

# DOCTOR OF PHARMACY

## THE SCHOOL OF PHARMACY

### Available on the Jackson Campus

Union University's Doctor of Pharmacy program holds candidate status with the Accreditation Council for Pharmacy Education (ACPE, [www.acpe-accredit.org](http://www.acpe-accredit.org)), the national organization that accredits Doctor of Pharmacy programs offered by Colleges and Schools of Pharmacy in the United States and selected non-U.S. sites. Questions about the status of the University's accreditation may be posed to the Dean of the School of Pharmacy's office (731.661.5958) or to ACPE (312.664.3575).

### Mission Statement

The mission of the Union University School of Pharmacy is to develop compassionate, comprehensively trained practitioners who are equipped to meet the immediate and future demands of pharmaceutical science and patient care in an ever changing health care environment.

The vision of the Union University School of Pharmacy is to:

- Promote an excellence-driven academic culture that instills knowledge and advances understanding of biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences
- Provide a Christ-centered environment that focuses on the intellectual, spiritual, and moral development of students in committing themselves to the service and needs of society
- Develop pharmacy students as practitioners who are people-focused in providing optimum care based on evidence and best-practice standards.
- Support an academic environment that fosters the future-directed growth of students and faculty as it relates to education, practice, research, and scholarship initiatives.

### Program Outcomes

- Provide patient care in cooperation with patients, prescribers, and other members of an inter-professional health care team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social, cultural, economic, and professional issues, emerging technologies and evolving biomedical, pharmaceutical, social/behavioral/administrative, and clinical sciences that may impact therapeutic outcomes.
- Manage and use resources of the health care system, in cooperation with patients, prescribers, and other health care providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time-sensitive medication distribution; and to improve therapeutic outcomes of medication use.
- Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at-risk populations, and other members of an inter-professional team of health care providers.

### Graduate Program Admission Requirements

The pre-professional educational design for candidates applying to the School of Pharmacy is based on a minimum of 3 years (90 semester hours) of college-level course work in the areas of basic chemistry, biological and physical sciences, mathematics, information technology, and general education courses in the humanities and behavioral/social sciences. The minimum 90 hours must be distributed as follows:

Course	Semester Hours
Biology or Zoology I & II.....	8
General Chemistry I & II.....	8
Organic Chemistry I & II.....	8
Human Anatomy and Physiology I & II.....	8
Physics I.....	4
Biochemistry I & II.....	6
Microbiology.....	3
Immunology.....	3
Calculus.....	3
Statistics.....	3
Written Composition I & II.....	6
Communications/Speech.....	3
Humanities Electives.....	6
Social Sciences Electives.....	6
General Electives.....	15

Admission to the Union University School of Pharmacy is by committee action, based on the overall record and aptitude of the applicant. A minimum grade point average of 2.75 on a 4.0 scale is required for pre-pharmacy course work with a grade of "C" or higher for each required pre-pharmacy course. The cumulative grade point average, pre-pharmacy and elective course work, must be a minimum of 2.5. All candidates are required to take the Pharmacy College Admission Test (PCAT). A comprehensive score of 40<sup>th</sup> percentile with no individual subject area score below 25<sup>th</sup> percentile is required for admission. Three references along with a writing sample must also be submitted. During the on-site interview, the candidate will be asked to provide a writing sample. Interviews are conducted by invitation only. While there is a priority deadline of March 1 of the year in which admission is desired, applicants are encouraged to apply early, as space is limited, and applications will be reviewed on a rolling basis. The School of Pharmacy admits only one class per year in the Fall Semester.

It is strongly recommended that candidates for the program gain work experience in a pharmacy practice setting prior to application.

### Transfer of Courses

In keeping with the policies and procedures of ACPE accreditation, The School of Pharmacy will accept only transfer credit from an ACPE-accredited professional degree program. Courses must be earned with a grade of B or higher to be considered for transfer.

## Progression of Students

A period of academic probation is defined as the semester immediately following the conclusion of the semester in which the student's academic performance meets any of the conditions for imposition of probation. The student is notified of his/her academic probation status by both email and registered mail. Each semester that the student meets conditions for probation will count as a separate probationary period. Academic probation will be imposed upon a student when the student's academic performance meets any of the following conditions:

1. The cumulative grade point average earned at the conclusion of any semester, including the first semester, is less than 2.33.
2. The grade point average earned for any one semester is less than 2.00.
3. A student receives a grade of "F" in any required course. Additionally, students with outstanding

deficiencies in the professional curriculum (Incomplete or "F") may not attend courses in the next semester without affirmative action by the Academic Standing Committee.

A student will be subject to a dismissal recommendation when any one or more of the following conditions are met:

1. A period of probation is imposed for a second time and the cumulative grade point average is less than 2.33. These probationary periods do not have to be sequential semesters.
2. A period of probation is imposed for a third time, regardless of the cumulative grade point average.
3. A student who receives two or more grades of "F" in required courses, regardless of the cumulative grade point average.

Students may appeal in accordance with procedures detailed under "Academic Grievance Procedures."

## Financial Information

Tuition is \$24,150 per year with \$1,200 lab fees (\$600/semester) for the Doctor of Pharmacy. Full payment for a term (Fall, Winter, Spring, Summer Semesters or other non-regular terms) is expected at the time of registration for classes.

Application Fee .....	\$50
Graduation Fee .....	25
Laptop .....	actual cost*
Liability Insurance .....	32/year
Cap & Gown Rental.....	approximately \$150
Criminal Background Check.....	70
Urine Drug Screen.....	25
Materials Fees.....	approximately \$100/year

Books will cost approximately \$300 per semester for Years 1-3 and are available for purchase from LifeWay Christian Stores.

\*See the Pharmacy Student Handbook for specifications and for possible commercial discounts to UU Pharmacy students.

## Federal Stafford Loan

The Stafford loan application process will require that you:

1. Complete and forward the FAFSA (Free Application for Federal Student Aid) to the federal government with Union University's code of 003528.
2. Complete a Union Financial Aid Application and a Stafford Master Promissory Note and forward to the Union University Student Financial Planning Office.
3. For more information, contact the Student Financial Planning Office at 731-661-5015.

If Federal Stafford loan is not approved and available at the time of registration, the student must assume the cost by paying in full by check, cash, credit card, or FACTS.

## Acceptance Deposits

The Doctor of Pharmacy requires a \$ 1,000 tuition deposit. This deposit is non-refundable if the student elects not to enroll. Applicants accepted on a waiting list basis will receive a full refund if status is not changed to "accepted" by the first day of class.

## Graduation Requirements

- Completion of the coursework for the Doctor of Pharmacy with a minimum cumulative grade point average of 2.33.
- File an application for graduation with the Doctor of Pharmacy program office by February 20 for a May graduation.
- Pay in full the student's account balance with the Business Office.
- Discharge all other obligations (fines, credentials, fees, etc.) at the University.

## Course Requirements of the Doctor of Pharmacy—147 hours

- I. Year I courses: BIO Advanced Human Anatomy & Physiology, I, II; BIO Advanced Gross Anatomy; PHRM 700, 705, 710, 715, 718, 723, 725, 727, 729; IPPE 730, 731.
- II. Year II courses: PHRM 733, 734, 735, 737, 740, 741, 743, 744, 745, 747, 749, 750, 751; IPPE 746, 748.
- III. Year III fall courses: 760, 761, 765, 766, 769, 770, 772. Course syllabi for Winter Year III and Year IV are being developed in full.
- IV. Electives: 12 hours from PHRM Electives or other graduate elective courses as approved by the Dean of the School of Pharmacy.

## Course Descriptions: Biology (BIO)

### 505. Applied Anatomy & Physiology I (3)

An intensive examination of the human body that addresses the normal complex physiological processes of the cell, fluids and electrolytes, acid-base balance, temperature regulation, vascular hemodynamics, mobilization of fluids through the body and lymphatic system, musculoskeletal systems and function of the myocardium. The acquired information will provide the student with a body of knowledge to critically evaluate co-existing conditions of the surgical patient.

### 507. Applied Anatomy & Physiology II (3)

Prerequisite: BIO 221 and 222

A continuation of 505 focusing on the normal complex physiological processes of blood components and coagulation and the respiratory, renal, endocrine, digestive and nervous system

### 510. Advanced Human Gross Anatomy (4)

Prerequisites: BIO 505 & 507, or BIO 221 & 222.

This course will incorporate the dissection of cadavers and viewing of anatomical models in understanding the nervous, endocrine, cardiovascular, respiratory, digestive, and urinary systems of the human body. Additional emphasis is placed on the needs of professional health care personnel.

## Course Descriptions: Pharmacy (PHRM)

### 700. Introduction to Pharmacy (2)

Introduction to the practice of pharmacy for first year students including an introduction to the profession and its evolving opportunities, what a pharmacist is, their role in the various settings of the health care system including drug distribution, drug utilization and the use of technology and supportive personnel.

### 701. Faith and Science in Pharmacy (2)

An examination of the philosophical underpinnings of the Christian worldview as it applies to faith and science in the arena of health care.

### 705. Pharmaceutical Calculations (2)

This course introduces the prescription, prescription notation and abbreviations, basic pharmaceutical calculations, statistics, and the mathematics of chemical kinetics and pharmacokinetics.

### 707. Pain Management (2)

An elective course providing an introduction to pain management, including classifications, pain assessments, pharmacological and non-pharmacological treatment options of a variety of nociceptive and neuropathic pain syndromes (cancer pain, sickle cell disease, diabetic neuropathy, chronic pain syndromes, etc).

### 708. Self-Care/Counseling (2)

An elective course introducing common medical conditions and the corresponding devices that are used in drug delivery and drug monitoring. Also provides an opportunity for the student to learn and demonstrate patient counseling techniques regarding these medications and devices.

### 709. Drugs of Abuse (2)

An elective course examining current knowledge about drugs and substances of abuse or misuse. Emphasis will be given to societal issues and the role a pharmacist can play as a provider of drug facts and information.

### 710. Medical Terminology (2)

To familiarize students with the language of medicine, the course describes how medical terms are built from word parts and teaches correct use in relation to multiple body structures, disease states, and treatment options.

### 715. Principles of Medicinal Chemistry (2)

An introduction to the chemical and physical properties of medicinal agents.

### 718. Non-Prescription Drugs/Counseling (4)

Designed to acquaint students with indications, actions, possible adverse events and contraindications of non-prescription drugs with an emphasis on patient-provider communication. Students will be evaluated on their ability to obtain medical histories and counseling skills.

### 723. Drug Information and Informatics (3)

An introduction to medication information resources such as reference books, databases and clinical trials, and their interpretation and appropriate use in pharmacy practice. Pharmacy informatics principles and technologies are also introduced.

### 725. Medicinal Chemistry I (2)

Prerequisite: PHRM 715

Introduction to the chemical and physical properties of medicinal agents and the relationships of structural properties of drugs to pharmacological properties, absorption, distribution, and metabolism profiles, chemical stability, mechanism of action and clinically significant drug interactions.

### 727. Pharmacology I (3)

Basic concepts of a drug's physical and chemical properties and the principles of drug action. Emphasizes the determinants of drug absorption and distribution, physiological receptors and the nature of the drug-receptor interaction, drug metabolism and elimination, and automatic pharmacology.

### 729. Immunization (1)

Certification course that focuses on the importance of vaccination for preventable disease as well as injection technique. Also discusses how a pharmacist can implement an immunization program into various pharmacy practice settings.

### 730. Introduction to Community Practice (2)

The first of four courses designed to focus on the development of the professional skills required for contemporary pharmacy practice. Students will spend 2 weeks (80 hours) in a community practice setting and gain exposure to the role and responsibilities of the pharmacist in community practice and the importance of the pharmacist in patient care. This course will be repeated for 4 semester hours total.

### 731. Introduction to Institutional Practice (2)

Building on PHRM 730, the second of four courses designed to focus on the development of professional skills required for contemporary pharmacy practice. 80 clock hours required. This course will be repeated for 4 semester hours total.

**733. Pharmaceutics I (4)**

An introduction to the scientific principles and regulatory issues of pharmaceutical dosage form and delivery system design, compounding, and use. An emphasis will be placed on solid dosage forms including powders, tablets, and capsules, as well as the biopharmaceutical principles of bioavailability and bioequivalence. This course includes laboratory experiences in compounding pharmaceutical dosage forms.

**734. Pharmaceutics II (4)**

A continuation of 733 to further the understanding of the scientific principles and regulatory issues of pharmaceutical dosage form and delivery system design, with an emphasis on liquid and semi-solid dosage forms. This course will emphasize oral, topical, transdermal, and parenteral routes of administration. The student will develop competency in compounding, proper aseptic technique, and preparation of sterile products with hands-on training in the laboratory.

**735. Medicinal Chemistry II (2)**

A continuation of 725 to provide the student with an introduction to the chemical and physical properties of medicinal agents through discussion of the relationships of structural properties of drugs to their pharmacological properties, absorption, distribution, metabolism, chemical stability, and mechanisms of action.

**737, 747. Pharmacology II, III (3 each)**

This course addresses pharmacodynamic principles of various drug classes.

Emphasis is on the determinants of drug absorption and distribution, physiological receptors, mechanism of drug action, drug metabolism, elimination, and toxicities.

**739. Clinical Laboratory Medicine (1)**

Basic laboratory tests used to diagnose disease and monitor disease progression and drug therapy. Students will learn to screen and evaluate patients using relevant clinical data.

**740. Pharmacotherapy I (3)**

Drug therapy management of diseases and conditions associated with specific organ systems and will enable students to apply knowledge of pathology, pathophysiology, diagnosis, clinical presentation, classification, goals of therapy, non-pharmacotherapy, pharmacotherapy, considerations for special populations, and patient counseling to optimize patient outcomes. This course addresses medical conditions related to respiratory, gastrointestinal, and endocrinology disorders.

**741. Pharmacotherapy II (3)**

Drug therapy management of diseases and conditions associated with specific organ systems and will enable students to apply knowledge of pathology, pathophysiology, diagnosis, clinical presentation, classification, goals of therapy, non-pharmacotherapy, pharmacotherapy, considerations for special populations, and patient counseling to optimize patient outcomes. This course addresses medical conditions related to cardiology.

**743. Moral Reasoning in Healthcare (2)**

An introduction to ethical theories, focusing on methodology with a survey and comparison of philosophical perspectives on moral issues faced in health care today.

**744. Pharmacy Jurisprudence (2)**

An overview of state and federal pharmacy practice laws that govern technician, pharmacy intern, and pharmacist practice and control the manufacturing, distribution, prescribing, and dispensing of drug products.

**745. Medicinal Chemistry III (2)**

A continuation to provide the student with an introduction to the chemical and physical properties of medicinal agents through discussion of the relationships of structural properties of drugs to their pharmacological properties, absorption, distribution, metabolism, chemical stability, mechanisms of action, and clinically significant drug interactions.

**746. Introduction to Community Pharmacy Practice II (2)**

The 3rd of 4 courses designed to focus on the development of professional skills required for contemporary pharmacy practice. Two weeks/80 contact hours in a community practice setting exposing the student to the role and responsibilities of the community pharmacist and the importance of the pharmacist in patient care.

**748. Introduction to Institutional Pharmacy Practice II (2)**

The 4th of 4 courses designed to focus on the development of professional skills required for contemporary pharmacy practice requiring 2 weeks/80 contact hours in an institutional or specialty practice setting exposing the student to the role and responsibilities of the community pharmacist and the importance of the pharmacist in patient care.

**749. Applied Therapeutics with Simulation (1)**

Introduction to the concepts of pharmaceutical care into the curriculum prior to the advanced pharmacy practices experiences by placing students in the clinical environment.

**750. Pharmacotherapy III (3)**

Drug therapy management of diseases and conditions associated with specific organ systems and will enable students to apply knowledge of pathology, pathophysiology, diagnosis, clinical presentation, classification, goals of therapy, non-pharmacotherapy, pharmacotherapy, considerations for special populations, and patient counseling to optimize patient outcomes. This course addresses medical conditions related to infectious diseases.

**751. Pharmacotherapy IV (3)**

Drug therapy management of diseases and conditions associated with specific organ systems and will enable students to apply knowledge of pathology, pathophysiology, diagnosis, clinical presentation, classification, goals of therapy, non-pharmacotherapy, pharmacotherapy, considerations for special populations, and patient counseling to optimize patient outcomes. This course addresses medical conditions related to neurology, psychiatry and pain management.

**760. Pharmacotherapy V (3)**

Drug therapy management of diseases and conditions associated with specific organ systems and will enable students to apply knowledge of pathology, pathophysiology, diagnosis, clinical presentation, classification, goals of therapy, non-pharmacotherapy, pharmacotherapy, considerations for special populations, and patient counseling to optimize patient outcomes. This course covers critical care/nutrition topics.

**761. Pharmacotherapy VI (3)**

Drug therapy management of diseases and conditions associated with specific organ systems and will enable students to apply knowledge of pathology, pathophysiology, diagnosis, clinical presentation, classification, goals of therapy, non-pharmacotherapy, pharmacotherapy, considerations for special populations, and patient counseling to optimize patient outcomes. This course addresses medical conditions related to oncology, hematology, HIV/AIDS, dermatology, rheumatology, men's and women's health, and toxicology.

**765. Pharmacoeconomics and Health Systems Management (2)**

Concepts and theories of pharmacoeconomics and human resource management in all pharmacy practice settings: planning, implementation, and analysis processes as related to personnel along with fiscal management at the systems, pharmacy and patient level.

**766. Patient Assessment and Interviewing (2)**

Hands-on opportunity for students to apply concepts of physical assessment and interviewing in a clinical laboratory environment. Students will be able to assess response to drug therapy by a combination of physical assessment and provide-patient communication.

**769. Applied Therapeutics with Simulation (1)**

An introduction to the concepts of pharmaceutical care providing direct patient contact.

**770. Pharmacokinetic Principles and Application (4)**

This course introduces pharmacokinetic principles and therapeutic drug monitoring. Students will gain an understanding of the absorption, distribution, metabolism and elimination of drugs, focusing on quantitative aspects of these processes. Pharmacodynamic and clinical implications will be explored, including how to formulate appropriate dosing regimens based on patient specific physiological and environmental factors. Pharmacokinetic variability caused by differences in intrinsic and extrinsic factors will be discussed. Didactic course work will be further emphasized via clinical cases in a laboratory setting.

**772. Literature Evaluation / Landmark Trials (2)**

Building on the principles introduced in PHRM 723, this course trains students in the interpretation and critical analysis of biomedical literature for the purpose of developing evidence-based care recommendations for a given patient or patient population.

**Course descriptions of following are under development by the Pharmacy Faculty:**

**780. Experience I-VI (4 hours each):**

780E. Ambulatory Care

780A. Acute Care

780M. Medically Underserved

780C. Community Pharmacy Practice

780I. Institutional Pharmacy Practice

**781. Experience VII-X (4 hours each) To Be Determined**

788. MPJE/NAPLEX Review (2)

789. Top 200 Seminar (2)

779. External Domestic Study Programs (1-4)

**All courses and application to the program must be defined prior to travel.**

780. Study Abroad Programs (1-4)

**All courses and application to the program must be defined prior to travel.**