

PHARMACY (PRX)

PRX 151 Pre-StEPP (0 credits)

Pharmacy students will receive on-campus services that support academic success and professional development. Students will begin to understand and apply cooperative teamwork principles and practices and adopt exemplary personal and professional ethical standards.

PRX 251 Pre-StEPP Year Two (0 credits)

Pharmacy students will receive on-campus services that support academic success and professional development. Students will begin to understand and apply cooperative teamwork principles and practices and adopt exemplary personal and professional ethical standards.

PRX 301 Extrinsic Summative AR I (1 credit)

Extrinsic Summative Assessment and Reassessments (ESAR) are authentic assessments which provide relevance and purpose to learning. Activities and assessments are designed to reveal information to students about how well they retain, transfer, and apply knowledge and skills learned in the first professional year with the goal of competence in real world settings. Students are provided the opportunity for individualized learning support and reassessment if necessary.

PRX 302 Found of Pharmacy Practice (2 credits)

This course provides an introduction to the goals and expectations for student pharmacists entering the professional phase of the PharmD program. The foundations of the profession will be introduced, including emotional intelligence, team building, professional attire/attitudes/ behaviors, relationship building, professional and personal wellness, the history of pharmacy, leadership, professionalism and professional identity formation. This course serves as a foundation for the required co-curricular portion of the doctor of pharmacy curriculum.

PRX 305 Foundations of Clinical Immuno (3 credits)

This module provides a foundation in human immune system components as applied to vaccine design, immunotherapies and biologics. Discussion will emphasize combating infectious disease, cancer, autoimmunity, and allergic responses.

Attributes: CCC: Mission: Ethics Social Justice, Undergraduate

PRX 316 Practice Skills/Prof Behavior1 (4 credits)

This module introduces the skills necessary for patient engagement and interaction, emphasis is on the role of the pharmacist, Pharmacists' Patient Care Process, communication (verbal and written), professionalism and ethics.

PRX 325 Medication Use Systems 1 (3 credits)

This module provides an introduction to the principles and processes involved in medication acquisition/procurement, storage, prescribing/ ordering, dispensing, including handling of controlled substances, utilization of medication safety information, documentation, health insurance payments systems and health informatics. The overall goal is for student pharmacist to demonstrate knowledge of these processes and to be able to process a non-complicated prescription for payment in both community and institutional pharmacy environments.

PRX 330 Foundations of Biomedical Sci (4 credits)

A foundation in the structure, properties, biological functions, bioenergetics, and metabolic fate of macromolecules essential to life (i.e. proteins, lipids, carbohydrates, and nucleic acids), the impact of molecular genetics on these processes; also, application of these concepts to human disease, drug therapy and rational drug design strategies.

PRX 340 Foundations of Pharm Sci 1 (3 credits)

This module provides an introduction to medicinal chemistry, pharmaceuticals, compounding and pharmaceutical calculations. Medicinal chemistry focuses on the in vitro and in vivo chemical basis of drug action including their physico-chemical properties, structure activity relationships and receptor binding and metabolism. Pharmaceuticals focuses on the principles and applications of dosage forms. Mathematical skills to accurately prepare prescriptions, including extemporaneously compounded dosage forms are included.

PRX 345 Foundations of Pharm Sci 2 (3 credits)

This module continues with an understanding of the principles and applications of physico-chemical properties of drugs for safe and effective drug delivery. Pharmacodynamics and basic pharmacokinetics with calculations are emphasized in order to provide a thorough understanding of the mechanisms (absorption, distribution, metabolism and elimination) involved in therapeutic and adverse drug actions. Selection of appropriate dosage forms that minimize adverse effects/ toxicity are covered.

PRX 350 iPSDT 1:DiseasePrev & SelfCare (3 credits)

This module is the first of the 14 iPSDT modules which integrate the application of the pharmacy sciences, including medicinal chemistry, pharmacology, and pharmaceuticals specific disease states and therapeutic decision-making. This module focuses on the principles that underlie disease pathogenesis and self-care pharmacotherapy.

PRX 355 iPSDT 2: Cardiovascular 1 (3 credits)

The Cardiovascular 1 module is first of two modules focused on the cardiovascular system. It focuses on the application of the pharmacy sciences, including medicinal chemistry, pharmacology and pharmaceuticals to cardiovascular diseases and therapeutic decision-making. The module encompasses the epidemiology, etiology, pathophysiology, prevention, pharmacologic and nonpharmacologic treatment and self-care of cardiovascular medical conditions. Included are complementary and alternative therapies.

PRX 365 iPSDT 3: Pulmonary (3 credits)

The Pulmonary module focuses on the application of the pharmacy sciences, including medicinal chemistry, pharmacology, and pharmaceuticals to pulmonary diseases and therapeutic decision-making. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and nonpharmacologic treatment, and self-care of pulmonary medical conditions. Included are complementary and alternative therapies.

PRX 380 IPPE-1: Service Learning 1 (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. The focus of this course is a preceptor-directed experience in service learning and community pharmacy practice. Students will be assigned a service learning and community pharmacy site. Students will observe and be engaged in the following foundational components under preceptor supervision: medication use system, patient and healthcare practitioner communications, patient counseling, self-care triage, and patient care activities. Students will also be involved in professional pharmacy organizations, community service, and advocacy.

PRX 390 IPPE-2: Service Learning 2 (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. This course is a continuation of PRX380 and is a preceptor-directed experience in service learning and community pharmacy practice. Students will be assigned a service learning and community pharmacy site. Students will demonstrate competency in the following components under preceptor supervision: medication use system, patient and healthcare practitioner communications, patient counseling, self-care triage, and patient care activities. Students will also be involved in professional pharmacy organizations, community service, and advocacy.

PRX 401 Extrinsic Summative AR 2 (1 credit)

Extrinsic Summative Assessment and Reassessments (ESAR) are authentic assessments which provide relevance and purpose to learning. Activities and assessments are designed to reveal information to students about how well they retain, transfer, and apply knowledge and skills learned through the first and second professional years with the goal of competence in real world settings. Students are provided the opportunity for individualized learning support and reassessment if necessary.

PRX 410 Health Eq and Pt Care in Pharm (3 credits)

Integrated Approaches to Advancing Health Equity and Patient Care in Pharmacy is a course that explores healthcare disparities, social justice, diversity, and cultural humility, preparing students to address inequities in healthcare. Students will examine the historical and contemporary oppression of marginalized populations, engage in self-reflection on personal biases and privileges, and develop advocacy skills for promoting equity in patient care and professional practice. By the end of the course, students will be equipped to foster an inclusive and equitable environment and work towards improvements that address the unique needs of diverse patient populations.

Attributes: CCC: Diversity

PRX 415 Fndtns Healthcare Policy/Law (3 credits)

This module provides an introduction to the principles of pharmacy law and ethics, healthcare policies, medication payer functions, economic theories and their application to pharmacoeconomics, drug selection, and health coverage laws.

Attributes: CCC: Mission: Ethics Social Justice, GEP: Ethics Intensive, Undergraduate

PRX 418 Pharmacy-Based Immu Delivery (1 credit)

This course module includes a certificate training program (e.g. American Pharmacists Association: Pharmacy-Based Immunization Delivery) for preparing pharmacists to provide immunization services to patients across the life span. Educational materials are based on national educational standards for immunization training from the Centers for Disease Control and Prevention.

PRX 420 Practice Skills/Prof Behavior2 (3 credits)

This module enhances the skills necessary for patient engagement and interactions. Emphasis is on the role of the pharmacist, Pharmacist's Patient Care Process, communication (verbal and written), and professionalism and ethics.

PRX 425 Medication Use Systems 2 (3 credits)

This modular course provides thorough coverage of medication acquisition/procurement, storage, prescribing/ordering, and dispensing processes in addition to applications of non-sterile and sterile compounding techniques, inventory control, adverse drug events, and hazardous waste handling and disposal processes. The overall goal is for student pharmacists to demonstrate appropriate utilization and documentation of medication procurement, distribution and dispensing in both community and institutional pharmacy environments.

PRX 430 Health Info Retrieval & Eval (3 credits)

This module provides the foundational knowledge and skills related to identifying types of literature and health information sources and determining the appropriateness of the source and the content for purposes of providing information to healthcare providers and a lay audience. An understanding of the hierarchy of health information sources and literature will allow the selection of appropriate sources and the development of written and verbal health information sources.

PRX 435 Lit Eval & Evidence-Based Med (3 credits)

This module builds upon the foundations established in RX430, and focuses on primary literature and its application to populations as well as to specific patient situations or questions. The main emphasis is the selection and comprehensive critical evaluation of clinical trials and the appropriate use of available results to develop recommendations for population-based scenarios or patient-specific scenarios. In addition, the literature will be utilized to develop professional oral presentations with written deliverables.

Prerequisites: ENG 101 or WR 101

Attributes: CCC: Writing Intensive, Undergraduate, GEP: Writing Intensive

PRX 440 Foundations of Pharm Sci 3 (3 credits)

This module further elaborates the application of physico-chemical properties of drugs to ensure safe, effective and targeted drug delivery. The impact of cutting edge biotechnology, pharmacogenic/pharmacogenomic parameters, (and manufacturing, specialized compounding) to personalized medication delivery and minimize adverse effects/toxicity will be covered.

PRX 452 iPSDT 4: Cardiovascular 2 (3 credits)

The Cardiovascular 2 module is the second of two modules focused on the cardiovascular system. It focuses on the application of the pharmacy sciences, including medicinal chemistry, pharmacology and pharmaceuticals to cardiovascular diseases and therapeutic decision-making. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and nonpharmacologic treatment, and self-care of medical conditions over the life cycle. Included are complementary and alternative therapies.

PRX 454 iPSDT 5: Renal/Hepatic (3 credits)

The renal/hepatic module of the iPSDT series focuses on the application of pharmacy sciences, including medicinal chemistry, pharmacology, and pharmaceuticals, to disease states and therapeutic decision-making in relation to renal and hepatic function. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and nonpharmacologic treatment, and self care.

PRX 455 iPSDT 6: Endocrine/Reproductiv (3 credits)

The endocrine and reproductive systems module of the iPSDT series focuses on the application of the pharmacy sciences, including medicinal chemistry, pharmacology, and pharmaceuticals to disease states and therapeutic decision-making. This series encompasses the prevention and management of uncomplicated to complex medical conditions over the life cycle. Included are self-care pharmacotherapy, as well as natural products, dietary supplements, and alternative and complementary therapies. As part of this course, students will complete a training certificate program, such as American Pharmacists Association's The Pharmacist and Patient-Centered Diabetes Care Certificate.

PRX 457 iPSDT 7: Infectious Disease 1 (3 credits)

This is the first of three modules focusing on infectious diseases. The overarching objectives are to associate proper antibiotics (type and dosage) to bacterial infections and to identify main side effects and drug-drug interactions. This module will also allow the student to apply and integrate their knowledge by associating therapeutic dosages, side effects and resistance to antibiotics and mechanisms of actions at the pharmacological level.

PRX 480 IPPE 3: Adv Comm/Ambul Care (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. The focus of this course is a preceptor directed experience in advanced community pharmacy practice and ambulatory care. Students will observe and be engaged in the following components under an assigned community/ambulatory preceptor: operations, patient and healthcare practitioner communications, patient counseling, self-care triage, and patient care activities including medication therapy management and immunizations.

PRX 490 IPPE 4: Institutional Pharmacy (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. The focus of this course is directed student exposure to pharmacist practice roles in the institutional pharmacy practice setting. Students will observe and be engaged in the following components under the supervision of an assigned institutional pharmacist preceptor: the medication use system, operations, patient and/or healthcare practitioner communications.

PRX 501 Extrinsic Summative AR 3 (1 credit)

Extrinsic Summative Assessment and Reassessments (ESAR) are authentic assessments which provide relevance and purpose to learning. Activities and assessments are designed to reveal information to students about how well they retain, transfer, and apply knowledge and skills learned through the first, second, and third professional years with the goal of competence in real world settings. Students are provided the opportunity for individualized learning support and reassessment if necessary.

PRX 510 Applied Prof Behavior & Comm (2 credits)

This module focuses on complex communications with patients/caregivers and health care providers through both written and verbal skills using both formal and informal methods. Emphasis will be placed on professionalism, ethics, and leadership.

PRX 520 Innovation & Entrepreneurship (1 credit)

This course is designed for student pharmacists to gain business acumen and pursue potential entrepreneurial endeavors. Additionally, this course will motivate student pharmacists to explore entrepreneurial opportunities and innovations in their profession.

PRX 530 iPSDT 8: Infectious Disease 2 (3 credits)

This is the second of three modules focusing on infectious diseases. The overarching objectives are to associate proper antimicrobial uses for various infections. Similar to module 1, this module will also focus on medication side effects and drug-drug interactions. Students will apply and integrate their knowledge by associating therapeutic dosages, side effects, pharmacokinetic and pharmacodynamic principles, and resistance to antimicrobial mechanisms of actions at the pharmacological level.

PRX 534 iPSDT 9: Central Nervous Sys 1 (3 credits)

This the first of two modules focused on the central nervous system. It emphasizes the application of the pharmacy sciences, including medicinal chemistry, pharmacology and pharmaceuticals to central nervous system diseases and therapeutic decision-making. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and non-pharmacologic treatment, and self-care of medical conditions over the life cycle. Included are complementary and alternative therapies.

PRX 538 iPSDT 10: Central Nervous Sys2 (3 credits)

This module focuses on the epidemiology, pathophysiology, and clinical presentation of selected mood disorders, anxiety disorders, thought/psychotic disorders, neurodevelopment disorders, sleep-wake disorders, and substance-related/addictive disorders. The pharmacology and relevant pharmacokinetics, indications, dosage and administration, and adverse effects of the available drugs and drug classes used in the treatment of these disorders will also be addressed. Students will also design evidence-based treatment and monitoring plans based on current treatment guidelines and literature.

PRX 543 iPSDT 11: GI/Nutrition (3 credits)

The Gastrointestinal/Nutrition module of the iPDST series focuses on the application of pharmacy sciences, including medicinal chemistry, pharmacology, and pharmaceuticals, to disease states and therapeutic decision-making in relation to gastrointestinal and nutritional disorders. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and non-pharmacologic treatment, and self care.

PRX 545 iPSDT 12: Imm/Muskel/Skin/Eye (3 credits)

The immune/musculoskeletal/skin/eye module of the iPSDT series focuses on the application of pharmacy sciences, including medicinal chemistry, pharmacology, and pharmaceuticals, to disease states and therapeutic decision-making in relation to diseases involving the immune system, musculoskeletal system, eye, and skin. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and non-pharmacologic treatment, and self care.

PRX 553 iPSDT 13: Hematology/Oncology (3 credits)

This module focuses on the hematologic and oncologic processes with application of the pharmacy sciences, including medicinal chemistry, pharmacology and pharmaceuticals to specific diseases and therapeutic decision-making. The module encompasses the etiology, pathophysiology, prevention, pharmacologic and nonpharmacologic treatment, and self-care of medical conditions over the life cycle. Included are complementary, and alternative therapies as well as supportive care treatment options.

PRX 555 iPSDT 14: Infectious Disease 3 (3 credits)

This is the third of three modules focusing on infectious diseases. The overarching objectives are to associate proper antimicrobial use for various infections. Similar to modules 1 and 2, this module will also focus on medication side effects and drug-drug interactions. Students will apply and integrate their knowledge by associating therapeutic dosages, side effects, pharmacokinetic and pharmacodynamic principles, and resistance to antimicrobials to mechanisms of actions at the pharmacological level.

PRX 570 Integrated Practice 1 (3 credits)

This is the first of two modules designed to simulate real life patient scenarios with multiple disease states and patient care settings. This module will also focus on the various skills including, but not limited to, professionalism, communication, health information retrieval, physical assessment, calculation, application of pharmacy sciences, diseases and therapeutic knowledge, and intra- and inter-professional team dynamics. Additionally, various pharmacy practice management considerations, such as regulatory, public health, formulary management, and ethics will be integrated throughout the course activities. Students will serve as peer educators through a series of seminar presentations.

PRX 575 Integrated Practice 2 (3 credits)

This is the second of two modules designed to simulate real life patient scenarios with multiple disease states and patient care settings. This module will also focus on the various skills including, but not limited to, professionalism, communication, health information retrieval, physical assessment, calculation, application of pharmacy sciences, diseases and therapeutic knowledge, and intra- and interprofessional team dynamics. Additionally, various pharmacy practice management considerations, such as regulatory, public health, formulary management, and ethics will be integrated throughout the course activities. Students will serve as peer educators through a series of seminar presentations.

PRX 580 IPPE 5: Adv Institutional Pharm (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. The focus of this course is directed student exposure to patient care responsibilities of institutional pharmacists. Students will be assigned an institutional pharmacist preceptor and will observe and be engaged in the following components under their supervision: direct patient care, interprofessional collaboration, applying drug knowledge, the medication use system, patient and/or healthcare practitioner communications.

PRX 590 IPPE 6: Patient Care Elective (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. The focus of this course is directed student exposure to patient care responsibilities of institutional, community, or ambulatory care pharmacists. Students will be assigned a pharmacist preceptor and will observe and be engaged in the following components under their supervision: direct patient care, applying drug knowledge, the medication use system, and patient and/or healthcare practitioner communities.

PRX 595 IPPE Patient Care Elective 2 (1 credit)

Introductory Pharmacy Practice Experiences (IPPEs) provides experiences that enhance and support didactic knowledge and skills. The focus of this course is directed student exposure to patient care responsibilities of institutional, community, or ambulatory care pharmacists. Students will be assigned a pharmacist preceptor and will observe and be engaged in the following components under their supervision: direct patient care, applying drug knowledge, the medication use system, and patient and/or healthcare practitioner communities.
Restrictions: Enrollment is limited to students with a major in Pharmacy.

PRX 610 APPE: Community Pharmacy (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Community Pharmacy Rotation, student pharmacists are engaged in patient-focused provision of pharmacy services in a community pharmacy. Students will provide patient counseling, OTC triage, medication therapy management, etc. under pharmacist supervision as part of an integrated community pharmacy service model.

PRX 618 Pharm Prof Dev & Enrichment (1 credit)

This course is intended to enrich student development and achievement during their APPE year and prepare students to successfully transition from their professional education to practice.

PRX 620 APPE: Ambulatory Care Pharm (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Ambulatory Care Rotation, student pharmacists are engaged in provision of patient care and acute/chronic drug therapy management in an outpatient practice setting.

PRX 630 APPE: Institutional Pharmacy (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Institutional Rotation, student pharmacists gain experience in how medications are managed in the institutional setting and how institution-based pharmacists oversee the approximate and safe use of medications including oversight of medication ordering, dispensing and administration, use of technology and information, and the development and use of formularies, drug policies, procedures and protocols.

PRX 640 APPE: Acute Patient Care (5 credits)

Advanced Pharmacy Practice Experience integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Acute Patient Care Rotation, student pharmacists are engaged in provision of patient care and medication management as part of an interprofessional in-patient based medical team under the supervision of a pharmacist preceptor. Examples of patient focus may include general medicine, critical care, oncology, cardiology, or infectious diseases.

PRX 650 APPE: Indir Patient Care Elec (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Indirect Patient Care Elective Rotation, student pharmacists are able to gain additional knowledge, skills, and experience in businesses, organizations, and pharmacist practices that do not directly engage patients. Common rotations include pharmaceutical industry, managed care, medical communications, management rotations in community and hospital pharmacy, professional organizations, nuclear pharmacy, law offices, and investigations drug services.

PRX 660 APPE: Patient Care Elective (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance the knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Patient Care Elective Rotation, student pharmacists are able to gain additional knowledge, skills, and experience in patient care/ pharmacy practice settings such as compounding pharmacy, long term care pharmacy, anticoagulation services, poison control centers, home IV infusion, etc.

PRX 670 APPE: Academic Elective (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Academia Elective Rotation, student pharmacists are able to gain additional knowledge, skills, and experience in academic pharmacy. Common experiences during this rotation may include: development of a teaching philosophy statement, creation of course learning activities and assessments, small/large group facilitation, exam proctoring, attending institutional meetings, and observation of various courses, among others.

PRX 680 APPE Research Elective (5 credits)

Advanced Pharmacy Practice Experiences integrate, apply, reinforce, and advance knowledge, skills, attitudes, abilities, and behaviors developed in the Pre-APPE curriculum and in co-curricular activities. During the APPE Research Elective Rotation, student pharmacists are able to gain additional knowledge, skills and experience in research methodology. Experiences may include any or all of the following: exposure to research study design, protocol development, preparation of material for submission to institutional review board (IRB), data collection, data analysis, and publication, among other research-related activities.