The Department of Pharmacy Practice includes the divisions of Pharmacy Practice, Pharmaceutics and Industrial Pharmacy, and Health Outcomes and Socioeconomic Sciences.

About the Department

The department has tenure/tenure-track faculty members, clinical-track faculty members, four staff people, and residents who participate in undergraduate and graduate education, post-graduate training, basic and clinical research, and the practice of pharmacy. In addition, over 300 community-based faculty members assist the department in the teaching mission by providing introductory and advanced pharmacy practice experiences and scientific internships.

Nearly all faculty members in the department are pharmacists. The faculty 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.

Faculty members practice at the University of Toledo Medical Center (http://utmc.utoledo.edu/) and Clinics, the Center for Health Services, Zepf Behavioral Health, and Kroger Pharmacy, among other practice sites.

Health Outcomes and Socioeconomic Sciences

The division of Health Outcomes and Socioeconomic Sciences (https://www.utoledo.edu/pharmacy/depts/deptpharmpractice/hoss/) includes faculty members with expertise in social and behavior health, pharmacoconomics, and healthcare outcomes. The division provides the MS degree program in pharmacy administration and health outcomes.

Pharmaceutics and Industrial Pharmacy

The division of Pharmaceutics and Industrial Pharmacy prepares students to assume pharmaceutical manufacturing positions performing a variety of specialized tasks including pre-formulation evaluation, dosage form design, stability testing, pilot plant scale-up and production.

Contact Us

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Degrees Offered

DPH in Pharmacy (http://utoledo-public.courseleaf.com/graduate/pharmacy-pharmaceutical-sciences/departments-programs/pharmacy-practice/dph-pharmacy/)

Master of Science in Pharmaceutical Sciences (http://utoledo-public.courseleaf.com/graduate/pharmacy-pharmaceutical-sciences/departments-programs/pharmacology/msps-pharmacology-toxicology/#text)
  • Health Outcomes and Socioeconomic Sciences (http://utoledo-public.courseleaf.com/graduate/pharmacy-pharmaceutical-sciences/departments-programs/pharmacy-practice/msps-health-outcomes-socioeconomic-sciences/)
  • Industrial Pharmacy (http://utoledo-public.courseleaf.com/graduate/pharmacy-pharmaceutical-sciences/departments-programs/pharmacy-practice/msps-industrial-pharmacy/)

PHPR 5000 Residency and Postgraduate Training Preparation
[1 credit hour]
Instruction on the various aspects of obtaining a position within a pharmacy residency training program or other postgraduate training program.
Term Offered: Spring, Fall

PHPR 5010 Advanced Evidence Based Medicine
[2 credit hours]
This course expands upon the principles and practice of evidence based medicine (EBM) in guiding clinical decision making in pharmacy practice. This course will emphasize advanced concepts in drug literature evaluation and critique of landmark clinical trials.
Term Offered: Fall

PHPR 5260 Pharmacy and Healthcare Administration
[2 credit hours]
Description and analysis of the organization, financing and delivery of healthcare in the U.S.
Term Offered: Spring, Fall

PHPR 5300 DESIGN AND APPLICATIONS OF CANCER CHEMOTHERAPY
[1 credit hour]
In depth discussion of the principles of drug design and development within the framework of the pharmacotherapeutic management of cancer and cancer prevention.
Corequisites: MBC 5300
Term Offered: Fall

PHPR 5520 Pharmaceutical Marketing and Management
[3 credit hours]
Introduction to administrative sciences (marketing/management, etc.) in the provision of pharmaceutical care. Topics include multicultural communication, operation of various pharmacy practice settings, barriers to health care access, facilitation of patient access to pharmaceutical care.
Term Offered: Spring
PHPR 5590 Readings in Access and Cultural Competence
[2 credit hours]
Examination of the literature related to access and cultural competence in the US health care system. Various types of readings will be used to analyze the relationships that exist between access, cultural competence and positive healthcare outcomes.
Prerequisites: PHPR 4520 (may be taken concurrently) with a minimum grade of C
Term Offered: Spring, Summer

PHPR 5610 Pharmacoeconomics and Outcomes Research I
[2 credit hours]
This course emphasizes advanced concepts, methods, and practical procedures for pharmacoeconomic analysis and outcomes research. The student will learn through readings and experience assessment of patient health status, quality of life, satisfaction and cost-effectiveness for pharmacoeconomic and health outcomes research and interpretation of economic and outcomes data.
Term Offered: Spring

PHPR 5620 Pharmacoeconomics and Outcomes Research II
[3 credit hours]
This course emphasizes advanced concepts, methods and practical procedures for pharmacoeconomic analysis and outcomes research. The student will learn through readings and experience assessment of patient health status, quality of life, cost-effectiveness for pharmacoeconomic and health outcomes research and interpretation of economic and outcomes data.
Prerequisites: PHPR 5610 with a minimum grade of C
Term Offered: Fall

PHPR 5680 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-)
Term Offered: Fall

PHPR 5690 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 3010 with a minimum grade of D- and PHPR 3070 with a minimum grade of D-)
Term Offered: Spring, Fall

PHPR 5700 Equilibrium Phenomenon
[2 credit hours]
A theoretical and practical examination of the principles of chemical equilibrium and the techniques used in their calculation. Physical and chemical concepts focus on pharmaceutical systems as well as selected areas of chemistry.
Term Offered: Spring

PHPR 5710 Selected Topics in Pharmaceutical Technology
[2-3 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: Spring, Summer, Fall

PHPR 5720 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 5770 Advanced Drug Delivery Systems – I
[3 credit hours]
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. Students are required to design a project proposal for presentation.
Term Offered: Spring, Fall

PHPR 5780 Advanced Drug Delivery Systems – II
[2 credit hours]
This course is designed to provide students with an understanding of the current state of the art for novel drug delivery systems with a particular focus on nanocarrier systems such as nanoparticles, polymeric micelles and solid lipid nanoparticles, for delivering small molecules. This course will introduce students to recent topics in the areas of cancer therapy and site-specific drug delivery.
Prerequisites: PHPR 3020 with a minimum grade of D- and PHPR 3030 with a minimum grade of D-

PHPR 5800 FINANCE AND PERSONAL PLANNING FOR PHARMACISTS
[2 credit hours]
Practical topics on financial, professional, and personal situation to better prepare students to make knowledgeable decisions that affect future security and success. (Prerequisites: Third Professional Year PharmD or permission of instructor.)
Term Offered: Spring, Summer

PHPR 5870 Compounding Boot Camp
[2 credit hours]
This course is a companion to the Professional Compounding Center of America Boot Camp held at the college every year. Students will complete the boot camp lab experience and work through cases and webinars and other problem solving exercises to master techniques for creating new dosage forms.
Prerequisites: PHPR 3080 with a minimum grade of D-
Term Offered: Summer, Fall

PHPR 5990 Problems In Pharmacy Practice
[1-6 credit hours]
Tutorial or directed, individual research problems in administrative pharmacy, or other related fields.
Term Offered: Spring, Summer, Fall
PHPR 6000 Drug Information Seminar
[2 credit hours]
An advanced seminar course which applies evidence based medicine through literature searching, drug literature evaluation skills, and formal writing and presentation skills to complete a written literature summary and patient population based therapeutic recommendation, as well as a verbal presentations such as case presentations, disease state and pharmacotherapy reviews and other topic discussions.

PHPR 6010 Leadership and the Military Pharmacist
[2 credit hours]
This two-part online course will cover various advanced leadership discussions and topics, including continuous process improvements, management, followership, difficult conversations/leadership pearls, and the development of the team and individual. Innovation and continuous process improvement (CPI) will be explored and students will have the opportunity to design their own process and program. Additionally, students will explore military pharmacy and therapeutic topics including readiness, emergency management (chemical, biological, radiological, nuclear events), deployment therapeutics, management of personnel/pharmacy, and clinical pharmacy program design, implementation, and evaluation.

Term Offered: Spring

PHPR 6070 PPD-5
[3 credit hours]
Laboratory course to enhance the application of knowledge gained in the PPT courses, the development of clinical skills and critical thinking required for the provision of patient centered pharmaceutical care.
Prerequisites: PHPR 4080 with a minimum grade of D-
Corequisites: PHPR 6130, PHPR 6340
Term Offered: Fall

PHPR 6080 PPD-6
[3 credit hours]
Application of knowledge gained in the PPT, drug literature evaluation, and self care courses and the development of clinical skills and critical thinking required for the provision of pharmaceutical care.
Prerequisites: PHPR 6070 with a minimum grade of C
Corequisites: PHPR 6130, PHPR 6340
Term Offered: Fall

PHPR 6120 PPT-5
[3 credit hours]
Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of pulmonary and hematologic diseases.
Term Offered: Summer

PHPR 6130 PPT-6
[4 credit hours]
Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of cardiovascular disorders and nutrition.
Prerequisites: PHPR 6120 with a minimum grade of C
Corequisites: PHPR 6070
Term Offered: Fall

PHPR 6140 PPT-7
[4 credit hours]
Discussion of pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of psychiatric/neurologic disorders, pediatrics, and toxicology.
Corequisites: MBC 6320, PHCL 6320
Term Offered: Spring

PHPR 6160 Advanced Applied Pharmacokinetic
[3 credit hours]
Detailed discussion of pharmacokinetic characteristics of drugs which are commonly included in therapeutic drug monitoring including clinical application.
Prerequisites: PHPR 4160 with a minimum grade of C
Term Offered: Fall

PHPR 6170 Special Populations and Topics
[3 credit hours]
This course discusses population related differences of geriatric, pediatric, and critically ill populations. The pathophysiology, pharmacokinetics, pharmacodynamics, clinical presentation, etiology, diagnostic findings, and pharmacotherapy of common diseases as well as clinical issues specific to these populations will be presented. Enteral and parenteral nutrition therapies and poison evaluation and management will also be discussed.
Corequisites: PHPR 6470

PHPR 6210 Introduction To Research Methods
[2 credit hours]
General overview and introduction to research process as it pertains to clinical pharmacy practice. Special emphasis given to design issues, particularly those involving human subjects.

PHPR 6220 Pharmacoeconomics and Outcomes Research
[1 credit hour]
This course allows students to gain and expand their knowledge base in areas such as application of pharmacoeconomic and effectiveness measures to the practice of health care.

PHPR 6230 Patient Care Rounds I
[3 credit hours]
The course will provide students with advanced experiences in applying and integrating biomedical, psychosocial and pharmacoeconomic principles to patient care. Students will present and discuss how they would identify, prevent and resolve the medication-related problems encountered by a diversity of patient populations.

PHPR 6240 Patient Care Rounds II
[3 credit hours]
The course will provide students with advanced experiences in applying and integrating biomedical, psychosocial and pharmacoeconomic principles to patient care. Students will present and discuss how they would identify, prevent and resolve the medication-related problems encountered by a diversity of patient populations.
Prerequisites: PHPR 6230 with a minimum grade of D-
PHPR 6250 Advanced Self Care
[3 credit hours]
The course will discuss issues surrounding the self-medication decision-making process. Special emphasis will be placed on how pharmacists should help patients safely and effectively treat common medical problems. The course will provide information about how pharmacists should educate and counsel patients about diagnostic tests that the public can purchase without a prescription.
Prerequisites: PHPR 6450 with a minimum grade of D-
Corequisites: PHPR 6080
Term Offered: Spring

PHPR 6260 PHCAD-3
[1 credit hour]
The course will offer in depth teaching and discussions on human resource management, inventory control, and organizational financial management in the respective practice settings.
Prerequisites: PHPR 4520 with a minimum grade of D-
Term Offered: Fall

PHPR 6270 Business Aspects of Pharmacy
[2 credit hours]
This course will provide students with a foundation in the business aspects of the practice of pharmacy and their important role in the provision of pharmaceutical care.
Prerequisites: PHPR 6450 with a minimum grade of C

PHPR 6280 PHCAD-4
[2 credit hours]
This course focuses on developing, implementing, and evaluating Medication Therapy Management (MTM) and Disease State Management (DSM) programs.
Prerequisites: PHPR 6260 with a minimum grade of D-
Term Offered: Spring

PHPR 6290 Medication Therapy and Disease State Management for Masters Students
[2 credit hours]
Focuses on developing, implementing, and evaluating Medication Therapy Management and Disease State Management programs.

PHPR 6300 Fluids Electrolytes and Kidney Disease
[2 credit hours]
This course discusses the pharmacology, pathophysiology, diagnosis and therapeutics related to fluids, electrolytes, acid and base disorders, diuretics and kidney disease. Selected disorders of the kidney including acute, chronic and end stage kidney disease, and renal replacement therapy.
Corequisites: PHPR 6460

PHPR 6310 Jurisprudence and Ethics
[1 credit hour]
Discussion of federal, state and local laws affecting the profession and practice of pharmacy. Ethical principles involved in patient care will be reviewed and applied.
Term Offered: Spring

PHPR 6340 RESEARCH DESIGN AND DRUG LITERATURE EVALUATION 2
[2 credit hours]
Concepts of research design, statistical analysis, drug literature evaluation and evidence based medicine are expanded from PHPR 4330 to depict their practical relevance to pharmacy practice.
Prerequisites: PHPR 4330 with a minimum grade of D-
Corequisites: PHPR 6070
Term Offered: Fall

PHPR 6370 Nutrition
[1 credit hour]
An overview of the fundamental principles of nutritional support and the pharmacist's role in providing nutritional support services.

PHPR 6380 Pathophysiology And Pharmacotherapy: Endocrinology
[2 credit hours]
Discussion of the pathophysiology, clinical presentation, etiologic causes, laboratory findings, diagnosis and therapy of endocrine disorders.
Term Offered: Spring

PHPR 6400 Topics in Internal Medicine
[2 credit hours]
This course is designed to focus on complex and/or controversial pharmacotherapy topics and the evaluation of primary literature and guidelines to promote effective abilities in evaluating, selecting, and recommending pharmacotherapeutic regimens, and educating patients and health care professionals utilizing the principles of evidence based decision making.
Term Offered: Spring, Summer

PHPR 6410 Leadership: Principles and Practice
[2 credit hours]
This course will facilitate student discovery of the concept of self-betrayal and how it impacts the different relationships in their lives. The course is meant to help students take a critical look at their relationships with others by answering the following questions; 1) how am I a problem for others? 2) how can I be more helpful to others? 3) how can I help things go right? The content will be facilitated by the instructor through student reading, self-reflection, and group discussion. Once we have discussed possible solutions to the 3 questions, we will also take a deeper look at how this material impacts some of the different pharmacy and healthcare related areas students will encounter.
Term Offered: Summer, Fall

PHPR 6460 Pharmacy Skills Development - 5
[2 credit hours]
This advanced course will enhance confidence in application of knowledge and skills to prepare students for competent participation in the Pharmacists Patient Care Process and transitions of care in Advanced Pharmacy Practice Experiences.

PHPR 6470 Pharmacy Skills Development - 6
[2 credit hours]
This course is designed to further develop fundamental skills in the Pharmacists Patient Care Process and to enhance confidence in clinical skills necessary for roles in transitions of care.
Term Offered: Spring
PHPR 6520 Analysis Of The Pharmaceutical Environment
[2 credit hours]
A theoretical and practical examination of the pharmaceutical environment and drug distribution system using administrative pharmacy sciences as a tool for analysis.
Prerequisites: PHPR 4520 with a minimum grade of D-
Term Offered: Spring, Fall

PHPR 6530 Research Methods In Pharmacy Practice
[2 credit hours]
An introduction to research methods and principles used in designing, planning, implementing, analyzing and interpreting research projects in pharmacy practice.
Term Offered: Spring, Fall

PHPR 6550 Management Topics For Clinical Practice
[2 credit hours]
Description of nature of management, basic management concepts and tools and environmental concerns pertinent to pharmacy practice in all of its practice settings.

PHPR 6600 Seminar In Administrative Pharmacy
[1 credit hour]
A critical analysis of current problems in pharmacy practice with individual case presentations.
Term Offered: Spring, Fall

PHPR 6610 Seminar I
[1 credit hour]
Instruction on preparation and presentation of clinical and/or scientific seminars.
Term Offered: Spring, Fall

PHPR 6670 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 include extensive review of the impact of chemical dependency on the healthcare professional, with as focus on their impact to pharmacists.
Term Offered: Summer, Fall

PHPR 6700 Special Topics in Diabetes Care
[2 credit hours]
This course focuses on advanced and special polulation topics in the area of diabetes care and management through discussions, lecture-based teaching and group activities.
Term Offered: Fall

PHPR 6800 Monitoring Therapy
[1 credit hour]
An introduction to medical terminology and procedures with reference to physical exam, patient history, common diagnostic procedures and applications to drug and disease state monitoring.

PHPR 6810 Hospital Pharmacy Administration
[3 credit hours]
An examination of the administrative and supervisory aspects of hospital pharmacy practice. Emphasis is placed on management techniques rather than functions performed.

PHPR 6820 Selected Topics In Hospital Pharmacy
[3 credit hours]
A treatment of contemporary trends which influence the practice of hospital pharmacy such as drug distribution systems. Emphasis is placed upon these concepts in light of the resources present.

PHPR 6830 Advanced Community Pharmacy Administration
[3 credit hours]
An advanced analysis of concepts, practices and issues related to retail pharmacy management.
Term Offered: Fall

PHPR 6840 Selected Topics In Community Pharmacy
[3 credit hours]
Examination of contemporary trends influencing community pharmacy, such as home healthcare and prescription drug programs. Emphasis is placed on the impact of these trends on community pharmacy management.
Term Offered: Fall

PHPR 6850 Product Development Laboratory
[2 credit hours]
A study of various stages of development of pharmaceutical products. The student will develop formulations, using stability data and production technology for three products.
Prerequisites: PHPR 5690 with a minimum grade of D-
Term Offered: Spring

PHPR 6860 Advanced Drug Delivery Lab
[2 credit hours]
This lab course is designed to provide students hands-on experience and improve their practical knowledge in areas of industrial pharmacy and advanced pharmaceutics. This course would introduce students to the wide range of cutting-edge techniques in the pharmaceutical industry.
Term Offered: Spring, Fall

PHPR 6890 M.s. Project In Administrative Pharmacy
[1-4 credit hours]
Development of a practical project in the pharmacy environment on a practicum basis. A written, bound report and oral presentation are required.
Term Offered: Spring, Fall

PHPR 6920 Introductory Pharmacy Practice Experience 5
[1 credit hour]
Third professional year course designed to enhance professional growth through application of skills and knowledge gained in IPPE-1 and IPPE-2 to various areas of pharmacy practice to provide the best possible patient care.
Prerequisites: PHPR 4920 with a minimum grade of D-
Term Offered: Spring, Summer, Fall

PHPR 6940 Early Practice Exposure
[2 credit hours]
Supervised instruction and participation in pharmacy practice at actual practice sites such as community, hospital, managed care, long-term care and nuclear pharmacies.
PHPR 6950 Seminar In Industrial Pharmacy
[1 credit hour]
A seminar course composed of graduate student presentations on their research and special topics as well as outside speakers from both the community and pharmaceutical industry.
Term Offered: Spring, Summer, Fall

PHPR 6960 M.s. Thesis Research In Pharmacy
[1-6 credit hours]
Advanced and in-depth study of an issue pertinent to contemporary pharmacy practice. Part of degree requirement for M.S. in Pharmaceutical Sciences.
Term Offered: Spring, Summer, Fall

PHPR 6980 Special Topics
[1-5 credit hours]
Selected study of topics in Pharmacy Practice. New pharmacy and healthcare strategies are examined in detail.
Term Offered: Spring, Summer, Fall

PHPR 8260 Jurisprudence & Ethics For Pharmacy
[1 credit hour]
Discussion of federal, state and local laws affecting the profession and practice of pharmacy. Ethical principles involved in patient care will be reviewed and applied.

PHPR 8540 Patient Monitoring Principles
[3 credit hours]
Application of didactic geriatric drug therapy principles in a geriatric patient care environment. Emphasis will be placed on geriatric drug monitoring skills.
Prerequisites: PHPR 4140 with a minimum grade of D-
Corequisites: PHPR 8500
Term Offered: Summer

PHPR 8620 Seminar II
[2 credit hours]
Discussion of current topics relating to pharmacy practice.
Prerequisites: PHPR 6610 with a minimum grade of D-

PHPR 8630 Longitudinal Drug Information
[2 credit hours]
Presentation of clinical and/or scientific seminar and completion of in-depth pharmacy practice related paper.
Term Offered: Spring, Summer, Fall

PHPR 8940 Clinical Clerkship
[4 credit hours]
The APPE sequence is a fulltime onsite clinical experience designed to allow students to apply knowledge and skills gained in the didactic and IPPE curriculum. The APPE sequence consists of 9 fulltime (40 hour per week) rotations.
Term Offered: Spring, Summer, Fall

PHPR 8980 Special Topics
[1-5 credit hours]
Selected study of topics in Pharmacy Practice. New Pharmacy and healthcare strategies are examined in detail.
Term Offered: Spring, Summer, Fall