratory care will be presented.

**Term Offered:** Spring

**RCBS 4700 Research Analysis In Respiratory Care**

[3 credit hours]

Review of appropriate statistical knowledge required to analyze applied/clinical and basic published research. Includes a review of the elements of basic research design, reliability and validity, and critical review of cardiopulmonary research literature.

**Term Offered:** Fall

**RCBS 4800 Issues In Professional Practice**

[3 credit hours]

A capstone course designed to prepare the senior student for professional practice. Decision-making skills in complex clinical situations are developed through the use of clinical simulations and student case presentations.

**Prerequisites:** (RCBS 4140 with a minimum grade of D- and RCBS 4150 with a minimum grade of D- and RCBS 4160 with a minimum grade of D-) and RCBS 4700 with a minimum grade of D-

**Term Offered:** Spring

**RCBS 4810 Preparation For Professional Practice**

[1 credit hour]

This laboratory course is designed to complement the corequisite RCBS 4800 lecture course. Emphasis on enhancing the students' ability to integrate complex cognitive and psychomotor skills in preparation for professional practice.

**Term Offered:** Spring

**RCBS 4990 Independent Study**

[1-4 credit hours]

Independent study of specific topics and issues under the supervision of a faculty member of the department of health promotion and human performance. The student will participate in independent reading, clinical/laboratory research, field experience and other similar activities. Independent study course must have a specialty; seminar sheet required.

**Term Offered:** Spring

# SCHOOL PSYCHOLOGY (SPSY)

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## **SPSY 3100 Psychological Testing and Assessment**

[3 credit hours]

This course provides an overview of the major topics in the field of psychological testing, such as norms, statistics, reliability, validity, test development, defining and measuring intelligence, educational assessment, personality assessment, and clinical assessment. The main objective of this course is to develop the student's knowledge about the variables, objectives, and effects of psychological testing. After completing this course students will, understand terminology and concepts; list criteria for test selection; describe standardized tests and measurement techniques; discuss issues involved in testing.

**Prerequisites:** PSY 2100 with a minimum grade of D- or MATH 2600 with a minimum grade of D- or RESM 4100 with a minimum grade of D-

**Term Offered:** Spring, Fall

# SOCIAL WORK (SOCW)

## SOCW 1030 Introduction To Social Welfare

[3 credit hours]

Introduction to the social welfare institution, its history, relation to social values, social welfare laws and programs, and the systems characteristic of service delivery. C or better required for majors.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity

## SOCW 2010 Survey Of The Social Work Profession

[4 credit hours]

This course provides an opportunity for the student to explore the dynamics of the social work profession. The student will examine various components of social work, including an overview of strengths perspective, systems theory, ethics, client populations served, roles of social workers who serve these populations, and APA style of professional writing. The course also includes sixty hours of supervised field experience and directed classroom discussion connecting field experience to social work practice.

**Prerequisites:** SOCW 1030 (may be taken concurrently) with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## SOCW 2210 Field Experience And Lab I

[3 credit hours]

Supervised field experience. Ninety hours evenly distributed with weekly directed classroom discussion of reflecting the relationship of field experience to social work practice. This course meets the WAC requirements, and journaling and written classroom exercises will be required.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## SOCW 3020 Social Work Issues In Social & Economic Justice

[3 credit hours]

Provides an in depth study of the concepts of social and economic justice relative to the practice of social work including power and economic distribution, oppression, discrimination and confronting injustice.

**Prerequisites:** SOCW 2210 with a minimum grade of D-

## SOCW 3030 Survey Of Social Work Assessment Tools

[3 credit hours]

Provides an overview of various tools used by social workers in practice including use of DSM IV, individual, family, group, organization and community assessments.

**Prerequisites:** SOCW 2210 with a minimum grade of D-

## SOCW 3040 Social Work With Older Adults

[3 credit hours]

History and development of practice with older adults. Trends in aging, services for older adults, health care, social security, retirement, elder abuse, substitute care decision, hospice, loss, death and dying.

**Prerequisites:** SOCW 2010 with a minimum grade of D-

**Term Offered:** Summer, Fall

## SOCW 3050 Crisis Intervention

[3 credit hours]

Provides an examination of crisis intervention theories and strategies to deal with stress. Emphasis is on observing, formulating, defining and measuring the threats, tasks and opportunities associated with crisis behavior.

**Prerequisites:** SOCW 2010 with a minimum grade of D-

## SOCW 3060 Social Work Ethics

[3 credit hours]

Examination of social work values and their professional implications. Provision of working knowledge of Social Work Code of Ethics and licensing and subsequent professional responsibilities. Integration of theoretical models with practice situations.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring, Summer

## SOCW 3070 Child Welfare I

[3 credit hours]

Child welfare history. Knowledge, concepts and skill development concerning child maltreatment and protection, risk assessment and family-centered services.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

## SOCW 3080 Women In Poverty

[3 credit hours]

Provides an understanding of women's poverty and its perpetuation through marriage and divorce, women's work and wages, welfare, children, child support and the economics of the unpaid women's labor.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring, Summer, Fall

## SOCW 3090 Social Work Perspectives On Culture And Oppression

[3 credit hours]

Focus is on vulnerable and oppressed groups who are among social welfare consumers. Cultural characteristics and group strengths, needs, priorities and experiences within the context of social work are also explored.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Spring

## SOCW 3110 Social Work Practice I

[3 credit hours]

An overview of generalist social work practice with various system sizes. Emphasizes strengths, empowerment, social and economic justice, ethical practice and examination of self in relation to professional social work. Must be admitted to the social work program.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

## SOCW 3120 Social Work Interviewing And Recording

[4 credit hours]

Develops skills needed for the generalist social work interview and appropriate recording techniques. Integrates computer simulation, role-play and video recording for a participatory learning experience.

**Prerequisites:** SOCW 3110 with a minimum grade of C

**Term Offered:** Spring



**SOCW 3170 Child Welfare II**

[3 credit hours]

Addresses the developmental and permanence needs of children, effects of maltreatment on children, placement issues, separation, reunification and adoption. Includes child welfare services for children with developmental disabilities.

**Prerequisites:** (SOCW 3070 with a minimum grade of C and SOCW 2010 with a minimum grade of C)

**Term Offered:** Spring

**SOCW 3210 Human Behavior in the Soc Environment I**

[3 credit hours]

Theoretical social-work related approaches to understanding human behavior and related biological, psychological, social, cultural and environmental factors affecting individuals, families and groups, from infancy to adolescence, within the context of diversity.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

**SOCW 3220 Human Behavior In Social Environment II**

[3 credit hours]

Theoretical social work - related approaches to understanding human behavior and related biological, psychological, social, cultural and environmental factors affecting individual, family and group behavior, from young adulthood to old age.

**Prerequisites:** SOCW 3210 with a minimum grade of C

**Term Offered:** Spring

**SOCW 3230 Human Behavior in the Social Environment III**

[3 credit hours]

This course provides a view of behavior of larger systems including groups, organizations, and communities through a strengths perspective, focusing on social and economic justice, and the values of the social work profession.

**Prerequisites:** SOCW 3210 with a minimum grade of C

**Term Offered:** Spring, Fall

**SOCW 3300 Social Policy And Legislation**

[3 credit hours]

An examination of current social welfare issues and theories and the significance to the social, economic and political factors which influence policymaking and implementation.

**Prerequisites:** PSC 1200 with a minimum grade of C

**Term Offered:** Summer, Fall

**SOCW 3410 Social Work Research Practicum I**

[3 credit hours]

Presentation of basic methods used in social work research. Practice based methods are emphasized. Course content will focus on scientific methods of building knowledge for evidence-based social work practice.

**Prerequisites:** SOCW 2010 with a minimum grade of C

**Term Offered:** Fall

**SOCW 3420 Social Work Research Practicum II**

[3 credit hours]

Develop student competency in use of statistical applications in applied social work research. Entails continuation and completion of community-based research project started in Research Practicum I.

**Prerequisites:** SOCW 3410 with a minimum grade of C

**Term Offered:** Spring

**SOCW 3510 Interpersonal Practice with Lesbian, Gay, Bisexual, Transgender and Queer Individuals**

[3 credit hours]

This course will provide an introduction and overview of sexual orientation and gender identity and expand understanding of how to implement affirmative models of practice with LGBTQ individuals, families and communities. Course content will include: perspectives on gender, identity formation, impact of homophobia, biphobia, and transphobia, affirming interventions with lesbian, gay, bisexual and transgendered persons, families, youth, communities and aging; and specific challenges facing the LGBT communities such as homelessness, domestic violence, bullying, and policy.

**Prerequisites:** SOCW 1030 with a minimum grade of D- and SOCW 2010 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**SOCW 3520 Human Animal Interaction, Health and Wellness**

[3 credit hours]

The majority of households in the United States have a companion animal. This course provides an overview of how human-animal interactions (HAI) and the human-animal bond (HAB) impact human health and well-being. Topics include: the social, physical and emotional/psychological impacts across the lifespan; therapeutic roles of animals; animal welfare and ethical considerations; and the connection between violence toward people and violence toward animals.

**Term Offered:** Spring, Summer, Fall

**SOCW 3530 Health Care Social Work Experiences with Interprofessional Teaming**

[1-3 credit hours]

Students will be introduced to the unique demands of health care social work (3 credits more content and more assignments). Students will utilize generalist skills developed in their BSW program to negotiate the interdisciplinary classroom by participating in real-world problem solving and simulations by joining students from across the University of Toledo campuses and the free clinic to learn how to be an integral part of health care with an emphasis on just service delivery.

**Term Offered:** Fall

**SOCW 4120 Social Work Practice II**

[3 credit hours]

Provides advanced theory and skill development as a generalist social worker with organizations and communities. Emphasis is on a strengths and empowerment perspective focused on social and economic justice.

**Prerequisites:** SOCW 3110 with a minimum grade of C and SOCW 3120 with a minimum grade of C

**Term Offered:** Fall

**SOCW 4130 Social Work Practice III**

[3 credit hours]

Provides advanced theory and skill development as a generalist social worker with individuals, families and groups. Emphasis is on a strengths and empowerment perspective focused on social and economic justice.

**Prerequisites:** SOCW 4120 with a minimum grade of C and SOCW 4200 with a minimum grade of C and SOCW 4220 with a minimum grade of C

**Term Offered:** Spring

**SOCW 4200 Field Laboratory II**

[1 credit hour]

Integration of field experience and proactive principles.

**Term Offered:** Fall

**SOCW 4210 Field Seminar III**

[1 credit hour]

Integration of field experience and proactive principles.

**Prerequisites:** SOCW 4120 with a minimum grade of C and SOCW 4200 with a minimum grade of C and SOCW 4220 with a minimum grade of C

**Term Offered:** Spring

**SOCW 4220 Social Work Field Experience II**

[5 credit hours]

A professional experience in generalist social work practice with an integration of classroom learning with practice in a social agency.

Must be taken in successive semesters during a single academic year.

Application for entry to field placement must be submitted to social work office during spring semester prior to fall placement.

**Term Offered:** Fall

**SOCW 4230 Field Experience III**

[5 credit hours]

A professional experience in generalist social work practice with an integration of classroom learning with practice in a social agency.

Must be taken in successive semesters during a single academic year.

Application for entry to field placement must be submitted to social work office during spring semester prior to fall placement.

**Prerequisites:** SOCW 4220 with a minimum grade of C and SOCW 4200 with a minimum grade of C and SOCW 4120 with a minimum grade of C

**Term Offered:** Spring

**SOCW 4500 Appreciating Diversity In Social Work Practice**

[3 credit hours]

This course focuses upon the cultural group strengths, needs, priorities and experiences of ethnic/racial groups in the U.S. through a social welfare perspective. Individual and institutional racism are examined.

**Prerequisites:** SOCW 2210 with a minimum grade of D-

**SOCW 4960 Honors Thesis**

[1-6 credit hours]

Senior standing and approval of the department honor adviser.

**Term Offered:** Spring, Summer, Fall

**SOCW 4980 Special Issues In Social Work**

[1-3 credit hours]

Courses on various social work specialties. May be repeated in different topics.

**Term Offered:** Spring, Summer, Fall

**SOCW 4990 Independent Study In Social Work**

[1-3 credit hours]

Designed for advanced students in social work to pursue supervised independent study in unlisted subject areas or to continue course work in greater depth. Written proposal required.

**Term Offered:** Spring, Summer, Fall

# SOCIOLOGY (SOC)

## SOC 1010 Introduction To Sociology

[3 credit hours]

(not for major credit) Sociological topics regarding social behavior, institutional dynamics and social change are examined, and the principles and basic concepts used by sociologists are taught.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## SOC 1020 Social Problems

[3 credit hours]

(Not for major credit) Introduces students to the sociological perspective through the analysis of various social problems including inequality, population, environment, workplace and deviant behavior.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Trans Mod Social Science

## SOC 2000 Proseminar In Sociology I

[1 credit hour]

Students are introduced to the academic and professional nature of Sociology. Topics covered include professional socialization, honor theses, portfolio construction, preparation for graduate studies, and career development.

**Term Offered:** Spring

## SOC 2150 The Family and Society

[3 credit hours]

Examines evolving family structures, focusing on the impact that cultural, political, and social factors have on private personal relationships and the public social institution of the family.

**Term Offered:** Spring, Fall

## SOC 2410 Communities - Writing Across the Curriculum

[3 credit hours]

Examination of various forms and definitions of community with special focus on what the conceptualization of community means for how community issues are identified and addressed.

**Term Offered:** Spring, Fall

Core Social Sciences

## SOC 2500 Women's Roles: A Global Perspective

[3 credit hours]

The course focuses on the current and evolving social, economic and political status of women in the United States and selected non-Western societies. For both men and women students.

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

## SOC 2640 Race, Class, And Gender

[3 credit hours]

Introduction to the study of race, class and gender as factors in American stratification.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

## SOC 2750 Sociology Of Sport

[3 credit hours]

This course examines sport as a microcosm of our society, exploring many sociological issues (socialization, social institutions, and inequality) within the framework of sport that exist in society as whole.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences

## SOC 2900 African American Culture

[3 credit hours]

A survey of the sociohistorical and cultural factors related to the African American experience in the United States.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

## SOC 2980 Special Topics

[3 credit hours]

Examination of a special topical area in sociology. May be repeated on different topics.

## SOC 3270 Social Research Methods

[3 credit hours]

Introduction to procedures used in the various phases of sociological research.

**Term Offered:** Spring, Fall

## SOC 3290 Social Statistics

[3 credit hours]

Study of major statistical procedures and techniques in sociology.

**Prerequisites:** MATH 1180 with a minimum grade of D- or MATH 1200 with a minimum grade of D- or MATH 1210 with a minimum grade of D- or MATH 1320 with a minimum grade of D- or MATH 1330 with a minimum grade of D- or MATH 1340 with a minimum grade of D- or MATH 1730 with a minimum grade of D- or MATH 1750 with a minimum grade of D- or MATH 1830 with a minimum grade of D- or MATH 1850 with a minimum grade of D- or MATH 2450 with a minimum grade of D- or MATH 2600 with a minimum grade of D- or MATH 2640 with a minimum grade of D-

**Term Offered:** Spring, Fall

## SOC 3640 Social Inequality

[3 credit hours]

This course examines the bases, varieties and consequences of systems of inequality, including the development of and changes in inequality patterns in the US and other societies.

**Term Offered:** Spring, Summer, Fall

## SOC 3800 Social Psychology

[3 credit hours]

An introduction to theory and research concerning social influences on the experience and behavior of individuals. Includes interaction patterns, interpersonal and intergroup relations.

**Term Offered:** Spring, Summer, Fall

## SOC 3890 Ecotourism: Studies of the Africana World

[3 credit hours]

Introduce students to the field of ecotourism studies and specific challenges of community development and sustainability. The course covers ecotourism in the Africana world of Africa, the Caribbean, and Latin America.

**Term Offered:** Spring, Fall

**SOC 4000 Proseminar In Sociology II**

[2 credit hours]

Discussion among faculty and students devoted to the study of Sociology with a special focus on the development of a professional portfolio for graduate work or career.

**Prerequisites:** SOC 2000 with a minimum grade of D-

**Term Offered:** Spring

**SOC 4040 Classical Theory**

[3 credit hours]

Foundations of social theory including works by Marx, Weber, Durkheim and Simmel as well as other classical theorists.

**Term Offered:** Spring, Fall

**SOC 4100 Community Organizing and Development**

[3 credit hours]

This course focuses on attempt of communities to regain power and wealth lost through urban disinvestment occurring since World War II. The course will involve numerous practical workshops to learn how to do community organizing and community development and will include information on Toledo case studies.

**Term Offered:** Spring, Fall

**SOC 4110 Political Sociology**

[3 credit hours]

Examination of political institutions, organizations and behavior with special attention to participation, power, ideology, decision making and conflict.

**SOC 4160 Health And Gender**

[3 credit hours]

An examination of sex and gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals.

**Term Offered:** Summer, Fall

**SOC 4170 Law And Society**

[3 credit hours]

Dynamics of law and legal institutions; the relationship of sociocultural changes in substantive and procedural aspects of law to the concept of justice, and to the social control of deviance.

**SOC 4180 Medical Sociology**

[3 credit hours]

An analysis of the sociocultural factors in health and illness, and in medical and paramedical services, and in the field of health practice as a social institution.

**Term Offered:** Spring, Fall

**SOC 4190 Social Gerontology**

[3 credit hours]

A study of the changing proportions of older people in the population, their changing roles and statuses, and the problems and processes of adjustment.

**SOC 4340 Population And Society**

[3 credit hours]

Examination of the interaction among variables of population (fertility, mortality and migration) and other aspects of societal organization.

**Term Offered:** Fall

**SOC 4440 Methods Of Population Analysis**

[3 credit hours]

Methods of population analysis, including examination and evaluation of data sources.

**SOC 4450 Exploring the City**

[3 credit hours]

Examination of how cities are organized with special attention to economic, political, racial/ethnic, and sex/gender dynamics.

**Term Offered:** Fall

**SOC 4530 Qualitative Approaches in Social Science Research**

[3 credit hours]

This course examines qualitative methods used in social science research. Focusing on ethnographic and qualitative methods, the course provides students the skills necessary to design and conduct qualitative research studies.

**SOC 4560 Fieldwork in the Community**

[6 credit hours]

This course involves the student in meaningful social research at the community level. The student is introduced to methods in fieldwork in the social sciences.

**Term Offered:** Spring, Summer, Fall

**SOC 4580 Science, Technology, And Social Change**

[3 credit hours]

The impact of rapidly changing science and technology on North American society: social change in a technological age; the emergence of post industrial society.

**SOC 4610 Sociology Of Organizations**

[3 credit hours]

Study of the structures, functions, and processes of various types of organizations. Topics include bureaucracy, organizational leadership and management, and organizational culture.

**Term Offered:** Spring

**SOC 4650 SOCIOLOGY OF LATIN AMERICA AND CARIBBEAN**

[3 credit hours]

An overview of sociological literature on Latin American and the Caribbean. Topics include economic development, political change, gender and ethnicity, disability, culture and international migration.

**Prerequisites:** SOC 1010 with a minimum grade of D-

**SOC 4710 Criminology**

[3 credit hours]

Crime and criminal behavior: nature, types and extent of crime, societal reactions; problems in research and theory, prevention, control and treatment.

**Term Offered:** Summer

**SOC 4720 Deviant Behavior**

[3 credit hours]

Study and analysis of the nature, meaning and process of deviant behavior in terms of social norms, control and societal reaction.

**Term Offered:** Summer

**SOC 4740 Issues In Crime**

[3 credit hours]

Topics may include legalizing drugs, police violence, plea bargaining, death sentence and mandatory sentencing. Emphasizes liberal/conservative ideology.

**SOC 4750 Legal Issues**

[3 credit hours]

Topics may include abortion, three strike sentencing, homosexual rights, hate speech and decriminalizing narcotics. Emphasizes liberal/conservative ideology.

**SOC 4760 Juvenile Delinquency**

[3 credit hours]

Delinquency and delinquent behavior, including definitions, extent, process, types and causes; methods of prevention, protective control and treatment; institutional and non-institutional facilities and services.

**SOC 4800 Social Change in Developing Nations**

[3 credit hours]

The new emerging ideological, political, social and economic patterns which repeat themselves in and determine the Third World transition from a traditional to a new society.

**Term Offered:** Fall

Multicultural Non-US Diversity

**SOC 4810 Gender In Cross-Cultural Perspective**

[3 credit hours]

Analysis of gender stratification and its impact on culture in various nations and across ethnic groups in the United States.

Multicultural Non-US Diversity

**SOC 4830 Social Movements**

[3 credit hours]

This course analyzes how and why social protest movements form, and how and why they succeed or fail. Attention will be given to post-World War II social movements, including current examples.

**Term Offered:** Spring, Fall**SOC 4840 Globalization**

[3 credit hours]

This course takes an interdisciplinary approach to studying globalization – increased integration and interdependence between nations. We will start by looking at the historical context of globalization, showing this process is not necessarily something new. From there we will focus on four dimensions of globalization: economic, political, demographic, and cultural. We also will stress the interconnectedness of these dimensions. We conclude by looking at reactions and resistance to globalization, including terrorism and nationalism.

**Term Offered:** Spring**SOC 4910 Directed Research In Sociology**

[1-3 credit hours]

Student-selected research topic under the supervision of a sociology faculty member. Permission to enroll is contingent on the instructor's acceptance of the student's research proposal.

**Prerequisites:** SOC 3270 with a minimum grade of D-**SOC 4920 Directed Readings In Sociology**

[1-3 credit hours]

Written proposal required. May be repeated for additional credit. For majors wishing to continue course work in greater depth or seeking contact with unlisted subject areas.

**Term Offered:** Spring, Fall**SOC 4940 Internship in Sociology**

[3 credit hours]

**SOC 4960 Honors Thesis**

[3-6 credit hours]

**SOC 4980 Special Topics In Sociology**

[3 credit hours]

Sociological examination of a developing and/or important social issue or sociological topic. May be repeated for different specialized topics.

**Term Offered:** Spring, Summer, Fall**SOC 4990 Independent Study-Sociology**

[1-3 credit hours]



# SPANISH (SPAN)

## SPAN 1010 Spanish for Health Care Professionals

[3 credit hours]

Introductory presentation of the vocabulary, grammar, and customs of the Spanish-speaking world as they relate to the field of health care.

**Term Offered:** Spring

## SPAN 1080 Culture & Commerce In The Spanish-Speaking World

[3 credit hours]

A study of the Hispanic world with emphasis on the relationship between its culture and business and economic institutions and practices. Taught in English. (Not for major credit)

**Term Offered:** Spring, Fall

Core Arts & Humanities

## SPAN 1090 Culture Of Latin America

[3 credit hours]

A study of selected artistic, literary, philosophical, political and social aspects of present day Latin American culture. Taught in English. (Not for major credit)

**Term Offered:** Spring, Fall

Core Arts & Humanities, Multicultural Non-US Diversity

## SPAN 1100 Culture Of Spain

[3 credit hours]

A study of the events, people and movements that have formed Spain. Taught in English. (Not for major credit)

**Term Offered:** Fall

Core Arts & Humanities

## SPAN 1110 Elementary Spanish I

[4 credit hours]

Practice in using and understanding Spanish to develop listening, speaking, reading and writing skills. Pronunciation, grammar, vocabulary and cultural topics. Lab practice required. (Not for major credit)

**Term Offered:** Spring, Summer, Fall

## SPAN 1120 Elementary Spanish II

[4 credit hours]

A comprehensive introductory course in Spanish language and culture through the four basic skills: aural comprehension, reading, speaking and writing. Laboratory practice required. (Not for major credit)

**Prerequisites:** SPAN 1110 with a minimum grade of D- or Spanish Language Placement with a score of 1120

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## SPAN 1500 Review Of Elementary Spanish

[4 credit hours]

Review of first-year college Spanish for students who studied the language in high school and who need to strengthen communication skills, vocabulary, grammar and pronunciation before study at the 2000 level. (Not for major credit)

**Term Offered:** Spring, Fall

Core Arts & Humanities

## SPAN 2140 Intermediate Spanish I

[3 credit hours]

Intermediate-level review and development of aural comprehension, speaking, reading and writing skills. Topics in the cultures of the Spanish-speaking world. Lab practice required. (Not for major credit)

**Prerequisites:** SPAN 1120 with a minimum grade of D- or SPAN 1500 with a minimum grade of D- or Spanish Language Placement with a score of 2140

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## SPAN 2150 Intermediate Spanish II

[3 credit hours]

Further review and development of aural comprehension, speaking, reading and writing skills. Topics in the cultures of the Spanish-speaking world. Lab practice required. (Not for major credit)

**Prerequisites:** SPAN 2140 with a minimum grade of D- or Spanish Language Placement with a score of 2150

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities

## SPAN 2190 Study Abroad

[1-3 credit hours]

Designed to permit and encourage non-majors to spend time in a country where Spanish is spoken. Credit will be given in accordance with established departmental procedures. (Not for major credit.)

**Term Offered:** Summer

## SPAN 2980 Special Topics in Spanish Studies

[0-6 credit hours]

Study of a selected topic in Spanish language, literature or culture. May be repeated when topic varies.

**Term Offered:** Spring

## SPAN 3000 Spanish Grammar

[3 credit hours]

A study of all Spanish grammatical aspects with special emphasis on those which present greater difficulty for the English speaker.

**Prerequisites:** SPAN 2150 with a minimum grade of D- or Spanish Language Placement with a score of 3000

**Term Offered:** Spring, Fall

## SPAN 3010 Conversation And Composition I

[3 credit hours]

Practice in speaking, listening, reading and writing. Vocabulary and fluency building in Spanish with special emphasis on oral practice.

**Prerequisites:** SPAN 2150 with a minimum grade of D- or Spanish Language Placement with a score of 3000

**Term Offered:** Spring, Fall

## SPAN 3020 Conversation And Composition II

[3 credit hours]

Practice in speaking, listening, reading and writing. Vocabulary and fluency building in Spanish with special emphasis on writing practice. A writing-intensive course.

**Prerequisites:** SPAN 2150 with a minimum grade of D- or Spanish Language Placement with a score of 3000

**Term Offered:** Spring, Fall

**SPAN 3170 Business Spanish**

[3 credit hours]

An introduction to the language of the Hispanic world peculiar to the areas of business and commerce.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 3210 Survey Of Spanish Literature I**

[3 credit hours]

A survey of Spanish literature from its origins through the seventeenth century.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 3220 Survey Of Spanish Literature II**

[3 credit hours]

A survey of Spanish literature from the eighteenth century to the present.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3270 Survey Of Latin American Literature I**

[3 credit hours]

The literature of Latin America from the Colonial period to the end of the nineteenth century.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 3280 Survey Of Latin American Literature II**

[3 credit hours]

The literature of Latin America from the beginning of the twentieth century to the present.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3410 Spanish Culture And Civilization**

[3 credit hours]

A study of the events, people and movements that have formed Spain. Attention is also given to the nation's contemporary life-style and culture.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3420 Latin American Civilization**

[3 credit hours]

A study of Latin America's contributions to world culture in such fields as architecture, painting, sculpture, music, literature, folklore, sciences, philosophy and education.

**Prerequisites:** SPAN 2150 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 3980 Special Topics in Spanish Studies**

[0-6 credit hours]

Study of a selected topic within Spanish studies. May be repeated for credit when topic varies.

**SPAN 4000 Advanced Spanish Grammar**

[3 credit hours]

An advanced study of Spanish grammar in preparation for higher levels of study in the language and for its use in professional pursuits.

**Term Offered:** Spring, Fall

**SPAN 4010 Syntax And Stylistics**

[4 credit hours]

A thorough study of the grammatical structure of Spanish with special attention to stylistic problems.

**Prerequisites:** (SPAN 3000 with a minimum grade of D- and SPAN 3010 with a minimum grade of D- and SPAN 3020 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**SPAN 4060 Translation & Interpretation In Spanish**

[3 credit hours]

A study of the techniques of translation and interpretation as they relate to English and Spanish based on a contrastive analysis of the two languages, both in theory and practice.

**Prerequisites:** SPAN 4010 with a minimum grade of D-

**Term Offered:** Spring

**SPAN 4070 History Of The Spanish Language**

[3 credit hours]

A study of the development of the Spanish language from Vulgar Latin to the present, illustrated with selected texts.

**Term Offered:** Spring

**SPAN 4110 Introduction To Spanish Linguistics**

[4 credit hours]

Basic concepts of linguistics as applied to the study of the Spanish language and its dialectal systems. Emphasis on phonetics, phonology, morphology, syntax and semantics.

**Term Offered:** Spring, Fall

**SPAN 4120 Teaching Colloquium**

[3 credit hours]

A course in the theory and practice of teaching Spanish and of second language acquisition in general.

**Term Offered:** Fall

**SPAN 4170 Latin American Novel II**

[3 credit hours]

A study of the major developments in Latin American novel from the Boom to the present.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**SPAN 4190 Study Abroad**

[1-12 credit hours]

The course permits the Spanish major or minor to spend time in a country where Spanish is spoken. Credit awarded in accordance with established departmental procedures.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

**SPAN 4250 Latin American Short Story**

[3 credit hours]

Development of the Latin American short story from its origins with special emphasis on the contemporary authors such as Allende, Borges, Cortazar, Garcia Marquez and Rulfo among others.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**Term Offered:** Fall

**SPAN 4260 Latin American Poetry I**

[3 credit hours]

The poetry of Latin America from Sor Juana Ines de la Cruz to Ruben Dario.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**SPAN 4270 Latin American Poetry II**

[3 credit hours]

Latin American poetry from Surrealism to the present, with emphasis on authors such as Borges, Huidobro, Neruda, Paz and Vallejo.

**Prerequisites:** SPAN 3020 with a minimum grade of D-

**SPAN 4370 Advanced Business Spanish**

[3 credit hours]

Advanced study of the business language, cultural attitudes and current business climate of the societies that comprise the Spanish-speaking world.

**Prerequisites:** SPAN 3170 with a minimum grade of D-

**SPAN 4820 Modern Spanish Drama**

[3 credit hours]

Critical readings of Spanish drama from Romanticism to the latest contemporary trends.

**SPAN 4830 Hispanic Cinema**

[3 credit hours]

Critical viewings of Spanish-language films from Spain and the Americas. Emphasis on cultural criticism.

**Term Offered:** Spring

**SPAN 4910 Honors Research In Spanish**

[3 credit hours]

Independent research in special topics. May be repeated once for credit.

**SPAN 4940 Internship in Spanish**

[0-12 credit hours]

Educational work experience, using Spanish, in a pre-approved professional field.

**Term Offered:** Spring, Fall

**SPAN 4980 Special Topics**

[3 credit hours]

Study and research in specific areas or authors with considerable reading of Spanish texts plus written reports in Spanish.

**Term Offered:** Spring, Fall

# SPECIAL EDUCATION (SPED)

## SPED 2010 Practicum In Special Education

[3 credit hours]

Lecture and fieldwork, consisting of a minimum of 15 clock hours as assistant in each of two placements for persons with disabilities (total of 30 hours)

## SPED 2040 Perspectives In The Field Of Exceptionalities

[3 credit hours]

Synthesis of the cross-categorical components required of special education. Issues addressed: causes and characteristics for disabling conditions and issues related to persons with disabilities, i.e., identification, intervention strategies, educational settings. Role of professionals in the field of special education.

**Term Offered:** Spring, Summer, Fall

## SPED 2900 Early Seminar Special Education

[1-5 credit hours]

Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of Special Education will be the focus.

## SPED 2910 Cultural Diversity And Disabilities

[1 credit hour]

This is a linking seminar with the urban studies or public administration dual majors. The purpose is to integrate the two majors. Students will learn the relation of cultural diversity and special education. Theoretical as well as pragmatic positions will be discussed.

## SPED 2990 Independent Study In Special Education

[1-5 credit hours]

Designed to provide the student with the opportunity to explore special interests through individual study.

## SPED 3130 Linguistic Analysis

[3 credit hours]

Identification and evaluation of language usage. Course focuses upon development of competence for the analysis of semantic and syntactic components of language. Some pragmatic analysis is included. Lab required.

**Term Offered:** Spring, Fall

## SPED 3350 Child, Family, Public Policy

[3 credit hours]

## SPED 3380 Field Experience: Specialized Childhood Dimensions of Education

[2 credit hours]

## SPED 3670 American Sign Language I

[3 credit hours]

Principles of manual communication. Course builds an expressive and receptive vocabulary of at least 1,000 signs in American Sign Language (ASL) and Pidgin Signed English. Ten hours of lab required.

**Term Offered:** Summer, Fall

## SPED 3680 American Sign Language II And Basics Of Interpreting

[3 credit hours]

Emphasis on fluency development in manual communication. Study of various models of interpreting and transliterating processes.

**Prerequisites:** SPED 3670 with a minimum grade of D-

**Term Offered:** Spring, Summer

## SPED 3690 American Sign Language III

[4 credit hours]

American Sign Language III is designed to continue the development of proficiency in using the language and understanding the culture of the Deaf. Student will gain knowledge and skill in applying approximately 900 additional vocabulary words. Students will advance in the complexity of sentence structure and grammatical structures including classifiers, specifier, verb modulations and aspects, special referencing, pluralizations and the importance of facial expressions.

**Prerequisites:** SPED 3680 with a minimum grade of D-

**Term Offered:** Summer, Fall

## SPED 3700 American Sign Language IV

[4 credit hours]

American Sign Language IV is designed to continue the development of proficiency in using the language and understanding the culture of the Deaf. Student will gain knowledge and skill in applying approximately 900 additional vocabulary words.

**Prerequisites:** (SPED 3670 with a minimum grade of C and SPED 3680 with a minimum grade of C and SPED 3690 with a minimum grade of C)

**Term Offered:** Spring, Summer

## SPED 3850 Braille I

[3 credit hours]

Basic course in both reading and writing literary Braille; practical application of this medium to teaching.

## SPED 3860 Braille II And Other Media For The Blind And Visually Impaired

[3 credit hours]

Covered in this course will be reading and writing and advanced literary Braille, nemeth code and other nee

## SPED 4010 Atypical Development In Early Childhood: Implications For Development

[3 credit hours]

Factors that contribute to atypical development in early childhood, appropriate intervention models and implications of delay on young children's development.

## SPED 4030 Educating Students With Disabilities In The Middle Grades

[3 credit hours]

Focus on the teacher's role in middle age grade classrooms in the development and modification of environment curriculum and instruction to enable students with disabilities to be educated within an inclusive educational environment. Course must be taken concurrently with CI 4200.

**Prerequisites:** Upper Division with a score of 1

## SPED 4060 Specialized Intervention In Infancy And Early Childhood

[3 credit hours]

Atypical infant, toddler and early childhood development examined. Intervention strategies in home, school and specialized environments, which are family-centered and developmentally appropriate, will be addressed. Forty (40) clock hour practicum required.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Fall

**SPED 4070 Curriculum Models and Intervention Strategies in Early Childhood Special Education**

[3 credit hours]

Atypical infant, toddler and early childhood development will be examined. Specialized intervention techniques, their research and practice base and appropriate curriculum models will be explored.

**Prerequisites:** CIEC 3200 with a minimum grade of D-

**SPED 4080 Curriculum Adaptations & Strategies In Early Childhood Education**

[3 credit hours]

Curriculum models and intervention strategies which facilitate the cognitive, academic, social, language, self-help and lay skills of children with disabilities in preschool and primary grades will be examined.

**Prerequisites:** Upper Division with a score of 1 and CIEC 3200 with a minimum grade of D- and CIEC 4340 with a minimum grade of D-

**Term Offered:** Spring, Fall

**SPED 4100 Field Practicum With Students With Mild/Moderate Educational Needs**

[3-4 credit hours]

This course must be taken with SPED 4110 or SPED 4370. The purpose is to implement strategies and techniques for teaching students with mild and moderate educational needs. Students will have the opportunity to work in educational settings with experienced teachers. One hundred twenty hours of required field.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4110 Curriculum And Methodology For Students With Moderate Educational Needs**

[3 credit hours]

This course focuses on community-referenced functional curricula approaches to teaching students with moderate educational needs. Topics include inclusionary activities, community-based instruction, social skills.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4120 Curriculum And Methodology For Students With Intensive Educational Needs**

[3 credit hours]

Examination of appropriate curriculum models, instructional strategies and adaptations, and related behavior problems for students with intensive educational needs. A transdisciplinary team approach is explored.

**Prerequisites:** SPED 4110 with a minimum grade of D- and SPED 4240 with a minimum grade of D-

**Corequisites:** SPED 4100

**Term Offered:** Spring

**SPED 4170 Working With Adults With Disabilities In Community Setting**

[3 credit hours]

An in-depth study of strategies for linking youth and adults with disabilities to avenues leading to productive and fulfilling employment and community living. Special emphasis will be on supported/customized employment and the development of successful business partnerships to create jobs and careers for youth and adults with disabilities.

**Term Offered:** Fall

**SPED 4210 AAC for Young Children with Disabilities**

[3 credit hours]

This course will provide an overview of alternative or augmentative modes of communication for children who are unable to meet their daily communication needs through natural modes such as speech, gestures or handwriting.

**Prerequisites:** CIEC 3200 with a minimum grade of D-

**Term Offered:** Summer

**SPED 4220 Diagnostic And Prescriptive Teaching Students With Disabilities**

[4 credit hours]

Exploration of the development of visual, auditory and tactile-kinesthetic learning modalities and implications for social and academic learning with curricular consideration for math and language arts. Field experience required.

**SPED 4230 Field Practicum For Diagnostic And Prescriptive Teaching**

[2 credit hours]

Provides opportunities for field experience to use and refine the teaching of basic skills presented in SPED 4220. Eighty hours of field required. Must be taken concurrently with SPED 4220.

**SPED 4240 Teaching Phonics, Contextual Reading And Writing To Learners With Special Needs**

[3 credit hours]

Methods for teaching reading and writing to diverse learners. Emphasis on individualized and small-group approach using structured, explicit phonics in a balanced literacy program.

**Corequisites:** SPED 4100

**Term Offered:** Summer, Fall

**SPED 4250 Teaching Career And Vocational Skills To Youths With Disabilities**

[3 credit hours]

This course is designed to teach the prospective teacher the necessary skills to enhance transition from school to adult life for students with special needs. The course will cover several issues in the area of transition, including best practices, interagency collaboration, as well as application in developing a transition plan and summary of performance for young adults with disabilities.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Fall

**SPED 4260 Family And Professional Partnership In Special Education**

[3 credit hours]

Effective parent and professional partnerships will be explored. Interpersonal communication skills, legal issues, effective models for home-school communication, and differences in culture, values and family expectations will be discussed.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Summer, Fall

**SPED 4270 Team Models and Community Networking**

[3 credit hours]

This course will focus on the skills, knowledge and ethical practices essential to the provision of effective service coordination and teaming for early intervention and early childhood special education.

**Prerequisites:** CIEC 3200 with a minimum grade of D-

**Term Offered:** Spring



**SPED 4310 Learning And Behavior Problems Of Children**

[4 credit hours]

The purpose of this course is to present causes and characteristics of learning and behavioral problems. Emphasis of course: (a) theoretical models and considerations, (b) techniques of instruction and (3) the IEP.

**SPED 4320 Field Practicum For Learning And Behavior Problems**

[1 credit hour]

Provides opportunities to use, refine and implement strategies for working with persons with specific learning disabilities presented in SPED 4310. Forty hours of field required. Taken concurrently with SPED 4310.

**SPED 4330 Child Study Institute: Ebd**

[1 credit hour]

Provides educational settings for preservice teachers to practice effective behavioral/academic managing of children and youth experiencing emotional stress/trauma. Thirty hours of field required.

**SPED 4340 Effective Management Of Students With Special Needs In Educational Settings**

[3 credit hours]

Techniques for managing student behavior. Topics include analyzing environments and problems, implementing and evaluating interventions, data collection and analysis, and handling aggression and noncompliance. Case-backed approach. Integrated field component required.

**Prerequisites:** Upper Division with a score of 1 and SPED 4110 with a minimum grade of D- and SPED 4240 with a minimum grade of D-

**Corequisites:** SPED 4100

**Term Offered:** Spring

**SPED 4350 Advanced Methods In Learning Disabilities**

[3 credit hours]

An in-depth study of instructional methods and strategies for persons with learning disabilities. The focus will be on organization, study skills and self-advocacy strategies.

**SPED 4360 Clinical Practice In Specific Learning Disabilities**

[1 credit hour]

Provides students with supervised practice in developing and implementing learning strategies and study skills for persons with learning problems. Required 15 hours instructional practice with weekly meetings with supervisors/instructors.

**SPED 4370 Curriculum And Methods For Students With Mild Educational Needs**

[3 credit hours]

Study of causes and characteristics of mild disorders. Discussion will be on theoretical considerations as well as intervention approaches pertinent to the school and clinic setting. Taken concurrently with SPED 4100 and SPED 4110.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring

**SPED 4450 Methods of Teaching Students With Emotional Disturbance**

[3 credit hours]

This course provides evaluation and application techniques of research-based methodologies for teaching students with emotional disturbance in school-based settings within the least restrictive environment.

**Prerequisites:** SPED 4340 with a minimum grade of D-

**Term Offered:** Fall

**SPED 4480 Integrated Field Experience: Best Practice**

[5 credit hours]

**SPED 4510 Instruction Of Students With Physical And Other Health Impairments**

[3 credit hours]

Appropriate curriculum models, learning objectives and teaching strategies for students with physical or health impairing conditions are examined. Modification of materials, assessment options and alternative response modes will be discussed.

**SPED 4600 Professional Reflective Seminar**

[3 credit hours]

This seminar is taken concurrently with student teaching/internship. Students will evaluate their behavior in relation to the classroom environment. The students will develop alternative strategies in the educational setting.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4620 Linguistic Diversity Issues In Speech-Language Pathology**

[1 credit hour]

Explores the relationship of disorders of communication with the concept of community language as it impacts language development in children.

**SPED 4630 Collaboration For The Speech-Language Pathologist**

[1 credit hour]

Develops an understanding of the roles and expertise of the professionals; enhances skills which benefit the communicatively disordered client by contributing to diagnostic and intervention terms.

**Prerequisites:** Upper Division with a score of 1

**SPED 4700 Meet Needs Young Children Disabilities**

[9 credit hours]

This 9 semester-hour course is required for the "Fast-Track" non-licensure program in Early Childhood Education and focuses on knowledge and skills that general early childhood teachers must have to work with young children between the ages of birth to 5 years who have disabilities.

**Prerequisites:** CIEC 4600 with a minimum grade of D- and CIEC 4610 with a minimum grade of D-

**Corequisites:** SPED 4710

**Term Offered:** Spring

**SPED 4710 Field Meet Needs Young Children Disabilities**

[7 credit hours]

Students complete 280 clock hours of field experience in their ECE setting that focuses on their ability to design, manage and evaluate learning environments and activities for young children with special needs (infants, toddlers, or preschoolers). This field experience is part of the non-licensure "Fast-Track" ECE program.

**Prerequisites:** CIEC 4600 with a minimum grade of D- and CIEC 4610 with a minimum grade of D-

**Corequisites:** SPED 4700

**Term Offered:** Spring

**SPED 4800 Introduction to Vision Impairment and Blindness**

[3 credit hours]

This course covers the anatomy and physiology of the eye, visual impairments and their implication for learning, working and independent living, as well as general issues and concepts related to blindness, the blind and the visually impaired.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D- and Upper Division with a score of 1

**SPED 4810 Implications Of Low Vision**

[3 credit hours]

This course covers low vision conditions as well as instruction of persons with low vision. Advantages and disadvantages of specialized equipment are discussed alongside strategies for instruction. Rehearsal with the equipment is required.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D-

**Term Offered:** Summer

**SPED 4820 Introduction to Research in Vision**

[3-5 credit hours]

Exposes undergraduate vision students to basic research skills and enables them to conduct research in areas of interests.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D-

**SPED 4830 Assessment in Vision**

[3-5 credit hours]

Covers general assessment in special education but emphasizes assessment vision. This emphasis allows students to critique and administer vision assessment tools.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D-

**SPED 4870 Education Of The Blind And Visually Impaired**

[3 credit hours]

The course focuses on methods of instruction of the blind and visually impaired in different settings; cultural diversity, instruction of the blind with additional disabilities, and various types of assessments and methodologies for curriculum adaptation are addressed.

**Prerequisites:** SPED 2910 with a minimum grade of D- and SPED 2040 with a minimum grade of D-

**SPED 4880 Independence Skills and Technologies for the Blind and Visually Impaired**

[3 credit hours]

This course focuses on the general independence of persons who are blind or visually impaired. Covered are skills and strategies for independent living, adaptive technology, and orientation and mobility skills for the blind and visually impaired.

**Prerequisites:** SPED 2040 with a minimum grade of D- and SPED 2910 with a minimum grade of D- and Upper Division with a score of 1

**Term Offered:** Summer

**SPED 4900 Seminar In Special Education**

[1-5 credit hours]

Seminar provides students with the opportunity to explore, as a group, specific topics with a faculty member. Current issues in the area of Special Education will be the focus.

**Term Offered:** Spring, Summer, Fall

**SPED 4910 Directed Research In Special Education**

[1-5 credit hours]

Directed research provides students the opportunity to explore specific topics and develop individual research with a faculty member. Current questions in the area of Special Education will be the focus.

**SPED 4920 Readings In Special Education**

[1-5 credit hours]

Individual Readings is designed to provide students with opportunities to examine literature related to specific issues. The student works under the direction of staff in the Department of Special Education Services.

**SPED 4930 Student Teaching In Special Education**

[4-12 credit hours]

Planned field experience in public school classrooms under the direction of University supervisors. Full responsibility for the classroom is expected by the end of the student teaching experience.

**Prerequisites:** Upper Division with a score of 1

**Term Offered:** Spring, Fall

**SPED 4940 Internship/Externship In Special Education**

[4-12 credit hours]

Provides advanced undergraduate students with supervised practicum experiences at off-campus site, including schools, hospitals, rehabilitation clinics, work training sites and other community sites where persons with disabilities are served.

**Prerequisites:** Upper Division with a score of 1

**SPED 4980 Special Topics In Special Education**

[1-5 credit hours]

An advanced course for undergraduate majors in special education or majors in related fields covering an important area of special education. Student may repeat this course under different section numbers.

**Term Offered:** Spring, Summer, Fall

**SPED 4990 Independent Study - Special Education**

[1-5 credit hours]

Individual study provides students with opportunities to work individually on issues under the direction of department of Special Education Services faculty. The student meets with instructor without formal classes.

**Term Offered:** Spring, Summer, Fall

# SPEECH LANGUAGE PATHOLOGY (SLP)

## SLP 2400 Communication Disorders

[3 credit hours]

A study of causative factors and characteristics of communicative disorders in comparison to normal speech/language/hearing processes.

**Term Offered:** Spring, Fall

## SLP 3010 Clinical Phonetics

[0-4 credit hours]

Understanding of articulatory and acoustic phonetics with emphasis on the development of transcription skills using the International Phonetic Alphabet in recording normal and disordered speech production. Laboratory required for transcription skill development.

**Term Offered:** Spring, Fall

## SLP 3020 Anatomy And Physiology Of Communication Mechanisms

[0-4 credit hours]

The study of the anatomy and physiology of the mechanisms used for communication including oral-pharyngeal-esophageal, respiratory, and neurological systems.

**Term Offered:** Spring, Fall

## SLP 3030 Normal Language Acquisition

[0-4 credit hours]

Presents basic theories of language acquisition and procedures to describe the developmental sequence of childhood language. Procedures and techniques for analyzing childhood language are introduced and practiced in laboratory experiences.

**Term Offered:** Spring, Fall

## SLP 3150 Speech and Hearing Science

[0-4 credit hours]

A detailed exploration of the speech and language production system, as well as the hearing mechanism with relation to the auditory environment. Information on aerodynamic and acoustic parameters of speech, the anatomy and physiology of the speech and hearing mechanisms, the neural basis of speech/language/hearing, and the speech perception system is provided during this course. The course is designed with lab experiences so students can get hands-on practice.

**Term Offered:** Spring, Fall

## SLP 3200 Articulation/Phonological Disorders

[0-4 credit hours]

Assessment techniques and intervention strategies for persons with disorders of the sound system of the language. Theories of phonological acquisition and etiological factors will be discussed during this course. Laboratory experience required.

**Prerequisites:** SLP 3010 with a minimum grade of D- and SLP 3020 with a minimum grade of D-

**Term Offered:** Spring, Fall

## SLP 3300 Language Disorders

[0-4 credit hours]

Course includes the identification of etiologic bases and characteristics of language disorders. Assessment strategies leading to choice of intervention techniques will be discussed. Laboratory experience required.

**Prerequisites:** SLP 3030 with a minimum grade of C

**Term Offered:** Spring, Fall

## SLP 3400 Clinical Audiology

[3 credit hours]

The student learns to administer and interpret the comprehensive auditory battery consisting of pure-tone air conduction and bone conduction thresholds, speech reception thresholds, speech discrimination tests and acoustic emittance test battery.

**Term Offered:** Spring, Fall

## SLP 3800 Methods For Clinical Intervention

[3 credit hours]

Teaches methods of intervention of speech, language and hearing services in various settings. Emphasis on developing skills in observation, report writing, and structuring intervention services and their implementation. Requires 25 hours of observation. Mandatory clinic meeting, and one hour lab duty. Laboratory experience required.

**Prerequisites:** (SLP 3200 with a minimum grade of B- and SLP 3300 with a minimum grade of B-)

**Term Offered:** Spring, Fall

## SLP 4000 Beginning Clinical Practicum

[2 credit hours]

Supervised participation in structured individual or group intervention leading to the accumulation of 25 clinical hours of practicum.

**Prerequisites:** SLP 3800 with a minimum grade of B-

**Term Offered:** Spring, Summer, Fall

## SLP 4350 Concomitant Disorders

[3 credit hours]

This capstone course explores literature in advanced speech and language disorders as well as intervention communication disorders.

**Term Offered:** Spring

## SLP 4440 Augmentative Communication Systems

[3 credit hours]

Technological systems available for persons with the absence of functional speech will be described. Etiological factors, assessment and intervention procedures and hands-on experience with devices will be provided.

**Term Offered:** Spring, Fall

## SLP 4910 Directed Research In Speech-Language Pathology

[1-5 credit hours]

Directed research provides students the opportunity to explore specific topics and develop individual research with a faculty member. Current questions in the area of speech-language pathology will be the focus.

**Term Offered:** Spring, Fall

## SLP 4920 Readings In Speech-Language Pathology

[1-5 credit hours]

Individual Readings is designed to provide students with opportunities to examine literature related to specific issues. The student works under the direction of faculty in the speech-language pathology program.

**SLP 4980 Special Topics In Speech-Language Pathology**

[1-5 credit hours]

An advanced course for undergraduate majors in speech-language pathology or majors in related fields covering an important area of communication disorders. Student may repeat this course under different section numbers.

**Term Offered:** Spring, Fall

**SLP 4990 Independent Study Speech-Language Pathology**

[1-5 credit hours]

Independent study provides students with opportunities to work individually on issues under the direction of the speech-language pathology program faculty. The student meets with instructor without formal classes.

**Term Offered:** Spring, Summer, Fall

# THEATRE (THR)

## THR 1010 Acting for Non Majors

[3 credit hours]

Learn the fundamentals of acting through exercises, devised playmaking and scene study. Through active class participation, the student discovers an understanding of the basic artistic process of the performer and how that process may lead to self-realization and heightened awareness.

**Term Offered:** Spring, Fall

## THR 1030 Stagecraft and Theatre Technology

[3 credit hours]

[3 hours] Introduction to theatre technology using the tools and practices utilized in set construction, properties scene painting and scene design. Lectures, readings and projects with practical laboratory experience.

**Term Offered:** Spring, Fall

## THR 1040 Stage Lighting and Sound Technology

[3 credit hours]

Introduction to theory and practice in stage lighting and sound. Students will use lighting and sound tools and equipment in production crews on department productions.

**Term Offered:** Spring, Fall

## THR 1050 Costume Technology

[3 credit hours]

Introduction to the theory and practice of stage costuming. Lectures, readings and projects offer practical laboratory experiences. Students will use tools and equipment of the costume shop on production crews.

**Term Offered:** Spring, Fall

## THR 1100 Introduction To Theatre

[3 credit hours]

Introductory survey of the development of theatre and drama from the ancient world to the present day; discussion of representative plays; slides and films complement lectures. (Not recommended or required for majors.)

**Term Offered:** Spring, Summer, Fall

Core Arts & Humanities, Trans Mod Arts and Humanities

## THR 2000 Theatre Practicum I

[0 credit hours]

Students will be assigned a crew position for one of the department productions.

**Term Offered:** Spring, Fall

## THR 2020 Theatre Performance Practicum

[1-3 credit hours]

Lab course introducing students to the departmental production program through participation as a performer.

**Term Offered:** Spring, Summer, Fall

## THR 2050 Theatre Practicum II

[0 credit hours]

Lab course where students apply skills from foundational design and technology courses in support of the departmental production program. Practicum II students serve in departmental workshops throughout the semester. The course is credit/no credit.

**Prerequisites:** THR 1030 with a minimum grade of D- and THR 1040 with a minimum grade of D- and THR 1050 with a minimum grade of D-

## THR 2100 Departmental Ensemble

[0 credit hours]

A collaborative colloquium course in support of departmental production and academic programming. This course is credit/no credit.

## THR 2200 Script Analysis

[3 credit hours]

A survey of various playwriting and performance text composition structures from ancient to contemporary periods. Students will focus on the most prevalent and ground-breaking dramaturgical methods in the historical practice of dramatic composition.

**Term Offered:** Spring, Fall

## THR 2400 Fundamentals of Design

[3 credit hours]

Fundamentals of Design is an introduction to visual communications, styles and techniques. It also includes a thorough exploration of basic aesthetic theory as it applies to all elements of visual design. Fundamentals of Design will develop skills of script analysis, as well as explore designing for the stage and screen as a means of communication, artistic expression and the organization of design information.

**Prerequisites:** THR 2200 with a minimum grade of D-

**Term Offered:** Fall

## THR 2420 Stage Makeup

[3 credit hours]

[2 hours] Introduction to principles and techniques of makeup for the stage. Students explore practical executions of stage makeup problems. Topics may include special effects, old age techniques, creature design, period specific makeup and makeup design. Students are required to purchase supplies.

**Term Offered:** Spring, Fall

## THR 2600 Acting I

[3 credit hours]

An introduction to the art and craft of acting. Through scene work and improvisation, students learn to use acting terminology, identify dramatic beats, develop character objectives and play actions. Students who are not theatre majors or minors must get permission of instructor.

**Term Offered:** Spring, Fall

## THR 2640 Voice And Movement

[3 credit hours]

Theory and practice of vocal and physical techniques for the actor. Repeatable for up to 8 hours of credit.

**Prerequisites:** THR 2610 with a minimum grade of D- or THR 1010 with a minimum grade of D-

**Term Offered:** Spring, Fall

## THR 2660 Acting for the Camera I

[3 credit hours]

Performing dramatic material for camera with an emphasis on the differences between stage and screen performing.

**Prerequisites:** THR 2610 with a minimum grade of D-

## THR 2990 Special Projects

[1-3 credit hours]

Individual study provides a student an opportunity to work independently on a problem of special interest in theatre under the direction of the faculty. (Seminar forms available in the department office.)

**Term Offered:** Spring, Fall



**THR 3150 Theatre History - Ancient to Contemporary - WAC**

[3 credit hours]

This course explores major developments and trends in theatrical production, theory, and playwriting from ancient times to the Present. The study of theatre history in this course is applied to the development of design and directorial approaches for plays by theatre artists. In addition, students will use performance techniques in class to explore historical production methods and theatrical theories through practice.

**Prerequisites:** ENGL 1110 with a minimum grade of D-

**Term Offered:** Spring, Fall

**THR 3210 Playwriting**

[3 credit hours]

Creative writing for the theatre analyzing traditional and contemporary structure and style.

**Prerequisites:** ENGL 2720 with a minimum grade of D- or THR 2200 with a minimum grade of D-

**Term Offered:** Spring

**THR 3250 Theatre and Stage Management**

[3 credit hours]

Theatre & Stage Management will provide students with a general overview of the administrative and management functions of an arts organization as well as an introductory look at the responsibilities and process of stage management. Through readings and videos, interactive discussion forums, research projects, and practical assignments, the student will develop an understanding of the structure and business of the performing arts and its various management positions, translating traditional business practices into the language of the arts.

**Term Offered:** Spring

**THR 3340 Acting for the Camera II**

[3 credit hours]

This course is directed toward third and fourth year acting students at University of Toledo's Department of Theatre and Film who have completed Acting for the Camera I. It is designed to reinforce and build upon the principles explored in Acting for the Camera I.

**Prerequisites:** THR 3610 with a minimum grade of D- and THR 2660 with a minimum grade of D-

**Term Offered:** Spring

**THR 3410 Stage Lighting Design**

[3 credit hours]

Principles and theories of lighting design for theatrical productions are explored. Develop skills of script analysis, light study, light plot and related graphics for conceptualization and communication of design ideas.

**Prerequisites:** THR 1040 with a minimum grade of D- and THR 2400 with a minimum grade of D-

**Term Offered:** Spring

**THR 3420 Advanced Stage Management**

[3 credit hours]

Study and application of professional practices of the Stage Manager as they pertain to the theatrical production. Emphasis is placed on the duties, responsibilities and procedures from pre-production to post-production planning.

**Prerequisites:** THR 3250 with a minimum grade of D-

**Term Offered:** Fall

**THR 3430 Advanced Stagecraft and Technical Production**

[3 credit hours]

This course is designed to expand upon the foundation of scenic construction techniques formed in basic theatre practices: Stagecraft. Topics include welding/metalworking, advanced woodworking, scenic automation, theatrical rigging, and technical direction/project management/shop management.

**Prerequisites:** THR 1030 with a minimum grade of D-

**THR 3440 Stage Scenic Design**

[3 credit hours]

Theory and principles of scenic design for stage are the focus.

Conceptualization and communication of design ideas are explored through renderings, models, ground plans and elevations. Students are required to purchase supplies.

**Prerequisites:** THR 2400 with a minimum grade of D-

**Term Offered:** Fall

**THR 3450 Scene Painting**

[3 credit hours]

Students learn the fundamental skills of the scenic artist in large scale painting: preparing and sizing the surfaces, gridding and other layout, and painting techniques and tools used by the scenic artist.

**THR 3460 Advanced Costume Construction**

[3 credit hours]

This course builds upon the skills developed in THR 1050 Costuming. Advanced techniques will be explored such as pattern development, construction of several garments from pattern to finishing, as well as development of additional advanced hand sewing techniques.

**Prerequisites:** THR 1050 with a minimum grade of D-

**Term Offered:** Spring, Fall

**THR 3470 Stage Sound Design**

[3 credit hours]

Students study the methods and techniques of sound production and design used in the theatre. Tools and techniques of audio production are used in laboratory recording and mixdown.

**Prerequisites:** THR 1040 with a minimum grade of D- or MUS 2270 with a minimum grade of D-

**Term Offered:** Spring

**THR 3480 Stage Costume Design**

[3 credit hours]

Principles and theories of costume design for theatrical productions are explored. Develop skills of script analysis, sketching, fabric study and rendering for conceptualization and communication of design ideas. Students are required to purchase supplies.

**Prerequisites:** THR 1050 with a minimum grade of D-

**THR 3600 Acting II**

[3 credit hours]

Students are exposed to a range of techniques explicated by primary acting theorists/practitioners, including diagnosis of individual skills, work in voice, movement, textual analysis and scene preparation.

**Prerequisites:** THR 2610 with a minimum grade of D- or THR 2600 with a minimum grade of D-

**Term Offered:** Spring

**THR 3710 Directing I**

[3 credit hours]

The director's approach to analyzing a script, formulating a production concept and realizing that concept on stage. Discussions and exercises progress to directing scenes or short plays in class.

**Prerequisites:** THR 2400 with a minimum grade of D- and THR 2610 with a minimum grade of D- and THR 3150 with a minimum grade of D-

**Term Offered:** Spring, Fall

**THR 3800 Production**

[1-3 credit hours]

Through study and practice the student contributes significantly to department productions. This course is for students who have auditioned for roles or applied for design/tech positions in department productions.

**Term Offered:** Spring, Summer, Fall

**THR 3990 Professional Conference-Festival Practicum**

[0 credit hours]

A lab course in support of preparation and participation in pre-professional experiences, conferences and/or festivals. There is a lab fee in support of student travel and expenses.

**Term Offered:** Spring, Fall

**THR 4150 Theatre Studies**

[3 credit hours]

Application of the methods of theatre history, theory, and criticism to the exploration of a specific theatrical theme, style, historical period, or practice.

**Prerequisites:** THR 3110 with a minimum grade of D- and THR 3120 with a minimum grade of D-

**THR 4310 Acting for the Camera III**

[3 credit hours]

This course is directed toward fourth year and Capstone acting students at University of Toledo's Department of Theatre and Film who have completed Acting for the Stage I and Acting for the Camera I and II. It is designed to reinforce and build upon the principles explored in Acting for the Camera II. The course will consist of developing characters from dialogue, improvisation and writing, while creating a story with advanced filmmakers from the Film Department.

**Prerequisites:** THR 2660 with a minimum grade of D-

**Term Offered:** Spring

**THR 4400 Seminar Topics In Design**

[3 credit hours]

Individual and group investigations of particular topics in all phases of design and technology, i.e. scene painting, advanced design and rendering technique, new technology.

**Term Offered:** Spring, Fall

**THR 4440 Theatre Design**

[3 credit hours]

Principles and theories for theatrical design are explored through real world implementation on departmental productions.

**Term Offered:** Spring, Fall

**THR 4600 Acting III**

[3 credit hours]

Advanced acting course with a focus on text analysis and the technique and craft of performance.

**Prerequisites:** (THR 2600 with a minimum grade of D- or THR 2610 with a minimum grade of D-) and (THR 2620 with a minimum grade of D- or THR 3600 with a minimum grade of D-)

**Term Offered:** Spring, Fall

**THR 4940 Internship**

[3 credit hours]

Internship with an approved program, company, or agency in theatre.

Students must submit proposal for approval of instructor. (Repeatable for 6 hours credit.)

**Term Offered:** Spring, Summer, Fall

**THR 4950 Honors Thesis**

[3 credit hours]

Research or a creative project on a topic in theatre. Required of all candidates seeking department honors. (Repeatable for 6 hours credit.)

**Term Offered:** Spring, Fall

**THR 4990 Special Projects**

[1-3 credit hours]

Individual study provides a student an opportunity to work independently on a problem of special interest in theatre under the direction of the faculty.

**Term Offered:** Spring, Fall

# THEORY AND SOCIAL FOUNDATIONS (TSOC)

## TSOC 1500 Education In A Diverse Society

[2 credit hours]

Introduction to the socio-cultural foundations of schooling in the United States, including purposes of schooling in a multicultural society and the resulting nature of teacher work.

## TSOC 2000 Diversity In Contemporary Society

[3 credit hours]

This course analyzes the roles of people in a culturally diverse society through an exploration of issues of race, class, gender, ethnicity and disability.

**Term Offered:** Spring, Fall

Multicultural US Diversity

## TSOC 2500 Historical-Philosophical Perspectives On Education

[2 credit hours]

This course uses history and philosophy as lenses through which to inspect and reflect on the developing role of public schooling in the US from colonial times to the present.

## TSOC 3000 Schooling And Democratic Society

[3 credit hours]

The evolving role of education in the US, including the historical and contemporary relationship of schooling to other educational institutions, groups of people and the process of social change.

**Term Offered:** Spring, Summer, Fall

## TSOC 3010 Educating The Reflective Practitioner

[3 credit hours]

Emphasizes being and teaching others to be "reflective practitioners" in vocational and avocational endeavors. Coping with changing client circumstances, effective thinking, higher levels of learning and self-renewal are also studied.

## TSOC 3100 Inquiry And Creative Action

[3 credit hours]

Different approaches to problem solving are examined and students use some to complete real-life projects they have designed. Creativity, logical analysis, personal effectiveness and polarity management will be studied.

## TSOC 3500 Society Culture and History Influenced Middle Grades

[3 credit hours]

## TSOC 3540 Education And The Construction Of Societies

[3 credit hours]

Examines life long conceptual learning tools from several humanity disciplines that help define and frame action on real life problems of a diverse, global nature.

**Term Offered:** Spring, Fall

## TSOC 4000 Socio-Cultural And Historical Influences On U.s. Education

[3 credit hours]

The evolving role of education in the US, including the historical and contemporary relationship of schooling to other educational institutions, groups of people and the process of social change.

## TSOC 4100 Group Processes In Education

[3 credit hours]

Investigation of theory, research and individual interactions which undergird effective actions in groups. Group processes and individual-group relationships are emphasized in education, voluntary and business group settings.

## TSOC 4130 Children And The Law

[2 credit hours]

Examines major issues and laws involved in public education and health services, especially the role of advocate for students that the school nurse and other professionals play.

## TSOC 4150 Education And Community Relations

[3 credit hours]

Provides a framework, the analysis skills and the action implementation behaviors for understanding community schools and agencies. Develops skills in project management within the context of understanding and valuing diversity.

## TSOC 4190 Workshop In Educational Theory & Social Foundations

[1-5 credit hours]

Practical applications of topics of interest and concern for preservice teachers and other education personnel.

## TSOC 4940 Field Experience In Pacs

[1-10 credit hours]

Students will establish and complete an internship focusing on specified objectives, actions and time schedules under both on and off-campus supervision. Progress reports and a summary evaluation are required.

## TSOC 4990 Independent Study In Educational Theory

[1-4 credit hours]

Directed study of a current topic in educational theory and social foundations. The student meets with the instructor at arranged intervals without formal classes.

**Term Offered:** Spring, Summer, Fall

# TRANSPORT TECH (TPDT)

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## **TPDT 1010 Principles of Transportation**

[3 credit hours]

This course introduces the transportation services available in the marketplace, public policy decisions and concerns, pricing of transportation services, and transportation's relationship to other functions in the business world.

**Term Offered:** Spring, Summer

## **TPDT 2010 Regulation of Transportation in a Changing Environment**

[3 credit hours]

This course focuses on the regulatory issues facing the modern transportation/logistics manager where environmental, hazardous material safety, and NAFTA regulations are more important than the traditional economic regulations.

## **TPDT 2070 Technology Uses in Logistics**

[3 credit hours]

This course will introduce the student to technologies used by transportation companies and the business world. Students will gain practical experience by completing assignments using technology-based tools.

## **TPDT 2130 Warehousing and Terminal Management**

[3 credit hours]

This course studies the management of the storage of goods from the time the journey begins as raw materials until the finished product is delivered to the consumer.

## **TPDT 2210 Mgmt of Commercial Transport**

[3 credit hours]

This course is taught from the perspective of users of transportation/logistical services. It ties the concepts introduced in earlier courses together with emphasis on current management philosophies in transportation.

**Prerequisites:** TPDT 1010 with a minimum grade of D-

# UNDERGRADUATE RESEARCH (UGR)

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**UGR 2980 Issues in Research and Scholarship**

[1 credit hour]

Seminar series addressing various issues that can arise in research, scholarship, and creative activities, including: safe laboratory practices, regulatory compliance issues, and ethics issues.

**Term Offered:** Summer

**UGR 4910 Undergraduate Research Experience**

[0 credit hours]

Undergraduate students will participate in directed research, scholarship, or creative activities with faculty mentors.

**Term Offered:** Spring, Summer, Fall



# UNIVERSITY COLLEGE (UC)

## UC 1000 Orientation

[1 credit hour]

An orientation to college for incoming first year students in the Gateway Program. It is designed to equip students with tools for academic success.

**Term Offered:** Spring, Fall

## UC 1110 Creative Problem Solving

[2 credit hours]

This course assists students in developing problem solving skills through critical thinking, simulated situations and other activities designed to engage and challenge problem solving capabilities.

## UC 1120 Career And Self-Evaluation

[2 credit hours]

This course offers an opportunity to explore two important considerations in choosing a career: (1) career opportunities and requirements, (2) individual interests, abilities, skills, needs, values and goals. Students will have opportunities to develop a resume, complete career and interest assessments, investigate a variety of majors at UT and create a personalized career action plan.

**Term Offered:** Spring, Summer, Fall

## UC 1130 Information Literacy for College Research

[3 credit hours]

This course will provide information literacy skills specific to accessing sources and materials appropriate for university level research. Students will acquire a broader knowledge of library services and resources. Additionally, students will learn to apply research logic in order to utilize library catalogs, electronic databases, the World Wide Web, and print resources. By building experiential knowledge, students will gain an understanding of information creation, dissemination, and applications through utilizing various research strategies and scholarly communication.

Core Arts & Humanities

## UC 1140 Introduction to Learning Technologies

[1 credit hour]

This course prepares students with the computer and media literacy skills necessary for successful online learning. Students will acquire greater knowledge of the academic technologies utilized by the University, including email, Blackboard, virtual labs, online library resources, Web 2.00 tools, and the role of copyright and accessibility standards with respect to these technologies.

## UC 1150 Orientation: Strategies for College Success

[3 credit hours]

Acquaints students with the services, policies, procedures and layout of the University, along with relevant study skills and student learning services available campus-wide. Required of all pre-major students; optional for others.

## UC 1200 Applications of Thinking Critically

[3 credit hours]

Introduces students to critical thinking and fosters intellectual abilities. The course is designed for first year students who earned below a 2.0 their first or second semester and for transfer or adult students entering college with less than a 2.00 GPA.

## UC 1940 Learning Through Service

[2 credit hours]

Students will be involved four hours a week in various community service projects and analyze and reflect on their experiences through journals, discussion and a final paper in a weekly seminar (local, domestic and International).

## UC 2980 Special Topics

[1-4 credit hours]

Special Topics is an opportunity to create and pilot potential courses at a 2000 level.

**Term Offered:** Spring, Summer, Fall

## UC 4980 Special Topics

[1-4 credit hours]

Topics of interest to University College students offered by various instructors. Open to any University College student.

# WOMEN AND GENDER STUDIES (WGST)

## WGST 1150 Proseminar In Women's And Gender Studies I

[1 credit hour]

Students reflect on the academic and professional and community activist dimensions of Women's and Gender Studies. Students develop a preliminary plan for the development of their portfolio.

**Term Offered:** Fall

## WGST 2010 Introduction To Gender Studies: Gender, Sex And Difference

[3 credit hours]

Interdisciplinary introduction to gender studies. Critically examines competing theories of gender and sex identification, construction, and biological determinism. Considers ethical and intersectional issues regarding differences of gender, sex and sexuality.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity

## WGST 2020 Girlhood and Adolescence

[3 credit hours]

This class examines the adolescent experience of the American teenage girl using historical documents, current films, magazines, and popular teen fiction. This class looks at the complexities that race, socioeconomic status, ethnicity and sexual orientation have on the experience of the teenage girl. Students will have several opportunities to share their own adolescent experiences as they relate to assigned readings.

**Prerequisites:** WGST 2010 with a minimum grade of D-  
Multicultural US Diversity

## WGST 2150 Proseminar In Women's & Gender Studies II

[1 credit hour]

Designed for majors only. Students reflect on the academic and professional and community activist dimensions of Women's and Gender Studies. Special emphasis will be dedicated to the completion of the portfolio for future career, community activism and graduate studies.

**Term Offered:** Spring, Summer

## WGST 2400 Women's Roles: A Global Perspective

[3 credit hours]

The course focuses on the current and evolving social, economic and political status of women in the United States and selected non-Western societies.

**Term Offered:** Fall

Core Social Sciences, Multicultural Non-US Diversity, Trans Mod Social Science

## WGST 2610 Women In American Politics

[3 credit hours]

An examination of the role of women in the American political system with special attention to the socializing experiences, political power bases and legal status.

**Prerequisites:** PSC 1200 with a minimum grade of D-  
Multicultural US Diversity

## WGST 2640 Race, Class, And Gender

[3 credit hours]

Introduction to the study of race, class and gender as factors in American stratification.

**Term Offered:** Spring, Summer, Fall

Core Social Sciences, Multicultural US Diversity, Trans Mod Social Science

## WGST 2880 Contemporary U.S. Queer Cultures

[3 credit hours]

An interdisciplinary, multicultural examination of diverse lesbian, gay, bisexual, transgender, and other queer cultural productions, this course examines continuities and conflicts in aesthetics, issues, materials, and motivations for queer culture.

**Term Offered:** Spring, Fall

Multicultural US Diversity

## WGST 2980 Special Topics In Women's And Gender Studies

[3 credit hours]

Study of selected topics relevant to Women's and Gender Studies. May be repeated for major or minor credit when topic varies.

**Term Offered:** Spring, Summer, Fall

## WGST 3010 Issues In Women's Studies

[3 credit hours]

Required for the major. An interdisciplinary introduction to basic works of feminist thought, feminist methodologies and current issues in the field world-wide. Writing Intensive (WAC) course.

**Prerequisites:** ENGL 1130 with a minimum grade of D-

**Term Offered:** Spring, Summer, Fall

Multicultural Non-US Diversity

## WGST 3020 Visual Construction Of Gender

[3 credit hours]

Writing intensive (WAC) course. This non-studio course focuses on the ways images reflect and shape our understanding of gender. Students will learn to analyze visual material in order to identify and articulate their cultural significance in relation to gender.

**Term Offered:** Spring, Summer

Multicultural US Diversity

## WGST 3030 Women and the Body

[3 credit hours]

This class will look at the complexities of women's relationships to their bodies and how the intersectionalities of race, gender identity, sexuality and societal pressures help shape the ways women feel about themselves. Using popular culture, feminist theory, and other mediums, this class expects students to participate in self-reflection, critical analysis, and the application of various feminist theories to their work.

**Prerequisites:** WGST 2010 with a minimum grade of D-  
Multicultural US Diversity

## WGST 3200 Issues In Lesbian, Transgender, Bisexual And Gay Communities

[3 credit hours]

This course will explore current issues facing diverse LTBGQ communities including historical, socio-cultural and political perspectives.

**Term Offered:** Fall

**WGST 3400 Feminist Approaches To Social Problems**

[3 credit hours]

This course will examine current social problems from a feminist perspective. The course will examine such issues as the feminization of poverty, violence against women, homeless, prostitution, teen pregnancy, HIV/AIDS and addictions.

**Term Offered:** Spring**WGST 3550 Feminism And Philosophy**

[3 credit hours]

An examination of feminist perspectives on love, sex and marriage in philosophy, exploring the relevance of gender to central questions in ethics, political theory and epistemology.

**Term Offered:** Spring, Summer

Multicultural US Diversity

**WGST 3650 Economics Of Gender**

[3 credit hours]

Analysis of labor market outcomes and income distribution characteristics resulting from gender differences; Gender-related economic outcomes; the feminization of poverty, persistent male-female wage differential, expanding proportion of female headed households.

**Prerequisites:** ECON 1150 with a minimum grade of D- or ECON 1200 with a minimum grade of D-

**Term Offered:** Summer, Fall

Multicultural US Diversity

**WGST 3700 Women's Studies Topics In Literature**

[3 credit hours]

Specific topics vary. Check schedule of classes for specific subject.

**Term Offered:** Spring, Fall**WGST 3750 Women And Literature**

[3 credit hours]

Examines literary works in light of major issues raised by feminist criticism. Specific emphasis varies. Recommended ENGL 2700 or 3790

**Term Offered:** Spring, Summer

Multicultural US Diversity

**WGST 3800 Sexual Politics**

[3 credit hours]

This course examines sexual politics through studying canonical literature of Western political theory, feminism and postmodern theory.

**Term Offered:** Spring, Fall**WGST 3980 Topics In Women's Studies**

[3 credit hours]

Specific topics vary. Check schedule of courses for specific subject.

**Term Offered:** Spring, Summer, Fall**WGST 4010 Women's Studies Topics In Film**

[3 credit hours]

Specific topics vary. Check schedule of courses for specific subject and prerequisites.

**Term Offered:** Spring, Fall**WGST 4160 Health And Gender**

[3 credit hours]

An examination of gender as a predisposing factor of health status, health behavior, health care delivery, and the structure and posture of health care professionals. Writing intensive (WAC) course.

**WGST 4190 Gender In Cross-Cultural Perspective**

[3 credit hours]

Analysis of gender stratification and its impact on culture in various nations and across ethnic groups in the United States.

Multicultural Non-US Diversity

**WGST 4200 Women's Studies Topics In Science**

[3 credit hours]

Cross-listings of 4000-level courses with biology, chemistry, geology, math, natural sciences, physics and pre-med. Specific topics vary. Check schedule of courses for specific subject and prerequisites.

**WGST 4350 Women's Studies Topics In Communication**

[3 credit hours]

Cross-listings of 4000-level courses with the communication department. Specific topics vary. Check schedule of courses for specific subject and prerequisites determined by the department of communication.

**Term Offered:** Summer, Fall**WGST 4500 Women's Studies Topics In History**

[3 credit hours]

Crosslistings of 4000 level courses with the history department. Specific topics vary. Check schedule of courses for specific subject and prerequisites.

**Term Offered:** Spring, Fall**WGST 4510 Women In American History**

[3 credit hours]

This course presents American history from early settlement to the present by examining the contributions of women, in interaction with men, to the immensely complex fabric of American life.

**Term Offered:** Spring, Fall

Multicultural US Diversity

**WGST 4540 Witchcraft And Magic In Medieval And Early Modern Europe**

[3 credit hours]

Witchcraft, religion and magic in western Europe from the 12th through 17th centuries, focusing on the origins of witchcraft belief, diabolical magic, the witchcraft and its decline.

**Term Offered:** Spring**WGST 4590 Law, Policy, And The Politics Of Sexuality**

[3 credit hours]

This course explores law, policymaking, and public attitudes that affect gay, lesbian, bisexual and transgendered individuals in the U.S. Topics include hate crimes legislation, discrimination law, and same-sex marriage.

**Term Offered:** Spring**WGST 4610 Feminist Political Theory**

[3 credit hours]

Readings in and interpretation of feminist political theories about the state, power, citizenship, and identity.

**Prerequisites:** PSC 2800 with a minimum grade of D-**WGST 4700 Women's Studies Topics In Literature**

[3 credit hours]

Specific topics vary. Check Course Schedules for specific subject.

**Term Offered:** Spring

**WGST 4760 Feminist Readings Of Literature**

[3 credit hours]

Classic works by diverse American and English men and women considered in light of significant recent feminist scholarship and how such perspectives enhance classroom teaching and academic production.

**WGST 4770 American Women Writers**

[3 credit hours]

Author/authors vary with each offering. Consult schedule of courses for specific subject. Recommended ENGL 2700, 2800 or 3790.

**WGST 4810 Women's Health Care**

[3 credit hours]

The course is designed to consider those personal health topics of special interest and applicability to women. The focus will be upon the role of self-understanding and self-help in promotion of health and well-being.

**Term Offered:** Spring, Summer, Fall**WGST 4870 Feminisms**

[3 credit hours]

This introduction to global feminist thought familiarizes students with feminist terminology and a variety of feminist theoretical frameworks.

**Term Offered:** Spring, Fall**WGST 4880 Queer Theory WAC**

[3 credit hours]

This course explores the theoretical concepts/texts of Queer Theory and its locations in communities and identities, focusing principally on the theories that have emerged since the late 1990s.

**Prerequisites:** WGST 3010 with a minimum grade of D- or WGST 2010 with a minimum grade of D-

**Term Offered:** Spring

Multicultural US Diversity

**WGST 4890 Women's Studies Research And Methodologies**

[4 credit hours]

Investigates and applies current trends in Women's Studies as a discipline and the ways in which Women's Studies methodologies inform other disciplines. Requires research project.

**Term Offered:** Fall**WGST 4900 Seminar In Women's Studies**

[3 credit hours]

Seminar focused on timely topics in Women's Studies chosen by rotating faculty.

**Term Offered:** Spring, Summer**WGST 4910 Honors Thesis In Women's And Gender Studies**

[1-3 credit hours]

Supervised research and writing for honors students only.

**Term Offered:** Spring, Summer, Fall**WGST 4940 Internship In Women's Studies**

[1-3 credit hours]

Practical field experience applying Women's Studies theories, arranged in conjunction with the department of women's and gender studies.

Students must have pre-approval based on detailed written proposal.

**Term Offered:** Spring, Summer, Fall**WGST 4980 Advanced Topics In Women's Studies**

[3 credit hours]

A course on a special topic in Women's Studies. Consult schedule of courses for topic to be studied and semester offered. Recommended WGST 3010.

**Term Offered:** Spring, Fall**WGST 4990 Independent Study In Women's Studies**

[1-4 credit hours]

Supervised independent reading and research on selected topics. Before the end of open registration, students must present the supervising instructor a detailed written proposal and get written approval.

**Term Offered:** Spring, Summer, Fall

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