

# Department of Pharmacy Practice

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## Pharmacy Practice

The Department of Pharmacy practice furthers the mission of the School of Pharmacy by striving for excellence in teaching, research, scholarly activity, service, and patient care.

The faculty provide professional educational opportunities for undergraduate, graduate, and postgraduate students and practitioners to enable them to practice pharmaceutical care, adapt to changing professional roles, use new technologies, assume leadership roles in a dynamic health-care environment, and contribute new knowledge to the profession.

## Department of Pharmacy Practice - Lawrence Campus

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Brittany L. Melton, PhD, PharmD, Interim Chair of Pharmacy Practice,  
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## Department of Pharmacy Practice - KUMC Campus

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## Department of Pharmacy Practice - Wichita Campus

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## Courses

### PHPR 508. Hematology/Oncology Pharmacy. 2 Credits.

This course explores many cancer-related topics, including non-pharmacologic treatment modalities, complications of cancer and its treatment, supportive care issues, and precision medicine. It also reviews current cancer screening and prevention guidelines and cancer research.

Various cancers are discussed, such as myeloma, pediatric cancers, and cancers of the bladder, kidneys, ovaries, and testes. Prerequisite: Students must have third year professional standing in the School of Pharmacy and have successfully completed MDCM 626.

### PHPR 509. Medicare Part D. 1 Credits.

This elective course will focus on the understanding and active enrollment of patients into Medicare prescription drug benefit (Part D). Students will mainly focus on the understanding of Medicare eligibility, benefits, formulary requirements, and the administration of benefits. Students will also participate in community outreach which may focus on underserved patients. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Must be a 2nd or 3rd professional year standing in the School of Pharmacy.

### PHPR 510. Medical Terminology Elective. 1 Credits.

This course provides the fundamentals for developing a medical vocabulary. The student will develop the ability to understand, define and utilize medical terminology and abbreviations used in patient care.

### PHPR 515. The Aging Patient. 1 Credits.

This elective course is designed for the learner to explore many of the clinical considerations employed when caring for the aging patient within our health care system. The course will be devoted to exploring perceptions of the older adult patient, learning how the aging process can impact patient care, and identifying the role of the pharmacist in enhancing this care through the 5M's of geriatric care. Prerequisite: Students must have second or third year professional standing in the School of Pharmacy.

### PHPR 517. Medication Safety and Error Prevention. 1 Credits.

This course introduces the student to medication safety and the technology as well as the tools used in error prevention. The student will also learn about adverse drug events including both medication errors and adverse drug reactions in hospital and retail pharmacy settings. Prerequisite: Students must have second or third year professional standing in the School of Pharmacy.

### PHPR 519. Business Planning for Pharmacy. 1 Credits.

This course is designed for students interested in developing a business plan. Most pharmacists will have an opportunity to develop a new service, product line or even start a new business venture in their careers. Students need to know how to create a formal business plan and how to present the plan to decision makers. The course will cover the basic components and rationale of creating a formal a business plan. When finished students will be expected to have created a written business plan and will present their creation to the class. In this manner, students will gain experience in developing an idea into a plan. Prerequisite: Students must be admitted to the school of Pharmacy.

### PHPR 520. Specialty Pharmacy. 1 Credits.

This course will review a variety of diseases including: multiple sclerosis, hepatitis C and autoimmune conditions (psoriasis, ulcerative colitis, etc) and the specialty medications used to treat these conditions. Specialty pharmacy accreditation standards as well as topic discussions reviewing many issues facing the specialty pharmacy industry will be discussed. Guest speakers from different specialty pharmacies in the greater Kansas City area will also present information on their career experiences. Prerequisite: Students must have second or third year professional standing in the School of Pharmacy.

### PHPR 521. Practical Pediatrics. 1 Credits.

This course will expose students to conditions frequently encountered in pediatric care. Students will further develop knowledge and skills necessary to provide appropriate pediatric care in institutional, ambulatory, and community practice settings. The course will involve

interactive lectures followed by case-based learning to promote student application of knowledge to relevant clinical situations. Prerequisite: Students must be admitted to the School of Pharmacy and must be in their 3rd professional year.

**PHPR 522. Pharmacy-Based Travel Health Services. 1 Credits.**

This course reviews pertinent problems traveling entails and services pharmacists can provide for traveling patients. The course will involve interactive lectures followed by case-based learning to promote student application of knowledge to relevant clinical situations. Following the completion of this course, students should be able to recognize the need to establish travel health services, the role of pharmacists in these services, identify the commonly encountered disease states and problems for travelers, and what components comprise travel health by utilizing comprehensive knowledge, skills and resources necessary to establish and deliver successful travel health service. Prerequisite: Students must be admitted to the School of Pharmacy and must be in their 2nd or 3rd professional year. Students must have successfully completed the APhA Pharmacy-Based Immunization Delivery program.

**PHPR 525. Ambulatory Care. 1 Credits.**

This elective course will explore many of the clinical and practical considerations employed when caring for patients in the ambulatory care setting. The course will expose the learner to a variety of topics that impact the pharmacist's role in this practice setting, including collaborative practice agreements, patient case evaluations, communication skill development, and practice evaluation. The course will be facilitated by the ambulatory care practice group at The University of Kansas Health System and will prepare the student for advanced pharmacy practice and residency experiences in the ambulatory care setting. Prerequisite: P2 or P3 standing in the School of Pharmacy.

**PHPR 526. Introduction to Pharmacy Residencies. 1 Credits.**

This course is team-taught by KU clinical faculty with the support of pharmacy residency program directors, residency preceptors, and pharmacy residents. This course is designed to increase knowledge, interest, and confidence amongst students about residency training; identify and develop the skills necessary to apply to residency programs; and increase the number of students obtaining residency positions upon graduation. Prerequisite: Third year professional standing in the School of Pharmacy and instructor consent.

**PHPR 527. Advanced Psychiatric Pharmacy. 1 Credits.**

This elective course is designed to provide learners with the opportunity to gain further clinical and practical considerations when caring for patients with psychiatric disorders and substance use disorders. The course will expose the learner to a variety of topics that impact the pharmacist's role in treating patients with psychiatric disorders. This course will help prepare students who are interested in the field of psychiatry. Prerequisite: Successful completion of PHPR 662.

**PHPR 528. Infectious Diseases Therapeutic Drug Monitoring. 1 Credits.**

This advanced elective course will focus on clinical application of vancomycin, aminoglycoside, and anti-fungal therapeutic drug monitoring utilizing multiple-day real patient cases. The course format will consist of alternating week(s) of online learning via calculation assignments and in-person class debriefing discussions. Prerequisite: P3 Standing in School of Pharmacy.

**PHPR 529. Introduction to the Pharmaceutical Industry. 1 Credits.**

This course introduces the foundations of the pharmaceutical industry, by first introducing the drug development process from investigational molecules to FDA approval and beyond. A variety of departments within the pharmaceutical industry will be explored, including but not limited to:

Clinical development and operations, regulatory affairs, medical affairs and information, market access, sales and commercial operations, and pharmacovigilance. Additionally, pharmaceutical industry fellowships will be introduced, and projects will aid in the development of materials to assist in applications, interviews, and success in PhRMA. Prerequisite: P2 and P3 students enrolled at the KU School of Pharmacy are eligible to enroll in this course.

**PHPR 531. Managed Care Pharmacy Practice. 1 Credits.**

This survey course is motivated, designed and taught by current experts and practicing pharmacists in managed care. The instructors have real-world experience and subject matter expertise. The course is designed to provide students with current information in managed care and expose students to unique, non-traditional pharmacist opportunities. Students will be exposed to the current practice of each pharmacist and explore the spectrum of managed care pharmacy. Clinical and pharmacy management, regulatory and practice topics will be covered in the course. The US health care system is complex. A solid understanding of how managed care pharmacy practice works benefits all stakeholders and especially students. Having completed the course students will be better equipped to practice pharmacy in any professional setting. Prerequisite: P2 standing in the School of Pharmacy or above to take this elective course. Students need to have completed PHPR 619.

**PHPR 541. Foundations of Interprofessional Collaboration I. 0 Credits.**

This TeamSTEPPS Level 1 experience will introduce interprofessional students to the basic concepts of interprofessional collaboration including values and ethics, roles and responsibilities of healthcare team members, and interprofessional communication tools using the evidence-based national curriculum of TeamSTEPPS. Upon completion of this training experience students will be able to 1) demonstrate a work ethic with individuals of other professions to maintain a climate of mutual respect and shared values; 2) define the role of health professions (including your own) within the healthcare system; 3) identify opportunities to seek expertise of health professionals to improve communication and healthcare; and 4) acquire basic TeamSTEPPS communication tools to effectively use with healthcare teams. Graded on a satisfactory/unsatisfactory basis. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Student must have P1 standing in the School of Pharmacy.

**PHPR 542. Foundations of Interprofessional Collaboration II. 0 Credits.**

This TeamSTEPPS Level 2 experience will provide interprofessional students opportunities to apply key knowledge and skills gained in FIPC I, through role-play and case-based learning. Students will apply their knowledge of roles and responsibilities of healthcare team members and interprofessional communication tools and continue learning with, from, and about students from other professions. Upon completion of this training experience students will be able to: 1) engage diverse healthcare professionals who complement one's own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs; 2) choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function; and 3;) engage other health professionals appropriate to the specific care situation--in shared patient-centered problem-solving. Graded on a satisfactory/unsatisfactory basis. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Student must have P2 standing in the School of Pharmacy and successfully completed PHPR 661.

**PHPR 543. Foundations of Interprofessional Collaboration III. 0 Credits.**

This TeamSTEPS Level 3 experience will provide interprofessional students opportunities to demonstrate key knowledge and skills gained in FIPC I and II, through simulation. Students will demonstrate their interprofessional communication skills, including specific opportunities to utilize TeamSTEPS tools. Students will also demonstrate their teamwork abilities by working with interprofessional students during the simulation. Upon completion of this training experience students will be able to: 1) demonstrate communicating effectively with other health professionals about a patient case; 2) exhibit teamwork skills with an interprofessional healthcare team; and 3) utilize key TeamSTEPS tools with an interprofessional healthcare team. Graded on a satisfactory/unsatisfactory basis. Prerequisite: Students must have third year professional standing in the School of Pharmacy. Students must have successfully completed PHPR 663.

**PHPR 601. Advanced Pharmacy Practice Experience 1. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis.

**PHPR 602. Advanced Pharmacy Practice Experience 2. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis.

**PHPR 603. Advanced Pharmacy Practice Experience 3. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in

these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis.

**PHPR 604. Advanced Pharmacy Practice Experience 4. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 605. Advanced Pharmacy Practice Experience 5. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 606. Advanced Pharmacy Practice Experience 6. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 607. Advanced Pharmacy Practice Experience 7. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical

experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 608. Advanced Pharmacy Practice Experience 8. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 609. Advanced Pharmacy Practice Experience 9. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in pharmacy practice experience rotations. These consist of nine, one-month rotations, in various health care settings. Such practice settings may include a variety of acute care, ambulatory care, managed care, hospital and community practice sites. Each rotation provides an academically structured environment that enables the student to gain practical experience under the guidance of a practicing health care professional. The purpose of providing pharmacy students with a pharmacist role model is to foster the development of both professional confidence as well as competence. These practice-based experience settings encourage the student to apply their didactic education to clinical problem solving. Both clinical and distributive pharmacy services will be integrated in these experiences for optimal learning. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 610. Advanced Pharmacy Practice Experience 10. 4 Credits.**

The final year of the Doctor of Pharmacy program is spent participating in nine pharmacy practice experience rotations (PHPR 601-609). PHPR 610 is reserved for students requiring a remedial experiential rotation. This course is graded using an "Excellent", "Satisfactory", or "Unsatisfactory" grading basis. Prerequisite: Students must have fourth year professional standing in the School of Pharmacy.

**PHPR 613. Pharmacoeconomics and Health Outcomes. 2 Credits.**

A course to foster an understanding of economic, financial and outcome principles that drive the demand and supply of medical care in the US. Economic logic behind decisions made by patients, physicians, hospitals, managed care organizations, and governments will be covered. Students completing this course should be able to identify the drivers of the health economy, identify different types of pharmacoeconomic evaluations,

critically analyze pharmacoeconomic and outcome literature, and apply economic principles to pharmaceutical care. Prerequisite: Students must have third year professional standing in the School of Pharmacy.

**PHPR 614. Pharmacy Management. 3 Credits.**

A course designed to provide knowledge and skills to effect efficient and effective pharmacy management. This will include foundations in financial management, inventory control, purchasing, cost-effective drug utilization, quality management, pharmacoeconomics, and human resource management.

**PHPR 618. Hospital and Health-System Pharmacy. 1 Credits.**

Introduction to pharmacy services within health-system pharmacies with an emphasis on medication distribution systems, parenteral and sterile products, clinical pharmacy practice and other services. Prerequisite: Must be accepted to the Pharmacy program.

**PHPR 619. Health Care Systems and Informatics. 3 Credits.**

This course is an introduction to the organization, financing, and delivery of health care services with a focus on the U.S. health care system. Course content addresses the following questions: how do we evaluate the health care sector, where is health care provided, how is health care financed, what are the characteristics of health care providers (individuals and institutions), what influences the performance of the health care sector, and what lies in the future for health care delivery. The purpose of the course is to prepare pharmacy students for non-clinical aspects of their practice sites. Enrollment limited to pharmacy majors. Prerequisite: Students must have first year professional standing in the School of Pharmacy.

**PHPR 620. Ethical, Legal, and Cultural Issues in Patient Care. 2 Credits.**

This course provides an introduction to the fundamentals of law and ethics as they apply to the practice of pharmacy. Course sessions will focus on ethical expectations of the profession, principles and issues in medical and pharmacy ethics, and laws that govern medication dispensing.

**PHPR 621. Pharmacy Law. 2 Credits.**

A course developed to increase students' knowledge and understanding of laws that regulate the pharmacy profession. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Students must be in their third professional year standing in the School of Pharmacy and eligible for APPE rotations at the conclusion of the semester.

**PHPR 624. Pharmacoepidemiology and Public Health. 2 Credits.**

Pharmacy profession has a unique and critical opportunity and responsibility to contribute to the improvement of population health. Public health is a broader discipline that encompasses population health with a variety of other areas, including but not limited to epidemiology, cultural competence, health promotion, disease prevention, and drug safety. Pharmacoepidemiology is the application of the principles of epidemiology to the study of medications and their effects. Considerations are centered on providing beneficial or adverse effects of medication use in large populations and making relevant inferences from essential analytical research designs used in public health. Using population-based-care approach, students will adopt and fulfill public health roles and activities. This course provides a broad introduction to the principles of pharmacoepidemiology and public health with a focus on applications in the field of pharmacy. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Students must have P3 standing in the School of Pharmacy.

**PHPR 628. Research Design Biostatistics. 2 Credits.**

This course reviews study designs and statistical methods commonly used in primary medical literature. In collaboration with other courses

in the curriculum, this course prepares students to interpret and apply primary literature during patient care, collect and analyze data, and maintain clinical competency throughout their professional career in pharmacy. Following completion of this course, students should be able to identify or select appropriate research methods and study designs; collect, summarize and interpret research data; understand basic statistical concepts; identify or select appropriate statistical tests for hypothesis testing; conduct and interpret the results of statistical tests; and evaluate the validity and reliability of published research studies.

**PHPR 629. Research Design and Biostatistics. 2 Credits.**

This course reviews study designs and statistical methods commonly used in primary medical literature. In collaboration with other courses in the curriculum, this course prepares students to interpret and apply primary literature during patient care, collect and analyze data, and maintain clinical competency throughout their professional career in pharmacy. Following completion of this course, students should be able to identify or select appropriate research methods and study designs; collect, summarize and interpret research data; understand basic statistical concepts; identify or select appropriate statistical tests for hypothesis testing; conduct and interpret the results of statistical tests; and evaluate the validity and reliability of published research studies.

**PHPR 630. Drug Information and Literature Evaluation. 1 Credits.**

This course will review the fundamental tools used to identify drug information in primary, secondary and tertiary resources. In addition, students will learn to assess published literature, utilize electronic resources, and learn to formulate a response to drug information questions. Following completion of this course, students will be able to understand the strengths and weaknesses of the drug information resources and to apply drug information skills to clinical practice relevant to patient care. Prerequisite: Successful completion of PHPR 629 and Fifth year standing (P3 student).

**PHPR 635. Problems in Pharmacy Practice. 1-5 Credits.**

A course designed for the study of special topics in pharmacy practice. A research paper will be required. Prerequisite: Consent of instructor.

**PHPR 661. Pharmacotherapy I. 4 Credits.**

A course dealing with the clinical applications of drug knowledge to patient care. Drug interactions and patient counseling techniques will be covered. Over-the-counter medications and herbals will also be a significant portion of the course. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Student must have first year professional standing in the School of Pharmacy and successfully completed PHAR 510, PHAR 512 and concurrent enrollment or successfully completed PHAR 515 and PHAR 517.

**PHPR 662. Pharmacotherapy II. 4 Credits.**

A course dealing with the clinical applications of drug knowledge to patient care. Disease and drug knowledge will be applied to the design and monitoring of therapeutic treatment plans for patients. Prerequisite: Students must be admitted to the school of Pharmacy and have successfully completed PHPR 661 and PHAR 515 and PHAR 517 to enroll in this course.

**PHPR 663. Pharmacotherapy III. 4 Credits.**

A course dealing with the clinical applications of drug knowledge to patient care. Disease and drug knowledge will be applied to the design and monitoring of therapeutic treatment plans for patients. Prerequisite: Students must be admitted to the school of Pharmacy to enroll in this course. Student must have second year professional standing in the School of Pharmacy and successfully completed PHPR 662 and PHAR 520.

**PHPR 664. Pharmacotherapy IV. 4 Credits.**

A course dealing with the clinical applications of drug knowledge to patient care. Disease and drug knowledge will be applied to the design and monitoring of therapeutic treatment plans for patients. Prerequisite: Students must be admitted to the school of Pharmacy and have successfully completed PHPR 663 and PHAR 525 to enroll in this course.

**PHPR 665. Pharmacotherapy V. 4 Credits.**

A course dealing with the clinical applications of drug knowledge to patient care. Disease and drug knowledge will be applied to the design and monitoring of therapeutic treatment plans for patients. Prerequisite: Students must have third year professional standing in the School of Pharmacy. Students must have successfully completed PHAR 530 and PHPR 664.

**PHPR 670. Clinical Assessment. 2 Credits.**

This laboratory course will allow students to develop clinical assessment skills necessary in the provision of pharmaceutical care to patients with a variety of disease states. Students will combine physical assessment skills, patient counseling skills, and pharmacotherapy knowledge and apply this information to patient care related activities in various clinical settings. Students will apply their skills using various practice models that include medication therapy management, collaborative drug therapy management, and interprofessional healthcare teams. The lab component will require students to meet between 1:00 to 5:00 PM on either Monday, Tuesday, or Wednesdays. In addition, there is a required Thursday discussion section. A detailed schedule of lab meeting dates and times will be provided in the syllabus. Prerequisite: Students must be admitted to the School of Pharmacy to enroll in this class. Students must pass PHPR 664 to be eligible to complete PHPR 670.

**PHPR 690. Research in Pharmacy Practice. 1-5 Credits.**

Students will conduct original research in a laboratory, educational, or clinical research setting under the supervision of department faculty. Prerequisite: Students must be admitted to the School of Pharmacy to enroll in this class.

**PHPR 845. Professional Communications and Leadership. 2 Credits.**

A course designed to give the graduate student a practical experience in areas of professional communications such as administrative proposals, grants, letters, memos, poster presentations, and written papers. The course focuses on the different kinds of communications required to relate to other health care professionals. Prerequisite: Consent of instructor.

**PHPR 855. Economic Evaluation of Health Care Programs and Services. 3 Credits.**

The course will provide students with an overview and appraisal of the "state-of-the-art" in the evaluation of health care programs and services (with a special emphasis on pharmaceutical programs, services, and products). The purpose of the course is to provide the student with the tools to conduct economic rather than general evaluation of health care programs and services. There will be some discussion of theoretical concepts, but the major emphasis will be on practical methodological issues in economic evaluation of pharmaceutical programs. The course integrates the perspectives of pharmaceutical and health care technology assessment, managed care, outcomes research, and public health. The main topics covered in the course include: cost, cost-minimization, cost-effectiveness, cost-utility, and cost-benefit analyses.

**PHPR 860. Seminar in Pharmacy Practice. 1 Credits.**

Research reports, reviews, and/or presentations on the current status of various aspects of pharmacy practice. Prerequisite: Consent of instructor.

**PHPR 865. Advanced Institutional Pharmacy Services I. 1.5 Credits.**

Advanced Institutional Pharmacy Services (I) includes activities involving administrative and behavioral science techniques to manage 'the business of pharmacy practice'. Topics and information will be borrowed from the disciplines of business management, accounting, economics, finance, marketing, operations research and applied to the practice of pharmacy. Upon completion of the course, students should be able to explain, understand and apply pharmacy practice management techniques in the following general areas: business management, pharmacy financial management and operations management. Prerequisite: Consent of instructor.

**PHPR 866. Advanced Institutional Pharmacy Services II. 1.5 Credits.**

Advanced Institutional Pharmacy Services (II) includes activities involving administrative and behavioral science techniques to manage 'the business of pharmacy practice'. Topics and information will be borrowed from the disciplines of business management, accounting, economics, finance, marketing, operations research and applied to the practice of pharmacy. Upon completion of the course, students should be able to explain, understand and apply pharmacy practice management techniques in the following general areas: human resource management, clinical services management, specialty pharmacy services and technology management. Prerequisite: Consent of Instructor.

**PHPR 899. Research in Pharmacy Practice. 1-6 Credits.**

Original investigation in the area of pharmacy practice. Prerequisite: Consent of instructor.