

# Pharmacy (PHAR)

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## Courses

### **PHAR 400. Pharmacokinetics. 3 hours.**

Concepts and principles in pharmacokinetics including theories and basis for drug receptor actions, drug absorption, distribution, excretion and biotransformation. Course Information: Prerequisite(s): Credit or concurrent registration in PHAR 322 and credit or concurrent registration in PHAR 332 and credit or concurrent registration in PHYB 302. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 401. Principles of Drug Action and Therapeutics I. 3 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics and toxicology in the drug actions related to the disease states associated with the endocrine, renal, optical and auditory systems. Course Information: Prerequisite(s): PHYB 302 and PHAR 342 and PHAR 400 and second year standing in the Doctor of Pharmacy program. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 402. Principles of Drug Action and Therapeutics II. 4 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics and toxicology in the areas of the autonomic nervous system, cardiology, lipid disorders and hypertension. Course Information: Prerequisite(s): PHYB 302 and PHAR 342 and PHAR 400 and second year standing in the Doctor of Pharmacy program. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 403. Principles of Drug Action and Therapeutics III. 3 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics, and toxicology in the area of infectious disease. Course Information: Prerequisite(s): PHAR 352 and PHAR 401 and PHAR 402 and second year standing in the Doctor of Pharmacy program or consent of the instructor. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 404. Principles of Drug Action and Therapeutics IV. 3 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics, and toxicology in the areas of women's and men's health, respiratory disorders, diabetes and pediatrics. Course Information: Prerequisite(s): PHAR 352 and PHAR 401 and PHAR 402 and second year standing in the Doctor of Pharmacy program or consent of the instructor. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 405. Principles of Drug Action and Therapeutics V. 3 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics and toxicology in the areas of drug abuse, cerebrovascular diseases, parkinson's and epilepsy. Course Information: Prerequisite(s): PHAR 353 and PHAR 401 and PHAR 402 and third year standing in the Doctor of Pharmacy program or consent of the instructor. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 406. Principles of Drug Action and Therapeutics VI. 3 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics, and toxicology in the areas of pain management and psychiatric disorders. Course Information: Prerequisite(s): PHAR 403 and PHAR 404 and third year standing in the Doctor of Pharmacy program or consent of the instructor. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 407. Principles of Drug Action and Therapeutics VII. 4 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics, and toxicology in the areas of transplants, gastrointestinal disorders, body fluids, nutrition, and the impact of drug therapies on a geriatric person. Course Information: Prerequisite(s): PHAR 353 and PHAR 401 and PHAR 402 and third year standing in the Doctor of Pharmacy program or consent of the instructor. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 408. Principles of Drug Action and Therapeutics VIII. 3 hours.**

Integration of medicinal chemistry, pharmacology, pharmacotherapeutics, pharmacokinetics, and toxicology in the areas of bones and joints, hematological disorders, oncology. Course Information: Prerequisite(s): PHAR 353 and PHAR 401 and PHAR 402 and third year standing in the Doctor of Pharmacy program or consent of the instructor. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

### **PHAR 410. Integrated Physiology. 3 hours.**

Reviews and integrates principles introduced in pre-requisite physiology, anatomy and biochemistry courses to human non-pathological and pathological situations. Active learning will promote problem-solving skills. Class Schedule Information: To be properly registered, students must enroll in one Lecture-Discussion and one Laboratory-Discussion.

### **PHAR 411. Introduction Pharmacy Practice. 4 hours.**

Students will be introduced to the practice of pharmacy through a combination of lectures, on-campus introductory pharmacy practice experience (IPPE) simulations, and a week-long shadow experience (off-site) in a pharmacy practice setting. Course Information: Prerequisite(s): Current Illinois Pharmacy Technician License and completed college background check and drug screen and immunization records on file with the college. Class Schedule Information: To be properly registered, students must enroll in one Lecture and one Laboratory-Discussion and one Clinical Practice.

### **PHAR 412. Introductory Pharmacy Practice (IPPE): Community. 2 hours.**

Overview of contemporary pharmacy practice in a community setting. Students will spend the majority of their time off-site at a community pharmacy enabling them to observe and develop the skills necessary in this setting. Course Information: Prerequisite(s): PHAR 411 and PHAR 431 and current Illinois Pharmacy Technician License and must comply with annual college background check and urine drug screen and must have immunization records complete and on file with college and additional site-specific requirements.

**PHAR 413. Introductory Pharmacy Practice Experience (IPPE): Hospital. 2 hours.**

Students will be provided an overview of contemporary pharmacy practice in a hospital setting. Students will spend most of their time engaged in actual (off-site at a hospital pharmacy) or simulated (on-site) hospital pharmacy practice activities. Course Information: Prerequisite(s): PHAR 411 and PHAR 431 and current Illinois Pharmacy Technician License and must comply with annual college background check and urine drug screen and must have immunization records complete and on file with college and additional site-specific requirements.

**PHAR 414. Introductory Pharmacy Practice (IPPE): Introduction to Patient Care. 2 hours.**

Introduction to the skills necessary to provide direct patient care. The goal of this course is to develop the skills necessary for communication of a pharmacotherapeutic recommendation both verbally and in writing.

**PHAR 422. Fundamentals of Drug Action. 4 hours.**

Comprehensive course in chemical mechanisms of drug action. The major objective is for students to develop an understanding of the connection between the properties of chemical compounds and therapeutic action of drugs. Class Schedule Information: To be properly registered, students must enroll in one Lecture and one Discussion.

**PHAR 423. Biomedical Chemistry. 4 hours.**

Provides a strong foundation in clinical and medical biochemistry. Medicinal chemistry applications in clinical enzymology and medical biochemistry, biochemical signal transduction, and selected special topics will be covered.

**PHAR 431. Pharmaceutics I - Pharmaceutics Principles, Drug Delivery Systems, and Calculations. 3 hours.**

Content will initially focus on basic pharmaceutics principles applicable to all drug delivery systems. Solution products including sterile product solutions will also be addressed. Students will also learn and practice basic pharmacy calculations. Class Schedule Information: To be properly registered, students must enroll in one Lecture-Discussion and one Laboratory-Discussion.

**PHAR 432. Pharmaceutics II ? Pharmaceutical Dosage Forms and Calculations. 2 hours.**

Content will focus on basic pharmaceutics principles applicable to suspensions, emulsions, topicals, solids, and other dosage forms will be addressed. Pharmacy calculations relevant to dosage form preparation will also be taught.

**PHAR 433. Pharmaceutics III ? Complex Dosage Forms and Calculations. 2 hours.**

Content will focus on basic pharmaceutics principles applicable to complex dosage forms (e.g., sterile products, extended release products, vaccines, etc.). Pharmacy calculations relevant to dosage form preparation will also be taught.

**PHAR 434. Pharmaceutics IV ? Drug Delivery Systems Design and Calculations Competency. 2 hours.**

Content will focus on dosage form design of sterile and non-sterile dosage forms; compounding; quality control; pharmacist's role in preparation, compounding, and dispensing of dosage forms; and pharmacy calculations, including a competency exam.

**PHAR 435. Pharmacokinetics. 3 hours.**

Students will be introduced to basic principles of pharmacokinetics (e.g., absorption, distribution, biotransformation, excretion), factors influencing these parameters, and the use of common mathematical equations to calculate these parameters. Class Schedule Information: To be properly registered, students must enroll in one Lecture-Discussion and one Laboratory-Discussion.

**PHAR 438. Introduction to Drug Information. 1 hour.**

Content will focus on comparing and contrasting primary, secondary, and tertiary resources, including their relative value and trustworthiness. Students will gain skills necessary to conduct systematic searches and extract information from appropriate sources.

**PHAR 439. Pharmacoepidemiology and Biostatistical Reasoning. 1 hour.**

The principles of biostatistics and epidemiology relevant to pharmacy practice and pharmacoepidemiology (e.g., probability, descriptive and inferential statistics, measures of association and causality, and measures of excess risk) will be reviewed.

**PHAR 440. Evidence-Based Medicine. 2 hours.**

Focuses on the evaluation of clinical research in the literature and its application to patient care decisions. Application and interpretation of statistical methods will be reviewed in the context of study designs.

**PHAR 441. Roles, Environments, and Communications. 3 hours.**

Selected factors that influence pharmacist's practice, societal, and professional expectations, and the importance of effective communications with a variety of patients and professional audiences. Course Information: Prerequisite(s): Acceptance into the Doctor of Pharmacy program.

**PHAR 445. Pharmacy Law. 3 hours.**

Federal and state statutes and regulations pertaining to the licensing of pharmacists, the practice of pharmacy, and distribution of drugs. Case law and the ethical dilemmas relating to the pharmacists' standard of care are included. Course Information: Prerequisite(s): PHAR 342.

**PHAR 455. Drug Information and Statistics. 4 hours.**

Overview of drug information resources and statistics used in healthcare research, including systematic approaches for critical evaluation of the literature and effective communication of information. Course Information: Prerequisite(s): PHAR 441. Class Schedule Information: To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture-Discussion.

**PHAR 461. Pharmacy and the U.S. Healthcare System. 2 hours.**

Introduction to the philosophy and mission of the pharmacy profession, the evolution of practice, and elements of the U.S. Healthcare System.

**PHAR 462. Social and Behavioral Pharmacy. 2 hours.**

Emphasizes the broader social and health systems-related issues that surround and affect patient care provided by pharmacists, nature of disease, illness and self-identity, patient, behavior change, physician prescribing.

**PHAR 463. Personal and Professional Development. 2 hours.**

Imparts knowledge, skills, abilities, behaviors and attitudes necessary for personal and professional competence and development, reinforcing the concepts of self-awareness, leadership, innovation, entrepreneurship, and professionalism.

**PHAR 464. Patient Safety. 1 hour.**

Reviews topics related to patient safety. Prevalence and risk factors for error in healthcare settings, systematic approaches to risk assessment and error investigation, and methods to improve health system safety will be covered.

**PHAR 466. Pharmacy Learning, Advising, Mentoring, and Engagement for Students (PhLAMES) 2. 0 hours.**

Supports and advances the longitudinal professional and character development of students utilizing network-based mentoring and co-curricular activities that complement the didactic and experiential coursework of the professional PharmD curriculum. Course Information: Satisfactory/Unsatisfactory grading only.

**PHAR 468. Pharmacy Learning, Advising, Mentoring, and Engagement for Students (PhLAMES) 4. 0 hours.**

Supports and advances the longitudinal professional and character development of students utilizing network-based mentoring and co-curricular activities that complement the didactic and experiential coursework of the professional PharmD curriculum. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): PHAR 465 and PHAR 466.

**PHAR 470. Pharmacy Learning, Advising, Mentoring, and Engagement fo Students (PhLAMES) 6. 0 hours.**

Supports and advances the longitudinal professional and character development of students utilizing network-based mentoring and co-curricular activities that complement the didactic and experiential coursework of the professional PharmD curriculum. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): PHAR 467 and PHAR 468.

**PHAR 472. Pharmacy Learning, Advising, Mentoring, and Engagement for Students (PhLAMES) 8. 0 hours.**

Supports and advances the longitudinal professional and character development of students utilizing network-based mentoring and co-curricular activities that complement the didactic and experiential coursework of the professional PharmD curriculum. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): PHAR 469 and PHAR 470.

**PHAR 501. Pathophysiology, Drug Action, and Therapeutics (PDAT) 1: Self Care. 3 hours.**

An introductory therapeutics course for the P1 student that addresses self-care principles. Topics will include wellness, prevention, and disease states that are commonly managed with nonprescription medications.

**PHAR 502. Pathophysiology, Drug Action, and Therapeutics (PDAT) 2: GI/Endocrine. 3 hours.**

Covers the pathophysiology, chemistry, pharmacology, and therapeutic use of medications for the treatment of endocrine and gastrointestinal disorders.

**PHAR 503. Pathophysiology, Drug Action, and Therapeutics (PDAT) 3: Renal, Electrolytes, and Nutrition. 3 hours.**

Covers the pathophysiology, chemistry, pharmacology, and therapeutic use of medications for the treatment of renal and electrolyte disorders. Principles of enteral and parenteral nutrition in adult and pediatric patients are also covered.

**PHAR 504. Pathophysiology, Drug Action, and Therapeutics (PDAT) 4: Immunology/Respiratory. 4 hours.**

Covers basic biology of the immune system and its functions, common disorders of the immune system, chemistry and pharmacology of drugs used to treat immune disorders, and the therapeutic interventions for those disorders.

**PHAR 505. Pathophysiology, Drug Action, and Therapeutics (PDAT) 5: Cardiovascular. 4 hours.**

Covers the pathophysiology, chemistry, pharmacology, and therapeutic use of drugs used to treat common cardiovascular conditions. (e.g., thromboembolic disease, hypertension, dyslipidemia, vascular disease, heart failure, and dysrhythmias).

**PHAR 506. Pathophysiology, Drug Action, and Therapeutics (PDAT) 6: Infectious Diseases. 4 hours.**

Students will be exposed to the pathophysiology of various infections and the chemistry, pharmacology, therapeutic utility, and pharmacokinetic principles of systemic antibiotics, antifungals, and antivirals used to treat them.

**PHAR 507. Pathophysiology, Drug Action, and Therapeutics (PDAT) 7: Neurology, Psychiatry, and Pain. 4 hours.**

Covers the pathophysiology, chemistry, pharmacology, and therapeutic use of drugs used to treat various neurologic and psychiatric disorders. Other topics covered include pain management and substance abuse/addiction.

**PHAR 508. Pathophysiology, Drug Action, and Therapeutics (PDAT) 8: Special Topics. 3 hours.**

Covers the pathophysiology, chemistry, pharmacology, and therapeutic use of drugs used to treat osteoarthritis, gout, disorders of the eye, and men's and women's health disorders as well as herbal and dietary supplements.

**PHAR 509. Pathophysiology, Drug Action, and Therapeutics (PDAT) 9: Hematology and Oncology. 3 hours.**

Covers the principles of oncology; pathophysiology of various cancers and hematologic disorders; and the chemistry, pharmacology, and therapeutic use of medications used to treat oncologic and hematologic disorders.

**PHAR 510. Pathophysiology, Drug Action, and Therapeutics (PDAT) 10: Advanced Disease Management. 3 hours.**

Challenges the students with complex multi-morbidity patient cases enabling them to apply pharmacologic, therapeutic, pharmacokinetic, and pharmacodynamics concepts learned in earlier course work.

**PHAR 515. Patient Care: Institutional/Hospital. 2 hours.**

Students will further develop and apply clinical skills in the institutional/health system setting. Students will spend the majority of their time participating in direct patient care at an off-site institutional/hospital setting. Course Information: Prerequisite(s): PHAR 414 and current Illinois Pharmacy Technician License and comply with annual college background check and urine drug screen and Immunization records complete and on file with college and in addition comply with additional site-specific requirements.

**PHAR 516. Patient Care: Ambulatory Care/Community. 2 hours.**

Students will further develop and apply clinical skills in the ambulatory care/community care setting. Students will spend the majority of their time participating in direct patient care at on off-site ambulatory care/community care setting.

**PHAR 520. Applied Pharmaceutics, Pharmacokinetics, and Pharmacogenomics. 3 hours.**

Focuses on clinical application of basic concepts of pharmaceutics, pharmacokinetics, and pharmacogenomics taught earlier in the curriculum. Previous concepts will be reinforced through clinical applications.

**PHAR 565. Pharmacoeconomics and Payment. 2 hours.**

Emphasizes the principles and applications of pharmacoeconomics and various financial and payment models that impact decision-making and resource allocation at the level of the patient, health care provider/ organization, and population.

**PHAR 566. Management and Informatics. 2 hours.**

Reviews the management process and the use of health informatics, resources, and decision-making by managers to achieve organizational goals.

**PHAR 567. Pharmacy Law and Ethics. 3 hours.**

Covers the federal and state laws pertaining to pharmacy practice in Illinois, as well as ethical issues in patient care settings.