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), 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 interdisciplinary 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 compassionate patient-centered care to patients from various socio-economic and cultural backgrounds
• Solve patient-care problems and develop appropriate pharmacotherapy plans via evidence-based decisions
• Successfully manage a patient-centered practice, including the management of personnel
• Provide pharmaceutical care, including the development of disease state management programs
• Provide appropriate health and wellness services to the patients for which they provide care
• Communicate appropriately with patients, their family members and other health professionals
• Function as members of interdisciplinary patient care teams
• Effectively evaluate professional literature and use these findings to improve patient care
• Utilize informatics as appropriate throughout their practices
• Practice in a legal and ethical manner

Graduate Program Admission Requirements

The pre-professional educational design for candidates applying to the School of Pharmacy is based on 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. Pre-pharmacy course work must be distributed as follows:

Course Semesters

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology or Zoology</td>
<td>2</td>
</tr>
<tr>
<td>General Chemistry</td>
<td>2</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>2</td>
</tr>
<tr>
<td>Human Anatomy and Physiology</td>
<td>2</td>
</tr>
<tr>
<td>Physics I</td>
<td>1</td>
</tr>
<tr>
<td>Microbiology</td>
<td>1</td>
</tr>
<tr>
<td>Calculus</td>
<td>1</td>
</tr>
<tr>
<td>Statistics</td>
<td>1</td>
</tr>
<tr>
<td>Written Composition</td>
<td>2</td>
</tr>
<tr>
<td>Communications/Speech</td>
<td>1</td>
</tr>
<tr>
<td>Humanities Electives</td>
<td>2</td>
</tr>
<tr>
<td>Social Sciences Electives</td>
<td>2</td>
</tr>
<tr>
<td>General Electives</td>
<td>1</td>
</tr>
</tbody>
</table>

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). 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. All applications for transfer will be considered on a case-by-case basis.
Progression of Students

Continued enrollment eligibility in the School of Pharmacy is deemed to be satisfactory academic progress for financial aid eligibility since the School's standards are more stringent than Federal requirements.

A period of academic probation includes the semester immediately following successful completion or successful remediation of the deficient course. The student will be notified by the Academic Standing and Promotion Review (ASPR) subcommittee when the academic probationary period ends. 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 and Progression Review subcommittee.

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 “The Appeal Process” on page 26 in the Campus Life Handbook.

Remediation

Didactic

For students who meet defined criteria, The School of Pharmacy will consider allowing remediation and the opportunity to continue progression through the curriculum despite setbacks in didactic courses. Introductory and Advanced Pharmacy Practice Experiences cannot be remediated and must be repeated if the student receives a grade of “F.”

Process for Remediation

The ASPR subcommittee will communicate with the Course Coordinator regarding the feasibility of remediation. Students should not discuss remediation with the Course Coordinator prior to the meeting with ASPR. The student will be notified of an academic deficiency and the need to come before the ASPR subcommittee by phone or email. This meeting will allow the student to explain and clarify the situation. The ASPR subcommittee will make a decision on the student’s case. Depending on the subcommittee decision, the action will be communicated to the student during the meeting or by certified mail and/or email.

Students have the right to appeal the decision made by ASPR as outlined in the Progression policy in the Pharmacy Student Handbook.

Qualifications for Remediation

Remediation is considered if the student has a final percentage average > 59.5%. Students whose average is below 59.5% may be required to repeat the course in its entirety.

- The student's semester grade point average is > 2.0 and overall academic grade point is > 2.33 on a 4 point scale.
- The course coordinator is in agreement and is supportive of the remediation.
- The student must have no violations of the Honor Code or Code of Professionalism.
- The student must not have remediated more than once previously.

In addition to the above noted criteria, students must also acknowledge and agree to the following:

1. The objectives and course content will be determined by the Course Coordinator and may include all original objectives and content or may be a section or specific module of the original course or an alternative course determined by the Course Coordinator. The delivery or format methods for the remedial course will be at the discretion of the course instructor(s) and/or Course Coordinator(s) and may include a variety of options.

2. Course evaluations and assessments are likely to be different from those used in the original course and are up to the discretion of the course instructor or coordinator. Options may include:
   - Single comprehensive examination in which the student must receive a course grade of ≥69.5%. (A score of <69.5% may result in the student having to repeat the original course in its entirety.)
   - Other course instructor-designed assessments with a score of ≥69.5%.

3. Agree to keep all appointments with faculty and meet all deadlines with the understanding that failure to do so could result in failure of the course.

4. Agree to pay the appropriate tuition and fees, with no opportunity for a refund.
5. Failure in this remedial course will count as failure similar to any other course with respect to the student’s official transcript, calculation of the cumulative grade point average, and academic standing.

6. Both course grades will appear on the transcript and will be used in calculation of the student’s cumulative grade point average. Academic standards are in place and failure a second time in the course(s) may have serious consequences and may result in dismissal from the program.

7. Remediation is not a guaranteed right of the students and should be regarded as a privilege, which must be earned by a student through active participation in the educational program as demonstrated by regular class attendance, individual initiative, and utilization of available academic resources. Students should recognize that the need to remediate coursework may delay the timetable for their graduation from the Pharmacy program.

Financial Information

Tuition is $28,990 per year with a $1,600 student services fee ($800/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
Laptop ............................................................... actual cost*
Cap & Gown Purchase ......................... approximately $80

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—150 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, 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: 10 hours from PHRM Electives or other graduate elective courses as approved by the Dean of the School of Pharmacy.

Dual-Degree Program

Union University’s School of Pharmacy and the McAfee School of Business Administration offer a dual degree program. Interested students enrolled in the Doctor of Pharmacy program may dually enroll in the MBA Program. Students will follow the curriculum as outlined below under Graduation Requirements but will also include an additional 24 hours of MBA core coursework. The remaining 12 hours of MBA coursework will be from the Pharm.D. program as approved by the School of Pharmacy: PHRM700; PHRM743; PHRM744; PHRM765; PHRM772; PHRM Elective/Public Health.

Please see the Master of Business Administration section of the Graduate Catalog for MBA core coursework and prerequisite coursework. MBA core coursework can be done on either Union’s Jackson or Germantown campuses or a combination of the two. Please contact the MBA Director (731-661-5341) in the McAfee School of Business for any questions you may have regarding the Pharm.D. MBA Dual Degree Program.
**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 (3)**
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.

702. **Ambulatory Care (2)**
Topics include, but not limited to: anticoagulation, diabetes mellitus, hyperlipidemia and hypertension. An overview of each disease state, current treatment guidelines, landmark clinical trials, and cases will be presented by students in a team-based learning approach.

704. **Applied Drug Information (1)**
A required APPE that provides the formal experiential drug information training of the curriculum. Both project process and end product will be guided and evaluated. Projects, as approved by instructor and preceptor, may satisfy the requirements of this course only.

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.

706. **Advanced Cardiovascular Pharmacotherapy (2)**
An elective providing the student with a more thorough study of cardiology and cardiovascular topics in application of the therapies and techniques covered.

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 (1)**
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.

711. **Health Care and Missions (2)**
The opportunity to participate in a short-term health care mission trip whereby they learn to coordinate drug distribution, make pharmacotherapy recommendations within a limited formulary and provide patient education in a challenging communication environment. Students are trained to provide care in this environment guided by faculty.

712. **Onology (2)**
Elective course to provide students advanced exposure to oncology building on topics in PHRM 761. Students are introduced to different malignant disease states and their common chemotherapeutics regimens, the principles of concern prevent and screening, pharmaceutical care to manage short and long-term side effects from cancer and treatments, and appropriate management and handling of cytotoxic medications.
713. Critical Care (2)
Elective course designed to strengthen student’s knowledge of common critical care topics with emphasis on applications of primary research in various disease states. The course will utilize group discussion of literature including reviews, guidelines, and primary research articles on selected topics in the area of critical care therapeutics. Students will give presentations to extend their knowledge beyond that provided in previous coursework.

714. Neuroscience (2)
An elective pharmacotherapy subspecialty course covering the drug therapy management of neurologic and psychiatric diseases and conditions. The primary purpose is to 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 is designed to develop the student’s ability to apply principles of clinical therapeutics in pharmacy practice, with particular focus given to those disorders which affect the central nervous system and the mind.

716. Principles of Pharmaceutical Sciences (2)
An introduction to the chemical and physical properties of medicinal agents. It will provide a foundational understanding of key concepts in the pharmaceutical sciences in preparation for coursework in medicinal chemistry, pharmacology and pharmaceutics.

717. Advanced Pain Management (2)
Building on PHRM 707, an in-depth overview of pain management, including pain classifications, assessment, pharmacological and non-pharmacological treatment options of a variety of nociceptive and neuropathic pain syndromes.

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.

719. Pharmacology Research (2)
Students will develop an understanding of the principles of toxicology through lectures, class discussion, and developing and giving oral presentations about current toxicological issues within the field of pharmacy.

721. Advanced Pharmacokinetics (2)
Building on foundational principles, students will use analysis software to perform nonlinear regression of pharmacokinetic data. They will evaluate literature to become familiar with FDA guidance documents for clinical pharmacology and biopharmaceutics topics. Discussion will include advanced topics as optimal sampling design, pharmacokinetic clinical trial design, enteropheretic recirculation models and chronopharmacokinetics.

722. Concepts in Toxicology (2)
Principles of toxicology through lectures, discussion, and developing and giving oral presentations about current toxicological issues within the field of pharmacy.

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.

724. Diabetes Management (2)
Provides further exposure to diabetes topics including but not limited to: guidelines, drug selection algorithms, nutrition and insulin dosing, adjustment, and titration. Topics presented by lecture, discussion, and simulation.

726. Pharmacological Basis of Drug Action I (3)
An introduction for first year pharmacy students to pharmacology by examining how drugs affect biological systems. The course will examine drug classes, mechanisms of action and drug toxicities.

728. Chemical Basis of Drug Action I (3)
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 activity, and mechanism of action.

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.

732. Introduction to Medicinal Chemistry Research (2)
In this introductory experience, students will work with faculty to develop skills in computer-aided design of novel drug structures for specific therapeutic targets and in the laboratory to synthesize various structures for pharmacological testing and evaluation.
733. Pharmacetics 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. Pharmacetics 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.

736. Pharmacological and Chemical Basis of Drug Action II (4)
738. Pharmacological and Chemical Basis of Drug Action III (4)
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, elimination, chemical stability, mechanisms of action, clinically significant drug interactions and side effects. This course requires a student to think critically about a drug's structure as it relates to the aforementioned topics.

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.

742. Student Leadership Development (2)
Interdisciplinary focus on fostering the development of leadership (both positional and non-positional) in students and individual commitment to excellence through a series of active learning exercises.

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.

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 pharmacological 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.

753. Social and Behavioral Research Design I (2)
754. Social and Behavioral Research Design II (2)
A two-course sequence designed to provide students an opportunity to develop, conduct, analyze and defend a research project to students & faculty with basic concepts and techniques in social science research methodology, design and analysis and critical evaluation of quantitative and qualitative studies.
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.

767. Applied Therapeutics with Simulation I (1)
768. Applied Therapeutics with Simulation II (1)
An introduction to the concepts of pharmaceutical care providing direct patient contact. Graded pass/fail.

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.

771. Critical Review of Drugs (2)
Designed to strengthen student’s knowledge of common critical care with emphasis on application of primary research in various disease states, the course will utilize group discussion of literature including reviews, guidelines and primary research articles on selected topics in the area of critical care therapeutics. Includes student presentations to extend their knowledge.

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.

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.

785. Special Studies in Pharmacy (1-6)
Group studies which do not appear in the School course offerings. Content will be determined by need.

795. Independent Study in Pharmacy (1-3)
Individual research and study under the guidance of a pharmacy faculty member.

Advanced Pharmacy Practice Experience (APPE)
700. Advanced Institutional Practice (4)
A required course designed to offer the student advanced experience in an institutional pharmacy practice setting. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to accurately and efficiently fill prescription orders; comply with state and federal laws as well as regulations from accrediting agencies; collect patient specific information for the development of an evidence-based treatment plan; respond to drug information questions; communicate effectively (orally and in writing) with patients, caregivers, and other health professionals; and conduct themselves in a professional manner.

710. Advanced Community Practice (4 each)
Two APPEs in this section are required courses, 710A and 710B. Additional courses can be taken as elective courses. All are designed to offer the student advanced experience in various community pharmacy practice settings. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to accurately and efficiently fill prescription orders, collect patient specific information for medication therapy management; respond to drug information questions, communicate effectively (orally and in writing) with patients, caregivers, and other health professionals, and conduct themselves in a professional manner. Course are repeatable for credit.

710A. Advanced Chain Community Practice.
710B. Advanced Independent Community Practice.
720. Ambulatory Care (4)
This Advanced Pharmacy Practice Experience (APPE) is a required course. The course is designed to offer the student advanced experience in an ambulatory care pharmacy practice setting. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to communicate effectively with patients and health care providers, develop evidence-based treatment plans, respond to drug information questions, manage a patient-centered practice, and conduct themselves in a professional manner.

730. Acute Care Pharmacy Practice (4)
One Advanced Pharmacy Practice Experience (APPE) from this section is required. Additional courses in this section may be taken as elective courses. These courses are designed to offer the student advanced experience in acute care pharmacy practice settings. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to accurately and efficiently communicate with patients, caregivers, and health care professionals; collect and analyze patient information for the development of an evidence-based treatment plans in the acute care setting; respond to drug information questions; and conduct themselves in a professional manner.

740. Practice Management (4 each)
These Advanced Pharmacy Practice Experiences (APPEs) are elective courses designed to offer the student advanced experience in the management of pharmacy practice in various settings. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to manage inventory, contracts, reimbursement, information, risk, and human resources; including scheduling, salaries, and performance evaluations.

740A. Institutional Practice Management
740B. Community Practice Management

750. Specialty Pharmacy Practice (4 each)
These Advanced Pharmacy Practice Experiences (APPEs) are elective courses designed to offer the student advanced experience in specialty pharmacy practice settings. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to accurately and efficiently communicate with patients, caregivers, and health care professionals; collect and analyze patient information for the development of an evidence-based treatment plans in the various practice settings, including home-bound patients, residents of nursing homes or other long-term stay facilities; respond to drug information questions; and conduct themselves in a professional manner.

750A. Home Infusion
750B. Long Term Care
750C. Managed Care
750D. Sterile Products
750E. Pharmaceutical Industry/Medical Affairs

760. Drug Information (4 each)
This Advanced Pharmacy Practice Experience (APPE) is an elective course designed to offer the student advanced experience in the provision of drug information. Students will be expected to apply knowledge and skills learned during the experience and previously in the curriculum in order to completely define the specific drug information question, use appropriate resources to efficiently and accurately research drug information questions, respond to drug information questions in a professional manner, communicate effectively with patients and health care providers, and conduct themselves in a professional manner.

770. Pharmacy Research (4 each)
These Advanced Pharmacy Practice Experiences (APPEs) are elective courses designed to offer the student experience in conducting scientific research in a particular discipline. Students interested in completing any of these courses should consult with the course coordinator prior to registration.

770A. Drug Design and Synthesis
770B. Pharmacology Research
770C. Pharmaceutics Research
770D. Pharmacy Administration
770E. Pedagogy