James Harrison School of Pharmacy

RICHARD HANSEN, Dean
PAUL JUNGNICKEL, Associate Dean for Academic and Student Affairs
DAVID RIESE, Associate Dean for Research and Graduate Programs
KAREN MARLOWE, Assistant Dean for Mobile Campus
KIMBERLY BRAXTON-LLOYD, Assistant Dean for Health Services
VISHNU SUPPIRAMANIAM, Assistant Dean for Research and Graduate Programs

THE AUBURN Doctor of Pharmacy (PharmD) degree program is a four-year course of study that requires the completion of the pre-pharmacy curriculum prior to enrollment. The curriculum is designed to facilitate the development of those abilities necessary for entry-level practitioners in various practice settings. Consistent with accreditation standards and guidelines, the curriculum provides an appropriate balance of course work in the following areas: biomedical sciences (basic and clinical); pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; pharmacy practice; and pharmacy practice experience. The goal of the curriculum is to prepare students who are ready to enter practice at the time of graduation and are life-long learners. To accomplish this, the curriculum involves students in continuous patient care responsibilities starting upon entry into the School. Students also participate as active, self-directed learners in interdisciplinary teaching models.

Admission

Course requirements for admission to the James Harrison School of Pharmacy may be satisfied by completing the Pre-Professional Curriculum in the College of Sciences and Mathematics. Any or all of these requirements may be met by transfer of appropriate credit from other institutions.

Admission is limited and is contingent upon available facilities and faculty. To be considered for admission the applicant must have a satisfactory GPA and satisfactory scores on the Pharmacy College Admissions Test (PCAT). A grade of D in any prerequisite course will not be accepted. Students are matriculated into the James Harrison School of Pharmacy only during fall semester. All pre-pharmacy course work must be completed by the end of the summer term before the professional program begins at the start of fall semester.

Applicants must apply to the James Harrison School of Pharmacy through the Pharmacy College Application Service (PharmCAS) and must also complete the School's Supplemental Application. The James Harrison School of Pharmacy admits students using a rolling admissions process and student applications are prioritized in the order in which they are received. The final deadline for receipt of all application materials is March 1. Students who are successful in meeting the school’s initial screening criteria are required to come to the campus for a personal interview in order to be further considered for admission.

The James Harrison School of Pharmacy’s Doctor of Pharmacy Program admits students to two campuses: the main Auburn Campus and the Mobile Campus located at the University of South Alabama. Students may express a preference for a specific campus, but assignments are made based on available space. Admitted students are notified of their campus assignment at the time an offer of admission is made.

Prospective students may obtain application materials and information, which further outlines policies and procedures, from the school’s website at www.pharmacy.auburn.edu or by contacting the Office of Academic and Student Affairs, 2316 Walker Building, Auburn, AL 36849-5501. Applications through PharmCAS are submitted online at http://www.pharmcas.org/.

Admission Requirements

<table>
<thead>
<tr>
<th>Fall</th>
<th>Hours</th>
<th>Spring</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1020 Principles of Biology &amp; BIOL 1021 Principles of Biology Laboratory</td>
<td>4 CHEM 1040 Fundamental Chemistry II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEM 1030 Fundamentals Chemistry I</td>
<td>3 CHEM 1041 Fundamental Chemistry II Laboratory</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEM 1031 Fundamental Chemistry I Laboratory</td>
<td>3 ENGL 1120 English Composition II</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 1100 English Composition I</td>
<td>3 PHIL 1030 Ethics and the Health Sciences</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Literature</td>
<td>3 Additional Humanities</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

1 Prospective students may obtain application materials and information, which further outlines policies and procedures, from the school’s website at www.pharmacy.auburn.edu or by contacting the Office of Academic and Student Affairs, 2316 Walker Building, Auburn, AL 36849-5501. Applications through PharmCAS are submitted online at http://www.pharmcas.org/.
MATH 1610 Calculus I 4 Core Fine Arts 3
PHYS 1500 General Physics I 4 Core History 3
Core History 3 CHEM 2080 Organic Chemistry II 3
CHEM 2070 Organic Chemistry I 3 CHEM 2081 Organic Chemistry II Laboratory 1
CHEM 2071 Organic Chemistry I Laboratory 1 STAT 2510 Statistics for Biological and Health Sciences 3

BIOL 2500 Human Anatomy and Physiology I 4 BIOL 2510 Human Anatomy and Physiology II 4
BIOL 3200 General Microbiology 4 BIOL 3020 Genomic Biology 2 4
BIOL 5600 Mammalian Physiology (Biomedical Physiology) 5 BCHE 3200 Principles of Biochemistry 3
Core Social Science 3 BIOL 3500 Perspectives in Immunology 3
Core Social Science 3

Total Hours: 88

1 Specific prerequisite requirements may be waived by the Associate Dean for Academic and Student Affairs for students who will be entering the Harrison School of Pharmacy with a bachelor’s degree. Applicants should contact the School’s Office of Academic and Student Affairs for additional information.

2 BIOL 3000 can be substituted for BIOL 3020

3 BIOL 5500 can be substituted for BIOL 3500

Doctor of Pharmacy

A copy of the revised Doctor of Pharmacy Curriculum is attached to this proposal.

File: Revised PharmD Curriculum.pdf

The revised curriculum will be phased in over 4 years

During the implementation process, there will be Doctor of Pharmacy students in both the current curriculum and in the revised curriculum.

• Year 1 Pharmacy Curriculum - FALL 2017 (Students in Years 2, 3 & 4 will remain in the current curriculum)
• Year 2 Pharmacy Curriculum - FALL 2018 (Students in Years 3 & 4 will remain in the current curriculum)
• Year 3 Pharmacy Curriculum - FALL 2019 (Students in Year 4 will remain in the current curriculum)
• Year 4 Pharmacy Curriculum - FALL 2020 (All students will be in the revised PharmD curriculum)

NOTE: A new course prefix (PYPD) that is unique to courses in the revised Doctor of Pharmacy Program has been created. Courses in the existing curriculum will continue to use the PYDI prefix (for the most part) while courses in the new curriculum will use the new PYPD prefix (for the most part). This will enable the faculty, staff, students, and other stakeholders to quickly and easily keep track of which courses are associated with the current curriculum and which are associated with the revised curriculum.

Academic Performance Standards

The implementation of all guidelines will be in addition to those existing policies and standards of the University.

To remain in good standing, students are required to achieve a James Harrison School of Pharmacy GPA of at least 2.25. GPAs will be calculated only from professional course work, which is defined as core pharmacy courses approved by the faculty and listed in the Doctor of Pharmacy curriculum.

The James Harrison School of Pharmacy students with semester or cumulative GPAs below 2.25, or who receive Ds and Fs in required courses, may be dismissed from the James Harrison School of Pharmacy or required to undergo a remedial plan of study as directed by the Committee on Academic Requirements and Professionalism. The remedial plan of study may require students to retake courses in which they received grades of less than C. Policies concerning academic progression, probation, and dismissal are specified in the
James Harrison School of Pharmacy’s Academic Performance Standards. A copy of the Standards may be obtained from the James Harrison School of Pharmacy’s Office of Academic and Student Affairs or from the School’s website.

Students must observe pre-requisites and co-requisites stated in the current Auburn University Bulletin. A pre-requisite statement denoting “_year PYDI standing” indicates that the student must have passed all courses in the prior year of the curriculum.

Notes:

• Students are required to file an application with the Alabama State Board of Pharmacy for registration as an intern at the time they are enrolled in the James Harrison School of Pharmacy. Information and intern registration forms may be obtained from the Alabama State Board of Pharmacy, 111 Village Street, Hoover, AL 35242, or at www.albop.com. Students must maintain a valid Alabama Internship License as a condition of continued enrollment in the James Harrison School of Pharmacy.

• Upon entering pharmacy school, and at the beginning of each academic year, students are required to furnish documentation of professional liability insurance, current CPR and First Aid certification, personal medical insurance and up-to-date immunizations. Students who fail to maintain documentation will be dis-enrolled and will not be allowed to re-enroll until current documentation has been provided.

• Pharmacy students are required to attend the Professional Seminar Series.

• Students in the Doctor of Pharmacy program are required to own a laptop computer that meets the school’s specifications. Questions about computer specifications should be directed to the School’s Office of Information Technology. Computer literacy must be demonstrated upon entry to pharmacy school.

• Students are required to adhere to all of the James Harrison School of Pharmacy’s codes, policies, and professional requirements. The School will take disciplinary action against those students who violate such codes, policies, and professional requirements.

• Students will be required to periodically take examinations to assess their ability to integrate the knowledge, skills, and attitudes learned to date. Students may be required to complete remedial course work should their performance be unsatisfactory.

• Consistent with the policies of Auburn University, The James Harrison School of Pharmacy reserves the right to make changes at any time in its academic programs, codes, policies, and professional requirements.

• Students will be notified of their site assignments for the Advanced Practice Experiences at the earliest feasible time, to enable them to make housing arrangements. Rotation sites are located throughout Alabama, western Georgia, the Mississippi Gulf Coast, and the Florida panhandle. Although students may request specific sites, each site has a limited enrollment and students may be assigned to sites they do not request. Students are responsible for procuring housing, including the assessment of its safety and living conditions. Students are also responsible for housing and other living expenses incurred when assigned to rotation sites away from the Auburn campus.

Programs

• Pharmaceutical Sciences - MS (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/pharmacalsciencesmsphd_major)

• Pharmaceutical Sciences - PhD (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/pharmacalsciences_phd)

• Health Outcomes Research and Policy - MS (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/healthoutcomesresearchandpolicy_ms)

• Health Outcomes Research and Policy - PhD (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/healthoutcomesresearchandpolicy_phd)

• Medicinal Chemistry - MS (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/medicinalchemistry_ms)

• Medicinal Chemistry - PhD (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/medicinalchemistry_phd)

• Pharmacology - MS (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/pharmacology_ms)

• Pharmacology - PhD (http://bulletin.auburn.edu/thegraduateschool/graduatedegreesoffered/pharmacology_phd)

Clinical Pharmacy Practice Courses

PYPP 5023 PATIENT ASSESSMENT 1 (1) LAB. 3. SU. Performing a basic physical assessment and obtaining a medical and medication history.

PYPP 5323 PATIENT ASSESSMENT 2 (2) LEC. 1. LAB. 3. Advanced physical assessment and interpretation of findings.

PYPP 5643 PRIMARY AND AMBULATORY CARE 1 (3) DSL. 3. Advanced practice experience in providing pharmaceutical care to patients as they initially access the health care system.
PYPP 5653 PRIMARY AND AMBULATORY CARE 2 (3) LEC. 3. Pr. PYPP 5643. Continuation of PYPP 5643.

Drug Discovery and Development Courses

DRDD 5800 SURVEY OF MULTI-MODALITY MOLECULAR IMAGING (2) LEC. 2. Departmental approval. State-of-the-art survey of molecular imaging techniques that are available and their use to monitor the progression of various human diseases.

DRDD 6800 SURVEY OF MULTI-MODALITY MOLECULAR IMAGING (2) LEC. 2. Departmental approval. State-of-the-art survey of molecular imaging techniques that are available and their use to monitor the progression of various human diseases.

DRDD 7000 INTRODUCTION TO GRANT WRITING (3) LEC. 3. Departmental approval. Course will train students to prepare NIH RO1 grant applications. Students will prepare mock applications on topics of their choosing.

DRDD 7010 PHARMACOKINETICS (4) LEC. 4. Departmental approval. Pharmacokinetic and pharmacodynamic principles and methods used to study the absorption, distribution, metabolism and excretion of drugs.

DRDD 7020 SCIENCE AND TECHNOLOGY OF TABLETING (2) LEC. 2. Pr. (PYPS 7030 or DRDD 7030) or Departmental approval. Formulation, compression, coating and evaluation of tablets.

DRDD 7021 SCIENCE AND TECHNOLOGY OF TABLETING (2) LAB. 6. Pr. (PYPS 7020 or DRDD 7020). Actual formulation, compression, coating and evaluation of tablets.

DRDD 7030 DRUG PRODUCTS AND BIOPHARM (4) LEC. 4. Departmental approval. Formulation, evaluation, and use of various pharmaceutical dosage forms including biopharmaceutical aspects.

DRDD 7040 PHYSICAL PHARMACY (4) LEC. 4. Departmental approval. Application of physical chemical principles to dosage form design and evaluation.

DRDD 7050 NOVEL DOSAGE FORMS (3) LEC. 3. Pr. PYPS 7030 or DRDD 7030 or Departmental approval. Theoretical basis and design of controlled release and site specific drug delivery systems.

DRDD 7060 FORMULATION AND DELIVERY OF PEPTIDE/PROTEIN DRUGS (3) LEC. 3. Pr. PYPS 7030 or DRDD 7030 or Departmental approval. Formulation and delivery problems unique to peptide/protein pharmaceuticals and strategies to overcome such problems.


DRDD 7080 ADVANCED BIOPHARMACEUTICS (3) LEC. 3. Pr. PYPS 7010 or DRDD 7010. The mathematical and pharmacokinetic relationships between physical and chemical properties of a drug and its dosage form and biological effects.

DRDD 7110 STABILITY KINETICS OF PHARMACEUTICALS (3) LEC. 3. Pr. PYPS 7030 or DRDD 7030 or Departmental approval. Principles of chemical kinetics as applied to the unique stability problems of the various pharmaceutical dosage forms.

DRDD 7230 ADVANCED MEDICINAL CHEMISTRY I (3) LEC. 3. Departmental approval. Explanation of the principles of Medicinal Chemistry progressing to qualitative and quantitative descriptions of the synthesis, influence of physical and chemical properties of chemical substances on biological activity and biodisposition.

DRDD 7240 ADVANCED MEDICINAL CHEMISTRY II (3) LEC. 3. Pr. PYPS 7230. Departmental approval. Advanced study of organic medicinal agents featuring organic synthesis, chemical and pharmacological properties and current literature topics.

DRDD 7250 DRUG ACTION AND DESIGN (3) LEC. 3. Pr. (PYPS 7230 or DRDD 7230) and (PYPS 7240 or DRDD 7240). Modern molecular modeling methods with emphasis on computer-aided drug design, quantitative structure activity relationships and combinatorial chemistry.

DRDD 7260 SEPARATION SCIENCE (4) LEC. 4. Departmental approval. A survey of modern separation science with emphasis on analytical scale techniques including as chromatography, liquid chromatography and electrokinetic separations.

DRDD 7270 MASS SPECTROMETRY OF ORGANIC COMPOUNDS (4) LEC. 4. Departmental approval. A survey of modern techniques in as spectrometry with emphasis on fragmentation chemistry and structure education.
DRDD 7290 NEUROPHARMACOLOGY OF DRUG ABUSE (2) LEC. 2. Departmental approval. An in-depth study of drugs of abuse, including mechanisms of action, pharmacokinetics, addiction, physical dependence and the effects of drug use during pregnancy. Substance abuse treatment strategies will also be discussed.

DRDD 7300 NEUROPHARMACOLOGY (3) LEC. 3. Neurochemical mechanisms related to the pharmacological actions of medicinal agents affecting the central nervous system.

DRDD 7310 PSYCHOPHARMACOLOGY I (3) LEC. 3. Discussions on anxiety, depression and related disorders.

DRDD 7320 PSYCHOPHARMACOLOGY II (3) LEC. 3. Discussions on schizophrenia, Alzheimer's disease, experimental methods and animal models of disorders.

DRDD 7330 PHARMACOLOGY RESEARCH METHODS (3) LEC. 1. LAB. 9. Experimental design, research methods and data analysis in pharmacology.

DRDD 7340 ORGAN SYSTEMS PHARMACOLOGY I (3) LEC. 3. The course will evaluate the basic principles and rationale for current and novel pharmacological therapeutics for various disease states.

DRDD 7350 ORGAN SYSTEMS PHARMACOLOGY II (3) LEC. 3. The course will evaluate the mechanism of action and rationale for current and novel pharmacological therapeutics for various disease states.

DRDD 7360 CELLULAR & MOLECULAR PHARMACOLOGY & TOXICOLOGY I (3) LEC. 3. Cellular biology course integrated with pharmaceutical sciences for the study of pharmacologically related mechanisms at the molecular and cellular levels.

DRDD 7370 CELLULAR & MOLECULAR PHARMACOLOGY & TOXICOLOGY II (3) LEC. 3. Pr. PYPS 7360 or DRDD 7360. Cellular biology course integrated with pharmaceutical sciences for the study of pharmacologically related mechanisms at the molecular and cellular levels. This is a continuation of PYPS 7360/DRDD 7360.

DRDD 7500 METABOLISM AND DISPOSITION XENOBIOTICS (2) LEC. 2. Portals of entry, absorption, distribution and elimination of drugs and xenobiotics. Metabolic mechanisms relevant to chemical structure and principles of pharmacokinetics will be emphasized.

DRDD 7510 ENVIRONMENTAL TOXICOLOGY (3) LEC. 3. Mechanisms of action of agricultural and industrial chemicals, drugs, radiation, metals, gases, air particulates, food additives, plant and food poisons in the environment.

DRDD 7600 HETERO CYCLIC MEDICINAL CHEMISTRY (3) LEC. 3. Pr. CHEM 7220. Departmental approval. A survey of chemical nature of heterocyclic moieties of medicinal substances with emphasis on methods of synthesis of medicinally important compounds containing a heterocyclic ring.

DRDD 7930 DIRECTED STUDIES IN PHARMACAL SCIENCES (1-3) LEC. Departmental approval. Selected laboratory research topics in the pharmaceutical sciences. Course may be repeated for a maximum of 98 credit hours.

DRDD 7950 SEMINAR (1) SEM. 1. SU. 1 CR; may be repeated multiple times for credit. Course may be repeated for a maximum of 6 credit hours.

DRDD 7960 IND. At least 6 credits each with a minimum grade of B in DRDD 7000-7999 Selected study topics in the pharmaceutical sciences. Departmental approval and 6 hours of 7000-level courses. Course may be repeated for a maximum of 6 credit hours.

DRDD 7980 NON-THESIS RESEARCH (1-3) RES. Open only to Non-Thesis MS Students in Pharmaceutical Sciences Medicinal Chemistry, Pharmaceutics or Pharmacology Options. Non-thesis research project, to be determined by faculty advisor and student's graduate advisory committee. Course may be repeated for a maximum of 14 credit hours.

DRDD 7990 RESEARCH AND THESIS (1-10) MST. Research And Thesis. Course may be repeated with change in topics.

DRDD 8930 DIRECTED STUDIES IN PHARMACAL SCIENCES (1-3) LEC. Departmental approval. Selected laboratory research topics in the pharmaceutical sciences. Course may be repeated for a maximum of 6 credit hours.

DRDD 8950 SEMINAR (1) SEM. 1. SU. 1 CR; may be repeated multiple times for credit. Course may be repeated for a maximum of 10 credit hours.

DRDD 8960 DIRECTED READINGS IN PHARMACAL SCIENCES (1-3) IND. Pr. At least 6 credits each with a minimum grade of B in DRDD 7000-7999. Selected study topics in the pharmaceutical sciences. Course may be repeated for a maximum of 6 credit hours.
DRDD 8990 RESEARCH AND DISSERTATION (1-10) DSR. Research for doctoral students. Course may be repeated with change in topics.

Health Outcomes Research Pol Courses

HORP 7510 HEALTH SERVICES DELIVERY AND EVALUATION (3) LEC. 3. Enrollment in the MS or PhD Program in Pharmaceutical Science with Health Outcomes Research and Policy Option or Departmental approval. Introduction to basic methods and frameworks for undertaking research and program evaluation within health services organizations and systems.

HORP 7520 SOCIAL AND BEHAVIORAL THEORY IN HEALTH (3) LEC. 3. Enrollment in the MS or PhD Program in Pharmaceutical Science with Health Outcomes Research and Policy Option of behavior and intervention used in practice and research to evaluate changes in health, humanistic, and economic outcomes among patients.

HORP 7530 PHARMACEUTICAL ECONOMICS, OUTCOMES, AND POLICY (3) LEC. 3. Enrollment in the MS or PhD Program in Pharmaceutical Science with Health Outcomes Research and Policy Option or Departmental approval. The graduate-level course is intended to introduce students to concepts relevant to pharmaceutical outcomes, economics, and policy. The course provides foundational knowledge surrounding healthcare.

HORP 7540 PHARMACOEPIDEMIOLOGY: METHODS AND APPLICATIONS (3) LEC. 3. Enrollment in the MS or PhD Program in Pharmaceutical Science with Health Outcomes Research and Policy Option or Departmental approval. STAT 6110 or equivalent SAS training. The course covers topics in pharmacoepidemiology focusing on the methods and applications of analyzing large healthcare claims databases and electronic medical records.

HORP 7720 MOTIVATIONAL INTERVIEWING FOR HEALTH BEHAVIORS (3) LEC. 2, IND/LEC. 1. Enrollment in the MS or PhD Program in Pharmaceutical Science with Health Outcomes Research and Policy Option or Departmental approval. Concepts, current research applications, and intervention development training in motivational interviewing for health behavior change interventions.

HORP 7810 HOSPITAL PHARMACY ADMIN (2) LEC. 2. Administrative and policy-making procedures. Provides understanding of socioeconomic aspects of hospital pharmacy practice and competence in selected administrative skills.

HORP 7820 RESEARCH METHODS AND DESIGN HEALTH SCIENCE I (2) LEC. 2. Departmental approval. Application of scientific methods in health care.

HORP 7830 RESEARCH METHODS IN THE HEALTH SCIENCES (3) LEC. 3. Pr. PYPC 7820 or HORP 7820. Application of the principles and concepts obtained in PYPC 7820/HORP 7820.

HORP 7840 MEDICATION INFORMATION SYSTEMS (3) LEC. 3. Health system informatics theories and methodologies. Demonstration of how information reduces uncertainty in health-care decision-making.

HORP 7860 THE PHARMACIST’S ROLE IN IMPROVING PATIENT ADHERENCE (3) LEC. 3. Pr. PYPC 7820. Theories and methodologies involved in adherence to medication regimens.

HORP 7870 SOCIAL, BEHAVIORAL, AND ADMINISTRATIVE ASPECTS OF PHARMACY PRACTICE (3) LEC. 3. Theories and applications in social, behavioral, and administrative aspects of pharmacy practice and medication use systems.

HORP 7950 SEMINAR (1) SEM. 1. SU. 1 CR; may be repeated multiple times for credit. Required of all Pharmaceutical Science MS students with Health Outcomes Research and Policy Option. Course may be repeated for a maximum of 6 credit hours.

HORP 7960 SPECIAL PROBLEMS IN PHARMACY CARE SYSTEMS (2-3) LEC. Departmental approval. Special problems. Course may be repeated for a maximum of 6 credit hours.

HORP 7980 NON-THESIS RESEARCH (1-3) RES. SU. Pharmaceutical Sciences Non-Thesis MS Graduate Student and approval from the Graduate Program Coordinator. The specific research topic and its credit hour(s) will be decided by the student's research advisor, in collaboration with the student and the student's research advisory committee. Course may be repeated for a maximum of 4 credit hours.

HORP 7990 RESEARCH AND THESIS (1-10) MST. Credit hours to be arranged. Course may be repeated with change in topics.

HORP 8950 SEMINAR (1) SEM. 1. SU. 1 CR; may be repeated multiple times for credit. Required of all Pharmaceutical Science PhD students with Health Outcomes Research and Policy Option. Course may be repeated for a maximum of 10 credit hours.
HORP 8960 SPECIAL PROBLEMS IN PHARMACY CARE SYSTEMS (1-3) LEC. Departmental approval. Credit hours to be arranged. Course may be repeated for a maximum of 6 credit hours.

HORP 8990 RESEARCH AND DISSERTATION (1-10) DSR. Credit hours to be arranged. Course may be repeated with change in topics.

Interdept Pharmacy Courses

PYDI 4980 INTRODUCTION TO UNDERGRADUATE RESEARCH IN PHARMACY (1-3) IND. SU. Departmental approval. Individual problems course. Students will work under the direction of a faculty member on some problem of mutual interest. Course may be repeated for a maximum of 6 credit hours.

PYDI 9000/9006 DRUGS AND DISEASES I (5) LEC. 5. Integrated study of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Fall.

PYDI 9010/9016 PATIENT CENTERED SKILLS (2) LEC. 2. Development of methods for developing positive, therapeutic relationships with patients through the application of communications skills (empathy, assertiveness training, effective listening, etc.) and other behavioral interventions. Fall.

PYDI 9020 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE I (2) LAB. 6. This course integrates the skills necessary for the provision of pharmaceutical care. Source material introduces and integrates knowledge and skills focusing on patient assessment and communication. Fall.

PYDI 9100/9106 DRUGS AND DISEASES II (5) LEC. 5. Pr. PYDI 9000 or PYDI 9006 or PYDI 5000 or PYDI 5000. Presents, in an integrated manner, pathophysiology and chemical, pharmacological and biotechnology principles to explain the action of drugs; continuation of PYDI 9000/PYDI9006. Spring.

PYDI 9110/9116 PHARMACY LAW AND ETHICS (2) LEC. 2. Basic legal and ethical principles of pharmaceutical care and their effect on the patient drug use process. Spring.

PYDI 9120 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE II (2) LAB. 6. Pr. PYDI 9020 or PYDI 5020. This course integrates pharmaceutical care skills. Source material introduces and integrates knowledge and skills focusing on pharmaceutical calculations, communication, physical assessment and use of clinical literature. Spring.

PYDI 9136 DRUG LITERATURE EVALUATION (2) DSL. 2. Development of the ability to effectively and efficiently and efficiently retrieve drug information and critically evaluate and interpret studies published in medical and pharmaceutical literature. Spring.

PYDI 9140/9146 PRINCIPLES OF PHARMACOKINETICS (3) LEC. 3. Pr. PYDI 9000 or PYDI 9006 or PYDI 5000. To prepare students to use pharmacokinetic information and measurements to evaluate drug therapy and recommend appropriate dosing strategies for drug administration and monitoring. Spring.

PYDI 9200/9206 DRUGS AND DISEASES III (8) LEC. 8. Pr. (PYDI 9100 or PYDI 9106 or PYDI 5100) and (PYDI 9140 or PYDI 9146 or PYDI 5140). Presentation in an integrated manner of and pathophysiology chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Continuation of PYDI 9100/PYDI 9106. Fall.

PYDI 9210/9216 PHARMACY PRACTICE DEVELOPMENT, MANAGEMENT, AND EVALUATION I (3) LEC. 3. Overview of the development, management, and evaluation of systems that support the provision of pharmaceutical care for patients in multiple health systems. Fall.

PYDI 9220 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE III (2) LAB. 6. Pr. PYDI 9120 or PYDI 5120. Integrates the provision of pharmaceutical care and pharmacy-specific skills related to drug-related problems. Supportive skills for the pharmaceutical sciences and other integrated skills are a major emphasis. Fall.

PYDI 9230/9236 DRUG PRODUCTS I (3) LEC. 3. Pr. (PYDI 9100 or PYDI 5100 or PYDI 9106 or PYDI 5106) and (PYDI 9120 or PYDI 5120). Physical-chemical and biopharmaceutical principles and technologies used in the preparation of pharmaceutical dosage forms and novel drug delivery systems. Fall.

PYDI 9290 PHARMACY PRACTICE EXPERIENCE III (2) PRA. 2. SU. Pr. PYDI 9190 or PYDI 5190. Third in six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients.
PYDI 9300/9306 DRUGS AND DISEASES IV (8) LEC. 8. Pr. PYDI 9200 or PYDI 9206 or PYDI 5200. Presentation, in an integrated manner, of pathophysiology and chemical, pharmacological, biotechnology, and pharmacokinetic principles to explain the action of drugs. Continuation of PYDI 9200/PYDI 9206. Spring.

PYDI 9310/9316 PHARMACY PRACTICE DEVELOPMENT, MANAGEMENT, AND EVALUATION II (3) LEC. 3. Pr. PYDI 9210 or PYDI 9216 or PYPC 5210. An overview of the development, management, and evaluation of systems that support the provision of pharmaceutical care for patients in multiple health systems. Continuation of PYDI 9210/PYDI 9216. Spring.

PYDI 9320 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE IV (2) LAB. 6. Pr. PYDI 9220 or PYDI 5220. Continuation of PYDI 9220. Spring.

PYDI 9330/9336 DRUG PRODUCTS II (3) LEC. 3. Pr. (PYDI 9230 or PYDI 9236 or PYPS 5230) and PYDI 9200 or PYDI 5200 or PYDI 9206 and PYDI 9220 or PYDI 5220. Physical-chemical and biopharmaceutical principles and technologies used in the preparation of pharmaceutical dosage forms and novel drug delivery systems. Continuation of PYDI 9230/PYDI 9236. Spring.

PYDI 9390 PHARMACY PRACTICE EXPERIENCE IV (2) PRA. 2. SU. Pr. PYDI 9290. Fourth in a six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients. Spring.

PYDI 9420 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE V (2) LAB. 6. Continuation of PYDI 9320 Fall.

PYDI 9470 INTEGRATED PHARMACOTHERAPY I (6) RCT. 6. Application of the basic, clinical, and socio-behavioral sciences to identifying, preventing and solving health and drug related problems. Fall.

PYDI 9480 INTEGRATED PHARMACOTHERAPY II (6) RCT. 6. Continuation of PYDI 9470. Fall.

PYDI 9510 GERIATRIC CARE (2) LEC. 25. This course focuses on environmental, psychological, and physiological characteristics that are unique to, or more prevalent among, geriatric patients. Students will be required to evaluate how pharmacists can impact care through interprofessional teams while optimizing the patient's quality of life.

PYDI 9520 CONTEMPORARY ASPECTS OF PHARMACY PRACTICE VI (2) LAB. 6. Pr. PYDI 9420 or PYDI 5420. Continuation of PYDI 9420.

PYDI 9570 INTEGRATED PHARMACOTHERAPY III (6) RCT. 6. Pr. PYDI 5480 or PYDI 9480. Continuation of PYDI 9480. Spring.

PYDI 9580 INTEGRATED PHARMACOTHERAPY IV (6) RCT. 6. Pr. PYDI 5480 or PYDI 9480. Continuation of PYDI 9570. Spring

PYDI 9690 PROFESSIONAL SEMINAR (1) PRA. 2. SU. Student will demonstrate the ability to evaluate and synthesize pertinent literature, and effectively communicate pharmacotherapy-related material in one platform (seminar) presentation. Spring.

PYDI 9700 ADVANCED PRACTICE EXPERIENCE PROFESSIONAL COMMUNICATION (0) PRA. SU. Students will synthesize pertinent literature, and communicate pharmacotherapy-related material in patient, journal club, in-service, and written presentations. Spring.


PYDI 9720/9726 MOTIVATIONAL INTERVIEWING (2) LEC. 2. Pr. PYDI 9010 or PYDI 9016 or PYPC 5010 or PYPC 5016. Basic and advanced training and exploration of motivational interviewing. Fall

PYDI 9730/9736 DRUGS IN PREGNANCY (2) LEC. 2. Medication issues related to pregnancy and lactation. Fall.

PYDI 9740/9746 PEDIATRIC PHARMACOTHERAPY (2) LEC. 2. Medication issues related to the pediatric population. Fall.

PYDI 9750/9756 ANTITHROMBOTIC/THROMBOLYTIC THERAPY (2) LEC. 2. Provides the student with a working knowledge of both basic and advanced pharmacotherapeutics issues related to antithrombotic and thrombolytic therapy. Spring.

PYDI 9770/9776 WOMEN'S HEALTH ISSUES (2) LEC. 2. Understanding factors that affect women's premature morbidity and mortality.

PYDI 9780/9786 ACUTE CARE PHARMACOTHERAPY (2) LEC. 2. This course is designed to orient the pharmacy student to the acute care environment and familiarize them with patient disease states and pharmacotherapy associated with the acutely ill patient. Spring.
PYDI 9790/9796 PSYCHIATRIC PHARMACOTHERAPY (2) LEC. 2. To expose pharmacy students to psychiatry and to develop a working knowledge of both basic and advanced pharmacotherapeutic issues related to psychopharmacology. Spring.

PYDI 9800 SURVEY OF MULTI-MODALITY MOLECULAR IMAGING FOR PHARM.D. (2) LEC. 2. State-of-the-art survey of molecular imaging techniques and clinical imaging modalities that are available and their use to monitor the progression of various human diseases.

PYDI 9810/9816 EVIDENCE-BASED PHARMACOTHERAPY (2) LEC. 2. Student pharmacists will become more proficient at literature evaluation and application of evidence-based pharmacotherapy/medicine to patient care. Spring.

PYDI 9960/9966 SPECIAL PROBLEMS IN PHARMACY (1-3) IND. Independent study of problems related to pharmacy under the direction of a faculty member. Departmental approval. Fall. Spring. Course may be repeated for a maximum of 6 credit hours.

PYDI 9970/9976 SPECIAL TOPICS IN PHARMACY (2) LEC. 2. Instruction and discussion in a selected current topic in Pharmacy. Fall, Spring. Course may be repeated for a maximum of 4 credit hours.

Pharmacy PharmD Courses

PYPD 9000 ORIENTATION (1) WSP. 12.5. This one week course introduces the expectations for a student in the Harrison School of Pharmacy’s Practice Ready Curriculum. The course introduces aspects of the role of the pharmacist in healthcare including team member, interprofessional practice, and continual professional development.

PYPD 9100 PHARMACY PRACTICE EXPERIENCE I (2) PRA. 2. SU. First year standing (P1) within Doctor of Pharmacy Program. First of a six-course sequence of introductory practice experience in which the concept of pharmaceutical care is introduced by the provision of basic care to community based patients.

PYPD 9110 PHARMACY PRACTICE EXPERIENCE II (2) PRA. 2. SU. Pr. (PYPD 9100 or PYDI 9090 or PYDI 5090). Second of a six-course sequence of introductory practice experience in which the concept of pharmaceutical care is introduced by the provision of basic care to community-based patients.

PYPD 9120 PHARMACY PRACTICE EXPERIENCE III (2) PRA. 2. SU. Pr. (PYPD 9110 or PYDI 9190 or PYDI 5190). Third in six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients.

PYPD 9130 PHARMACY PRACTICE EXPERIENCE IV (2) PRA. 2. SU. Pr. (PYPD 9120 or PYDI 9290). Fourth in a six-course sequence of introductory practice experience in which pharmaceutical care is provided to moderately complex community based patients.

PYPD 9140 PHARMACY PRACTICE EXPERIENCE V (2) PRA. 2. SU. Pr. PYDI 9330 or PYDI 9130. Fifth in a six-course sequence of introductory practice experiences in which pharmaceutical care is provided to increasingly complex community based patients along with patient care team management responsibilities.

PYPD 9150 PHARMACY PRACTICE EXPERIENCE VI (2) PRA. 2. SU. Pr. (PYDI 9140 or PYDI 9490 or PYDI 5490). Sixth in a six-course sequence of introductory practice experiences in which pharmaceutical care is provided to increasingly complex community based patients along with patient care team management responsibilities.

PYPD 9200/9206 INTEGRATED LEARNING EXPERIENCE I (6) LEC. 12.5. Students will acquire foundational knowledge of Hypertension, Diabetes Mellitus, Obesity Management, Diarrhea and Constipation, Fluid and Electrolytes, and Hypersensitivity. These disease states will provide context for students to develop knowledge and skills of various aspects of the Patient Care Process.

PYPD 9210/9216 INTEGRATED LEARNING EXPERIENCE II (6) LEC. 12.5. Admission into the Doctor of Pharmacy Program or Permission of the Associate Dean for Academic and Student Affairs. This six week course integrates content from biomedical sciences, pharmaceutical sciences, social / behavioral / administrative sciences, and clinical sciences and focuses on the collection and assessment of information, communication, patient education/public health, distribution, and management.

PYPD 9220/9226 INTEGRATED LEARNING EXPERIENCE III (6) LEC. 12.5. Pr. PYPD 9200 or PYPD 9206 and PYPD 9210 or PYPD 9216. This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences and focuses on the collection and assessment of information, communication, drug information / evidence-based medicine, and distribution.
PYPD 9230/9236 INTEGRATED LEARNING EXPERIENCE IV (6) LEC. 12.5. Pr. (PYPD 9200 or PYPD 9206) and (PYPD 9210 or PYPD 9216). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences and focuses on the collection and assessment information, communication, drug information / evidence-based medicine, planning, and distribution.

PYPD 9240/9246 INTEGRATED LEARNING EXPERIENCE V (6) LEC. 12.5. Pr. (PYPD 9220 or PYPD 9226) and (PYPD 9230 or PYPD 9236). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences and focuses on assessment, collecting information, drug information / evidence-based medicine, and distribution.

PYPD 9250/9256 INTEGRATED LEARNING EXPERIENCE VI (6) LEC. 12.5. Pr. (PYPD 9220 or PYPD 9226) and (PYPD 9230 or PYPD 9236). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences and focuses on advocacy, assessment, collecting information, drug information / evidence-based medicine, and distribution. May count either PYPD 9250 or PYPD 9256.

PYPD 9260/9266 INTEGRATED LEARNING EXPERIENCE VII (6) LEC. 12.5. Pr. (PYPD 9240 or PYPD 9246) and (PYPD 9250 or PYPD 9256). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences with the primary focus on assessment, collecting information, communication, leadership, and patient education / public health.

PYPD 9270/9276 INTEGRATED LEARNING EXPERIENCE VIII (6) LEC. 12.5. Pr. (PYPD 9240 or PYPD 9246) and (PYPD 9250 or PYPD 9256). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences with the primary focus on assessment, collecting information, communication, planning, and management.

PYPD 9280/9286 INTEGRATED LEARNING EXPERIENCE IX (6) LEC. 12.5. Pr. (PYPD 9260 or PYPD 9266) and (PYPD 9270 or PYPD 9276). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences with the primary focus on communication, drug information / evidence-based medicine, distribution, and planning.

PYPD 9290/9296 INTEGRATED LEARNING EXPERIENCE X (6) LEC. 12.5. Pr. (PYPD 9260 or PYPD 9266) and (PYPD 9270 or PYPD 9276). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences with the primary focus on the collection and assessment of information, distribution, planning, and professionalism.

PYPD 9300/9306 INTEGRATED LEARNING EXPERIENCE XI (6) LEC. 12.5. Pr. (PYPD 9280 or PYPD 9286) and (PYPD 9290 or PYPD 9296). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences with the primary focus on assessment, communication, planning, patient education / public health, and team skills.

PYPD 9310/9316 INTEGRATED LEARNING EXPERIENCE XII (6) LEC. 12.5. Pr. (PYPD 9280 or PYPD 9286) and (PYPD 9290 or PYPD 9296). This six week course integrates biomedical sciences, pharmaceutical sciences, social/behavioral/administrative sciences, and clinical sciences with the primary focus on the preparation of learners for the Advanced Pharmacy Practice Experience.

PYPD 9320/9326 LONGITUDINAL EXPERIENCE I (3) LEC. 2.5. This semester-long course focuses on navigating the health care system. Learners will explore key issues related to patient education / public health, communication, assessment, advocacy, and management.

PYPD 9330/9336 LONGITUDINAL EXPERIENCE II (3) LEC. 2.5. Pr. (PYPD 9320 or PYPD 9326). This semester-long course focuses on promoting patient health and wellness. Learners will explore key issues related to patient education / public health, assessment, team skills, communication, and advocacy.

PYPD 9340/9346 LONGITUDINAL EXPERIENCE III (3) LEC. 2.5. Pr. (PYPD 9330 or PYPD 9336). This semester-long course focuses on promoting pharmacy services. Learners will explore key issues related to advocacy, communication, drug information / evidence-based medicine, management, and patient education / public health.

PYPD 9350/9356 LONGITUDINAL EXPERIENCE IV (3) LEC. 2.5. Pr. PYPD 9340 or PYPD 9346. This semester-long course focuses on program development and continuous quality improvement. Learners will explore key issues related to advocacy, drug information / evidence-based medicine, patient education / public health, leadership, and management.

PYPD 9360/9366 LONGITUDINAL EXPERIENCE V (3) LEC. 2.5. Pr. PYPD 9350 or PYPD 9356. This semester-long course focuses on personnel and formulary management. Learners will explore key issues related to assessment, communication, leadership, management, planning, and team skills.
PYPD 9370/9376 LONGITUDINAL EXPERIENCE VI (3) LEC. 2.5. Pr. PYPD 9360 or PYPD 9366. This semester-long course focuses on providing learners with learning opportunities related to their personal and professional goals. Learners will explore key issues related to drug information / evidence-based medicine, leadership, professionalism, and professional development.

PYPD 9400/9406 WORKSHOP I (1) LEC. 12.5. In this workshop, will explore the use of drug information resources and related to the use of drug information resources and population levels.

PYPD 9410/9416 WORKSHOP II (1) LEC. 12.5. Pr. PYPD 9400 or PYPD 9406. This is a focused, intensive, one week workshop where students will acquire theoretical and practical knowledge related to a contemporary issue in the field of pharmacy. In this workshop learners will examine the Pharmacists’ Patient Care Process.

PYPD 9420/9426 WORKSHOP III (1) LEC. 12.5. Pr. PYPD 9410 or PYPD 9416. This is a focused, intensive, one week workshop where students will acquire theoretical and practical knowledge related to a contemporary issue in the field of pharmacy. In this workshop learners will develop skills and knowledge pertaining to immunizations.

PYPD 9430/9436 WORKSHOP IV (1) LEC. 12.5. Pr. PYPD 9420 or PYPD 9426. This is a focused, intensive, one week workshop where students will acquire theoretical and practical knowledge related to pharmacokinetics and its application to therapeutically important areas such as drug delivery.

PYPD 9440/9446 WORKSHOP V (1) LEC. 12.5. Pr. PYPD 9430 or PYPD 9436. This is a focused, intensive, one week workshop where students will acquire theoretical and practical knowledge related to pharmacoeconomics and its application to the economic evaluation of pharmaceuticals and the overall healthcare system.

PYPD 9450/9456 WORKSHOP VI (1) LEC. 12.5. Pr. PYPD 9440 or PYPD 9446. In this focused, intensive, one week workshop students will review and update their patient care skills, determine their own long term career goals, and develop a plan for achieving those goals.

PYPD 9610 COMMUNITY PHARMACEUTICAL CARE (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Advanced Practice Experience in a community pharmacy practice setting that provides pharmaceutical care services such as disease management and other advanced patient care activities. Fall, Spring, Summer.

PYPD 9620 MEDICINE I (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Advanced practice experience in providing Inpatient Pharmaceutical Care. Fall, Spring, Summer.

PYPD 9630 MEDICINE II - SELECTIVE (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Advanced practice experience in providing Inpatient Pharmaceutical Care. Additional experience beyond PYDI 9620. Fall, Spring, Summer.

PYPD 9640 PRIMARY/AMBULATORY CARE I (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Advanced practice experience in providing care to patients as they initially access the health care system. Fall, Spring, Summer.

PYPD 9650 SUMMATIVE EXPERIENCE (3) IND. 37.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. This culminating course will require a comprehensive review and application of knowledge gained throughout the first 3 years of the PharmD Curriculum. Through case, problem and project based learning, learners will apply didactic and clinical knowledge/skills in a self-directed manner.

PYPD 9670 PRACTICE ELECTIVE I (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Elective experience in an advanced practice experience setting in which the student establishes personal learning goals and responsibilities. Fall, Spring, Summer.

PYPD 9680 PRACTICE ELECTIVE II (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Elective experience in an advanced practice experience setting in which the student establishes personal learning goals and responsibilities. Fall, Spring, Summer.

PYPD 9690 DRUG INFORMATION-SELECTIVE (5) PRA. 62.5. Status of a 4th Year Doctor of Pharmacy Student (P4) or Permission of the Associate Dean for Academic and Student Affairs. Advanced practice experience in providing drug information services to health care providers. Fall, Spring, Summer.
PYPD 9700 SUMMATIVE EXPERIENCE (3) IND. 37.5. This culminating course will require a comprehensive review and application of knowledge gained throughout the first 3 years of the PharmD Curriculum. Through case, problem and project based learning, learners will apply didactic and clinical knowledge/skills in a self-directed manner.