

BA IN CHEMISTRY

The Bachelor of Arts (B.A.) in Chemistry requires a minimum of 120 hours of coursework.

Chemistry majors study the properties, composition and structure of matter- and how matter changes and impacts everyday life. Chemistry is considered a cornerstone of the natural sciences and can lead to a wide range of careers in many different and diverse fields.

The BA degree in Chemistry provides students with a strong foundation

- in the traditional subdisciplines of chemistry- analytical, inorganic, organic, and physical in a mathematically less rigorous track
- in laboratory skills emphasizing hands-on training with advanced instrumentation in modern facilities
- in a secondary field as a dual-major combined with for example, a B.S. degree in biology or chemical engineering

Prepares students to

- gain employment in laboratory positions in chemical or biopharmaceutical industries
- enter the business or sales end of the chemical or biopharmaceutical industry
- enter professional programs such as law, business, medicine, and forensic or veterinary science

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. Students pursuing a BS/BA in Chemistry cannot double major with a BS/BA in Biochemistry, or minor in Chemistry. The minor in Green Chemistry and Engineering or the certificate in Analytical Chemistry are permitted.

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 3712, CHEM 3722, CHEM 3732, CHEM 3742, CHEM 3910, CHEM 3920, CHEM 4910 and CHEM 4920

The following related courses are also required:

MATH 1830 and MATH 1840, or MATH 1850 and MATH 1860 (Calculus I and II)
 PHYS 2070 and PHYS 2080, or PHYS 2130 and PHYS 2140 (Physics I and II)

And 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.

First Term		Hours
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
Second Term		
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
Third Term		
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: ¹		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

Fourth Term

CHEM 2420	Organic Chemistry II	3
CHEM 2490	Organic Chemistry Laboratory II for Majors: Synthesis and Identification	2
CHEM 3360	Analytical Chemistry Laboratory (WAC)	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

Fifth Term

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 ²		4
Hours		16

Sixth Term

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 ²		4
Social Sciences Core		3
History College Requirement		3
Hours		17

Seventh Term

Chemistry 3000-4000 elective ³		2-4
Elective needed to reach 120 hours		3
Multicultural Diversity of US		3
English Literature College Requirement		4
Hours		12-14

Eighth Term

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

¹ If taking, or have taken MATH 2850, this can be an elective.

² FL Foreign Language to be decided by student and adviser.

³ Excluding CHEM 3712, CHEM 3722, 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.

- PLO 1. Students in the Chemistry BA degree program must be able to solve, with the appropriate non-calculus based mathematical techniques, and analyze any problem from the core areas of chemistry.
- PLO 2. Students in the Chemistry BA degree program must be able to conduct and analyze experimental procedures explain uncertainties associated with the measurements.
- PLO 3. Students in the Chemistry BA degree program must be able to describe data and results in both written and oral formats.