



Pharm.D. Curriculum

For Students in the Classes of 2014 and 2015

The South College School of Pharmacy offers a 3 calendar year Doctor of Pharmacy curriculum. The curriculum is dynamic and will be modified over time in keeping with best educational practices and in response to evaluation by the Accreditation Council for Pharmacy Education.

FIRST PROFESSIONAL YEAR

Course Number	Course Name	4 Digit Code*
Quarter One		
PSC 6110	Biochemistry	5-0-0-5
PSC 6120	Pathophysiology I	3-0-0-3
PSC 6130	Immunology	3-0-0-3
PSC 6140	Pharmacy Calculations	2-0-0-2
PPR 6150	Pharmacy Practice I-Introduction to Pharmacy	3-0-0-3
PPR 6160	Introduction to Healthcare Systems	<u>2-0-0-2</u>
18 hours		
Quarter Two		
PSC 6210	Pathophysiology II	3-0-0-3
PSC 6220	Integrated Medicinal Chemistry and Pharmacology I	5-0-0-5
PPR 6230	Pharmacy Practice II-Introduction to Patient Care	3-0-0-3
PPR 6240	Career Paths and Introduction to Practice	1-0-0-1
PPR 6250	Pharmacy Practice III-Public Health and Wellness	3-0-0-3
PPR 6260	Basic Clinical and Communication Skills	2-0-0-2
PPR 6270	Forum and Professionalism	<u>1-0-0-1</u>
18 hours		
Quarter Three		
PSC 6310	Integrated Medicinal Chemistry and Pharmacology II	4-0-0-4
PSC 6320	Pharmaceutics I	4-0-0-4
PSC 6330	Pharmacy Dispensing and Compounding Lab	2-2-0-3
PPR 6340	Clinical Laboratory Medicine	2-0-0-2
PPR 6350	Health Assessment and Physical Examination	2-0-0-2
PPR 6360	Community Introductory Pharmacy Practice Experience OR	
PPR 6450	Institutional Introductory Pharmacy Practice Experience	<u>0-0-9-3</u>
18 hours		
Quarter Four		
PSC 6410	Integrated Medicinal Chemistry and Pharmacology III	5-0-0-5
PSC 6420	Pharmaceutics II	4-0-0-4
PSC 6430	Sterile Products	1-2-0-2
PSC 6440	Basic Biopharmaceutics and Pharmacokinetics	3-0-0-3
PPR 6360	Community Introductory Pharmacy Practice Experience OR	
PPR 6450	Institutional Introductory Pharmacy Practice Experience	0-0-9-3
PPR 6460	Pharmacy Practice Experiences Reflection	<u>1-0-0-1</u>
18 hours		

SECOND PROFESSIONAL YEAR

Course Number	Course Name	4 Digit Code*
Quarter One		
PPR 6510	Pharmacy Practice IV-Research Methods and Biostatistics	3-0-0-3
PPR 6520	Pharmacotherapy I-Nephrology and Pulmonary	2-2-0-3
PPR 6530	Pharmacotherapy II-Nutrition and Hematology	2-2-0-3
PPR 6540	Pharmacy Practice V-Pharmacy Management	3-0-0-3
PPR 6550	Drug Information Retrieval and Evaluation	3-0-0-3
PPR 6560	Intermediate Pharmacy Practice Experience	<u>0-0-9-3</u>
		18 hours
Quarter Two		
PPR 6610	Pharmacotherapy III-Cardiology	2-2-0-3
PPR 6620	Pharmacotherapy IV-Endocrine and GI Diseases	2-2-0-3
PPR 6630	Self-Care and Non-Prescription Therapies	3-0-0-3
PPR 6640	Pharmacy Practice VI-Pharmacoeconomics and Outcomes Assessment	3-0-0-3
PPR 6650	Clinical Pharmacokinetics and Pharmacogenomics	3-0-0-3
PPR 6660	Forum and Professionalism	1-0-0-1
PPR/PSC	Elective [#]	<u>2-0-0-2</u>
		18 hours
Quarter Three		
PPR 6710	Pharmacotherapy V-Neurology and Pain Management	2-2-0-3
PPR 6720	Pharmacotherapy VI-Psychiatry	2-2-0-3
PPR 6730	Pharmacotherapy VII-Oncology	2-2-0-3
PPR 6740	Pharmacy Practice VII-Medication Therapy Management	3-0-0-3
PPR 6750	Complementary and Natural Medicine	2-0-0-2
PPR 6760	Clinical Seminar I	1-0-0-1
PPR/PSC	Elective [#]	<u>3-0-0-3</u>
		18 hours
Quarter Four		
PPR 6810	Pharmacotherapy VIII-Infectious Disease	2-2-0-3
PPR 6820	Pharmacotherapy IX-Special Populations I	2-2-0-3
PPR 6830	Pharmacotherapy X-Special Populations II	2-2-0-3
PPR 6840	Pharmacy Practice VIII-Pharmacy Ethics and Law	3-0-0-3
PPR 6850	Community Focused Introductory Pharmacy Practice Experience	0-0-9-3
PPR 6860	Clinical Seminar II	1-0-0-1
PPR/PSC	Elective [#]	<u>2-0-0-2</u>
		18 hours

SECOND PROFESSIONAL YEAR

<u>Course Number</u>	<u>Course Name</u>	<u>4 Digit Code*</u>
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#List of Second Professional Year didactic course electives

PSC 6001	Introduction to Pharmaceutical Analysis	3-0-0-3
PSC 6002	Independent Research	2-0-0-2
PSC 6003	Basic Principles of Toxicology	3-0-0-3
PSC 6004	Drug Discovery, Development, and Regulation	2-0-0-2
PSC 6005	Introduction to Responsible Conduct of Research	2-0-0-2
PSC 6007	Introduction to Neurology	3-0-0-3
PSC 6008	Basics in Pharmaceutical Research	3-0-0-3
PSC 6X06	Special Projects in Pharmaceutical Sciences Research	1-0-0-1
PPR 6001	Evaluation and Selection of Cardiovascular Drugs	2-0-0-2
PPR 6002	Substance Abuse, Diversion, and Addiction	3-0-0-3
PPR 6003	Case Studies in Public Health Practice	3-0-0-3
PPR 6004	Introduction to Hospice and Palliative Care	2-0-0-2
PPR 6005	Medical Informatics	2-0-0-2
PPR 6006	Geriatrics Pharmacotherapy	2-0-0-2
PPR 6007	Advanced Pain Management and Introduction to Hospice and Palliative Care	3-0-0-3
PPR 6008	Introduction to Psychosocial Pharmacy	2-0-0-2
PPR 6X08	Independent Research in Pharmacy Practice	3-0-0-3

THIRD PROFESSIONAL YEAR**

Course Number	Course Name	4 Digit Code*
Quarters One through Four		
PPR 69XX	APPE Ambulatory Care (Required)***	0-0-40-4
PPR 69XX	APPE Acute Care (Required)***	0-0-40-4
PPR 69XX	APPE Community (Required)***	0-0-40-4
PPR 69XX	APPE Institutional (Required)***	0-0-40-4
PPR 69XX	APPE electives (6 electives are required)***	0-0-40-4
PPR 6991	Pharmacy Practice IX– Professional Enhancement (Required) (Quarter Two)	4-0-0-4
PPR 6992	Pharmacy Practice X–Curriculum Summative Evaluation (Required) (Quarter Four)	<u>4-0-0-4</u>

Each student is required to complete an Ambulatory Care, Acute Care, Community, and Institutional APPE to be selected from the list below. In addition, each student is required to complete six (6) elective APPEs to be selected from the list below.

- * **The 4 Digit Code represents the number of weekly hours of lectures, laboratory, clinical site, and the course credit hours consecutively**
- ** **Third professional year requirements include 12 hours per quarter**
- *** **A list of APPEs is provided below, the required four APPEs focus on Ambulatory Care, Acute Care, Community, and Institutional**

***List of APPEs

PPR 6901	APPE Ambulatory Care	0-0-40-4
PPR 6902	APPE Acute Care	0-0-40-4
PPR 6903	APPE Community	0-0-40-4
PPR 6904	APPE Institutional	0-0-40-4
PPR 6905	APPE Advanced Community Pharmacy – Compounding	0-0-40-4
PPR 6906	APPE Behavioral Health	0-0-40-4
PPR 6907	APPE Pediatric Medicine	0-0-40-4
PPR 6908	APPE Trauma/Critical Care Medicine	0-0-40-4
PPR 6909	APPE Oncology Medicine	0-0-40-4
PPR 6910	APPE Infectious Disease Medicine	0-0-40-4
PPR 6911	APPE Long Term Care Pharmacy	0-0-40-4
PPR 6912	APPE Government/Legislative/Board of Pharmacy	0-0-40-4
PPR 6913	APPE Academic Pharmacy Practice	0-0-40-4
PPR 6914	APPE Nuclear Medicine	0-0-40-4
PPR 6915	APPE Nutrition Support	0-0-40-4
PPR 6916	APPE Veterinary Pharmacy	0-0-40-4
PPR 6917	APPE Medication Safety	0-0-40-4
PPR 6918	APPE Drug Information	0-0-40-4
PPR 6919	APPE Pharmaceutical Industry	0-0-40-4

THIRD PROFESSIONAL YEAR**

<u>Course Number</u>	<u>Course Name</u>	<u>4 Digit Code*</u>
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*****List of APPEs (Continued)**

PPR 6920	APPE Pharmacy Management	0-0-40-4
PPR 6921	APPE Antibiotic Stewardship	0-0-40-4
PPR 6922	APPE HIV	0-0-40-4
PPR 6923	APPE Medical Anthropology	0-0-40-4
PPR 6924	APPE Public Health	0-0-40-4
PPR 6925	APPE Drug Diversion	0-0-40-4
PPR 6926	APPE Ambulatory Care – Special Topics	0-0-40-4
PPR 6927	APPE Acute Care – Special Topics	0-0-40-4
PPR 6928	APPE Community – Special Topics	0-0-40-4
PPR 6929	APPE Institutional – Special Topics	0-0-40-4
PPR 6930	APPE Geriatric Medicine	0-0-40-4
PPR 6931	APPE Longitudinal – Special Topics	0-0-40-4
PPR 6932	APPE Pharmaceutical Science Research	0-0-40-4
PPR 6933	APPE Alternative and Complementary Medicine	0-0-40-4
PPR 6934	APPE Pharmacokinetics	0-0-40-4
PPR 6935	APPE Transplant	0-0-40-4
PPR 6936	APPE Indian Health Service	0-0-40-4
PPR 6937	APPE Cardiology Medicine	0-0-40-4
PPR 6938	APPE Pulmonary Medicine	0-0-40-4
PPR 6939	APPE Transitional Care	0-0-40-4
PPR 6940	APPE Emergency Medicine	0-0-40-4
PPR 6941	APPE Informatics	0-0-40-4
PPR 6942	APPE Community II	0-0-40-4
PPR 6943	APPE Community III	0-0-40-4
PPR 6944	APPE Institutional II	0-0-40-4
PPR 6945	APPE Hospice/Palliative Care	0-0-40-4
PPR 6946	APPE Infusion/Specialty Pharmacy	0-0-40-4
PPR 6947	APPE Community IV	0-0-40-4
PPR 6948	APPE Ambulatory Care II	0-0-40-4

School of Pharmacy Required Course Descriptions

Course Descriptions for the First Year Curriculum

PSC 6110 BIOCHEMISTRY

5-0-0-5

This course presents, through lecture and problem solving activities, basic principles and fundamental concepts of human biochemistry, including the synthesis, metabolism, physicochemical characteristics, function and interactions of amino acids & proteins; nucleotides and nucleic acids; carbohydrates, lipids, and hybrid molecules. The course emphasizes biomolecular structure, metabolic pathways and biochemical signaling processes in normal human health, perturbations of these processes in disease, and as targets for chemical/pharmacological intervention to treat, prevent or diagnosis disease.

PSC 6120 PATHOPHYSIOLOGY I

3-0-0-3

The first in a two course sequence that teaches understanding of disease process and trauma in humans as the basis for medical treatment. Etiology, clinical manifestations, complications, diagnostic findings and common treatment are reviewed by body systems and developmental stages. This course focuses on mechanisms of tissue injury to organs and organ systems during selected disease states with the goal of providing students with a rationale for drug therapy. Emphasis is placed on cell pathology, inflammation, neoplasm, and the cardiovascular, respiratory, GI, and hepatobiliary systems during the disease process.

PSC 6130 IMMUNOLOGY

3-0-0-3

This course presents the fundamentals of immunology. Included in the course is a discussion of the principles and clinical importance of immunology in relation to the structure, growth, disinfection, sterilization and genetics of bacteria, viruses and other microbial infectious, pathogenic organisms. The course also includes a review of antimicrobial/anti-infective agents and mechanisms of emerging resistance.

PSC 6140 PHARMACY CALCULATIONS

2-0-0-2

This course covers the following topics: International System of Units, pharmaceutical measurement, density and specific gravity, interpretation of prescriptions and medication orders, expressions of concentration, calculation of doses and concentrations, measures of potency, buffer and electrolyte solutions, reducing and enlarging formulas, and injectable medications including rate-of-flow. This course focuses on performing mathematical calculations useful in compounding extemporaneously prepared pharmaceutical products, and provides a strong foundation in basic pharmaceutical calculations useful in practice.

PPR 6150 PHARMACY PRACTICE I - INTRODUCTION TO PHARMACY

3-0-0-3

This course presents, through lecture activities, guest speakers, and professional assessment tools, an introduction to the profession of pharmacy. This course emphasizes the history, regulation, career opportunities, and the future of the practice of pharmacy.

PPR 6160 INTRODUCTION TO HEALTH CARE SYSTEMS 2-0-0-2

This course introduces the United States healthcare system components, with special attention given to Medicare, Medicaid, and private insurance. The student will be exposed to roles that pharmacists play in health and hospital systems, medication distribution systems, management of medication use, impact of technology on daily functions of the healthcare system, and drug shortages.

PSC 6210 PATHOPHYSIOLOGY II 3-0-0-3

The second in a two course sequence that teaches understanding of disease process and trauma in humans as the basis for medical treatment. Etiology, clinical manifestations, complications, diagnostic findings and common treatment are reviewed by body systems and developmental stages. This course focuses on mechanisms of tissue injury to organs and organ systems during selected disease states with the goal of providing students with a rationale for drug therapy. Emphasis is placed on fluid, electrolytes, acid-base balance, and congenital disorders, and the urinary, musculoskeletal, integument, neurological, endocrine and sensory systems during the disease process.

PSC 6220 INTEGRATED MEDICINAL CHEMISTRY & PHARMACOLOGY I 5-0-0-5

This is the first in a three quarter sequence of courses that introduces and integrates the basic principles and concepts of medicinal chemistry and pharmacology. This course provides students a basic knowledge of the important chemical and physical properties of a molecule that influence its absorption, distribution, metabolism and elimination. The course describes a drug's availability in its active form, the site of action, and the structure/activity relationships that determine a drug's interaction at the targeted receptor(s). The series also provides an understanding of biochemical signaling pathways triggered by drug-receptor interaction that constitute the pharmacological mechanism of action leading to the desired pharmacodynamic affects. This first course in the sequence provides an introduction to integration of general principles of medicinal chemistry and pharmacology, including drug discovery and design, receptors and drug-receptor interactions, physicochemical and biopharmaceutical properties of drug substances, and drug metabolism. It also considers the chemical characteristics and pharmacology of drugs acting at the autonomic nervous system, and cardiovascular and renal systems; autocoids and eicosinoids; and drugs used to treat anemias and coagulation disorders.

PPR 6230 PHARMACY PRACTICE II - INTRODUCTION TO PATIENT CARE 3-0-0-3

This course focuses on the practice of pharmaceutical care: its philosophy of practice, patient care process, and the practice management system required to support it. It teaches pharmacy students how to develop a care plan by gathering information, integrating it, applying problem-solving, and communication skills. Throughout this course the student learns the practice of pharmaceutical care. As practice is an active process, this course requires the student to demonstrate knowledge in many different ways.

PPR 6240 CAREER PATHS & INTRODUCTION TO PRACTICE 1-0-0-1

This introductory course teaches student pharmacists basic pharmacy practice concepts and skills associated with community and institutional practices. Examples of topics included in this course

are AHA BLS certification, APhA immunization certification, HIPAA certification, Bloodborne pathogens certification, introduction to drug information and professionalism. Journaling and self-reflection are introduced in this course.

PPR 6250 PHARMACY PRACTICE III - PUBLIC HEALTH & WELLNESS 3-0-0-3

This course provides students with an overview of the core topics in public health, including epidemiology, environmental health, social and behavioral sciences, and health policy and management. The concepts discussed include prevalence, causation, mode of transmission, dissemination, control, and preventative countermeasures of infectious and non-communicable diseases, as well as environmental, occupational, behavioral, and chronic conditions. Pharmacy students are introduced to behavioral theories and the application to public health program design; research methodologies related to the study of disease and the investigation of epidemiological trends across a variety of cultures; and “unnatural causes” of premature death in special populations. Special attention is given to ethics and economics, determinants of health, and models of pharmacy-led public health programs.

PPR 6260 BASIC CLINICAL & COMMUNICATION SKILLS 2-0-0-2

This course highlights the importance of communicating and communications in the professional environment. Students are taught to efficiently and effectively interview patients and take a patient medical and medication history and perform associated general physical and laboratory assessment. Students are taught how to counsel and otherwise consult with patients on the proper use of prescription and nonprescription drugs; treatment of self-limiting conditions, support patients seeking to implement strategies for prevention and wellness; review and critique medication therapy; and document patient encounters and activities. Topics include how to assess physical and psychosocial measures related to patient care and teaching and learning methods/characteristics.

PPR 6270 FORUM & PROFESSIONALISM 1-0-0-1

This course includes both the first and second year students to address issues related to professional conduct, ethics, career-long learning, public policy and current issues. Through invited speakers, policy makers and experts this course prepares students for their role as pharmacists and future primary care providers.

PSC 6310 INTEGRATED MEDICINAL CHEMISTRY & PHARMACOLOGY II 4-0-0-4

This is the second in a three quarter sequence of courses that introduces and integrates the basic principles and concepts of medicinal chemistry and pharmacology. This course provides students a basic knowledge of the important chemical and physical properties of a molecule that influence its absorption, distribution, metabolism and elimination. The course focuses on a drug’s availability in its active form, the site of action, and the structure/activity relationships that determine a drug’s interaction at the targeted receptor(s). The series also provides an understanding of biochemical signaling pathways triggered by drug-receptor interaction that constitute the pharmacological mechanism of action leading to the desired pharmacodynamic affects. This second course in the sequence considers the physicochemical characteristics and pharmacology of drugs used in the pharmacological control of inflammation and asthma, nonsteroidal anti-inflammatory drugs, other analgesics/antipyretic compounds, CNS drugs, opioid analgesics, and endocrine drugs.

PSC 6320 PHARMACEUTICS I**4-0-0-4**

This course integrates physical, chemical and biological principles underlying the design, preparation and manufacture of pharmaceutical dosage forms. Topics covered will include preformulation and formulation strategies, ionic equilibria, osmotic and thermodynamic properties of pharmaceutical systems, buffers and isotonic solutions, drug solubility and stability, and solid dosage forms. Relevant pharmaceutical ingredients, industrial manufacturing methods, drug development and the drug approval process are also covered in this course.

**PSC 6330 PHARMACY DISPENSING &
COMPOUNDING LAB****2-2-0-3**

This laboratory course will focus on application of physicochemical properties of drugs and excipients, including appropriate pharmaceutical calculations, relevant to extemporaneous preparation and compounding of conventional and specialized non-sterile drug preparations, typically encountered by practicing pharmacists in compounding pharmacy settings. Students will compound, package, and appropriately label their individually prepared drug products: solutions, gels, suspensions, emulsions, ointments, creams, pastes, lotions, suppositories, troches, lollipops, capsules, and effervescent powders. Flavoring, coloring, and taste-masking strategies to achieve patient compliance will also be incorporated during compounding techniques.

PPR 6340 CLINICAL LABORATORY MEDICINE**2-0-0-2**

This course introduces students to clinical laboratory diagnostic tests. The basic theory, selection, and interpretation of procedures most commonly used in a primary care setting and case presentations are studied. Students study techniques used to obtain, preserve, and handle laboratory specimens as well as use clinical laboratory results to screen, diagnose, evaluate, and monitor patients. Students gain familiarity with Occupational Safety & Health Administration (OSHA) requirements and Clinical Laboratory Improvement Amendments (CLIA) and their implications for laboratory medicine.

**PPR 6350 HEALTH ASSESSMENT & PHYSICAL
EXAMINATION****2-0-0-2**

Physical assessment and clinical skills provides the student with knowledge and preliminary application of the skills necessary for obtaining a comprehensive patient history and problem identification. Students learn to design patient-centered, culturally relevant pharmacy care plans and appreciate the role of these plans in patient care. Students learn and perform basic assessment techniques and the skills necessary for triage and referral.

**PPR 6360 COMMUNITY INTRODUCTORY PHARMACY
PRACTICE EXPERIENCE****0-0-9-3**

This course gives student pharmacists an experience in a community practice setting allowing them to achieve educational outcomes in the areas of patient care and community pharmacy practice. The student spends 8 contact hours, one day a week, at the assigned location for 10 consecutive weeks. Student pharmacists learn the basic distributive, dispensing, and administrative processes in the community practice setting and gain initial experience interacting with patients, preceptors, technicians and other pharmacy personnel. Students will document their experiences, activities and outcomes achievement.

PSC 6410 INTEGRATED MEDICINAL CHEMISTRY & PHARMACOLOGY III

5-0-0-5

The last of a three quarter sequence of courses that introduces and integrates the basic principles and concepts of medicinal chemistry and pharmacology. This course provides students a basic knowledge of the important chemical and physical properties of a molecule that influence its absorption, distribution, metabolism and elimination. The course focuses on a drug's availability in its active form, the site of action, and the structure/activity relationships that determine a drug's interaction at the targeted receptor(s). The series also provides an understanding of biochemical signaling pathways triggered by drug-receptor interaction that constitute the pharmacological mechanism of action leading to the desired pharmacodynamic effects. This last course in the sequence provides integration of general principles of medicinal chemistry and pharmacology, including drug discovery and design, receptors and drug-receptor interactions, physicochemical and biopharmaceutical properties of drug substances, and drug metabolism. This third course in the sequence also considers the physicochemical characteristics and pharmacology of drugs used in the control of diabetes, bone and mineral homeostasis, gastrointestinal diseases and disorders, anti-infective drugs and agents used in cancer prevention/treatment. Specialty topics in pharmacology and basic principles of toxicology are also discussed.

PSC 6420 PHARMACEUTICS II

4-0-0-4

This course integrates physical, chemical and biological principles underlying the design, preparation and manufacture of pharmaceutical dosage forms and drug delivery systems. Topics covered include liquid dosage forms, disperse systems and semisolids, transdermal drug delivery systems, parenteral dosage forms, pulmonary and nasal drug delivery systems, pharmaceutical inserts, novel drug delivery systems, and products of biotechnology.

PSC 6430 STERILE PRODUCTS

1-2-0-2

This laboratory course builds upon the Pharmacy Dispensing and Compounding Lab with a focus on sterile products from the time of receipt of an order for a sterile product through the preparation and dispensing of the finished product. Pharmacy calculations, chemical interactions and stability of the finished product are reviewed. Students learn requirements for a sterile product preparation area, including equipment in the area, and aseptic techniques for compounding piggyback medications, large volume parenterals, parenteral nutrition and sterile irrigation solutions. Review of special procedures and equipment for hazardous product preparation, including chemotherapy, will be included. Students will learn the importance of in-line filters, specialized infusion tubing and protecting certain products from environmental exposure. Technologies such as the central line, PIC lines, infusion ports, and peripheral catheters used in administering sterile products, and OSHA standards for healthcare workers and patients, are addressed.

PSC 6440 BASIC BIOPHARMACEUTICS & PHARMACOKINETICS

3-0-0-3

This course provides a conceptual and quantitative background in pharmacokinetic theory and applications needed to pursue advanced studies in clinical pharmacokinetics. The impact of drug data such as physicochemical characteristics, dosage forms, and routes of administration as well as the impact of patient factors such as gastrointestinal, hepatic, and renal function on drug disposition are examined and modeled. Pharmacokinetic, pharmacodynamic, and pharmacogenetic factors and parameters are introduced and calculated as they relate to drug absorption, distribution, metabolism, and elimination.

PPR 6450 INSTITUTIONAL INTRODUCTORY PHARMACY PRACTICE EXPERIENCE 0-0-9-3

This course gives student pharmacists experience in the institutional setting, allowing them to achieve educational outcomes in the areas of patient care and institutional pharmacy practice. The student spends 8 contact hours, one day a week, at the assigned location for 10 consecutive weeks. Student pharmacists learn the basic distributive, dispensing, and administrative processes in the institutional practice setting and gain initial experience interacting with patients, preceptors, technicians and other pharmacy personnel. Students will document their experiences, activities and outcomes achievement.

PPR 6460 PHARMACY PRACTICE EXPERIENCES REFLECTION 1-0-0-1

During this required one hour per week reflection time, students will describe their experiences encountered during their introductory pharmacy practice experiences. Reflection includes, but is not limited to, a description of the practice site, a general assessment of the site, a description of the kinds of activities carried out, who the student interacted with, a list of positive and negative aspects of the experience, whether didactic courses prepared the student for the duties assigned, and the medical, professional and pharmacy issues that were encountered.

Course Descriptions for the Second Year Curriculum

PPR 6510 PHARMACY PRACTICE IV - RESEARCH METHODS AND BIostatISTICS 3-0-0-3

The aim of this course is to familiarize students with the pros and cons (including potential problems and pitfalls) that different research methodologies present, and to indicate ways in which these are addressed. The students will formulate a focused research question and improve their critical evaluation skills. The course provides students with the knowledge and skills needed to read, interpret, and evaluate quantitative findings found in evidence-based pharmacy and medical literature. It emphasizes recognizing and applying the correct quantitative methods to assist in evaluating observed data and professional practice decision-making.

PPR 6520 PHARMACOTHERAPY I - NEPHROLOGY & PULMONARY 2-2-0-3

Pharmacotherapy I is the first of a ten part organ-based module sequence to provide student with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6530 PHARMACOTHERAPY II - NUTRITION & HEMATOLOGY 2-2-0-3

Pharmacotherapy II is the second of a ten part organ-based module sequence to provide the student with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology;

diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

**PPR 6540 PHARMACY PRACTICE V -
PHARMACY MANAGEMENT 3-0-0-3**

The purpose of this course is to introduce the basic principles of management as they apply in pharmacy practice settings in an ever-changing health care environment. These principles include financial analysis, strategic planning, leadership, organizational design, quality control, supervision, personal motivation and management. The course addresses those who will be entrepreneurs, own or lease a pharmacy, practice in a hospital or community pharmacy, or want to develop and establish a new pharmacy.

**PPR 6550 DRUG INFORMATION RETRIEVAL &
EVALUATION 3-0-0-3**

This course serves as an introduction to the principles of drug information and literature retrieval and evaluation. Students learn how to answer drug information questions, differentiate types of medical and scientific literature, search and retrieve information, write a drug monograph, report an adverse drug reaction, prepare a presentation to a Pharmacy and Therapeutics Committee, present an article via journal club presentation, and effectively communicate drug information.

**PPR 6560 INTERMEDIATE PHARMACY PRACTICE
EXPERIENCE 0-0-9-3**

This course gives student pharmacists an additional experience in either a community, institutional, or specialty pharmacy setting allowing them to further advance educational outcomes in the areas of patient care and pharmacy practice. The student spends 8 contact hours, one day a week, at the assigned location for 10 consecutive weeks. In addition to being at the sight for 80 contact hours, the student completes a patient care project.

PPR 6610 PHARMACOTHERAPY III - CARDIOLOGY 2-2-0-3

Pharmacotherapy III is the third of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

**PPR 6620 PHARMACOTHERAPY IV - ENDOCRINE &
GI DISEASE 2-2-0-3**

Pharmacotherapy IV is the fourth of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology;

diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6630 SELF-CARE & NON-PRESCRIPTION THERAPIES 3-0-0-3

This course evaluates the role of nonprescription drug therapies, behind the counter medications and home diagnostic and monitoring devices in preventive healthcare or in the treatment of common, self-diagnosed medical problems. It also introduces students to durable medical equipment products and their use.

PPR 6640 PHARMACY PRACTICE VI - PHARMACOECONOMICS & OUTCOMES ASSESSMENT 3-0-0-3

Pharmacoeconomic approaches are increasingly being found in medical and health outcomes research and used as a tool for health care decision making process. This course introduces the basic concepts, terminology, and methods associated with pharmacoeconomic studies. Students understand and review the principles of pharmacoeconomics and discuss their application to the evaluation of medication use and treatment outcomes, how these tools are used in practice and factors that limit their use or interpretation. Students learn the role of study perspective in the selection of cost/consequence parameters and the impact on study design and interpretation of results. The course reviews and compares the commonly used generic and disease-specific measures of health-related quality of life measures. The students examine the definitions for and methods of establishing the validity and reliability of a health-related quality of life measure. Application and reinforcement of pharmacoeconomics will continue throughout the pharmacotherapy series.

PPR 6650 CLINICAL PHARMACOKINETICS AND PHARMACOGENOMICS 3-0-0-3

This course enables students to critically apply knowledge from basic pharmaceutical sciences, mathematical modeling, and pharmacotherapy courses at a higher level of sophistication in order to optimize drug therapy for individual patients and diverse populations. The focus of this course is on initiating and adjusting individualized drug dosage regimens for selected medications based on targeted and measured drug plasma levels, patient's demographics, organ function, concomitant medications and disease states, and overall patient's response to drug therapy. Altered drug disposition in special patient populations such as pediatrics, geriatrics, obesity, and those with renal or hepatic dysfunction is also addressed.

PPR 6660 FORUM & PROFESSIONALISM 1-0-0-1

This course includes both the first and second year students to address issues related to professional conduct, ethics, career-long learning, public policy and current issues. Through invited speakers, policy makers and experts this course prepares students for their role as pharmacists and future primary care providers.

PPR 6710 PHARMACOTHERAPY V - NEUROLOGY & PAIN MANAGEMENT 2-2-0-3

Pharmacotherapy V is the fifth of a ten part organ-based module sequence to provide the student with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6720 PHARMACOTHERAPY VI - PSYCHIATRY 2-2-0-3

Pharmacotherapy VI is the sixth of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6730 PHARMACOTHERAPY VII – ONCOLOGY 2-2-0-3

Pharmacotherapy VII is the seventh of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6740 PHARMACY PRACTICE VII - MEDICATION THERAPY MANAGEMENT 3-0-0-3

In this course, students will learn how to construct and implement a sustainable Medication Therapy Management Services Program. The curriculum will include: reviewing the genesis of MTM services in order to establish a foundation of knowledge, detailing the significance of initiating MTM programs, and addressing the necessary components and various methods in establishing a MTM program. This course will expose students to the administrative perspective of pharmacy by reviewing promotion and advertising, insurance reimbursements, and pharmacy CPT codes. Students will learn how to conduct a comprehensive medication review and how to document interventions. These core skills will further prepare students for their Advanced Pharmacy Practice Experiences.

PPR 6750 COMPLEMENTARY & NATURAL MEDICINE 2-0-0-2

This course builds upon the course Self-Care and Non-Prescription Therapies and focuses upon dietary supplements, complementary and natural medicines, and homeopathic remedies commonly used in patient care. The relationship of complementary and natural medicines, including

alternative medicines, to traditional medicine and concomitant use with traditional medicine is examined.

PPR 6760 CLINICAL SEMINAR I

1-0-0-1

This course is the first of a two part series, and provides the formal instruction component of the series. In this class, students receive instruction on the preparation of formal clinically-oriented presentations, including drug information responses, patient questions in the community environment and case presentations. These activities are devised to prepare students to formulate and present formalized patient data to other healthcare professionals as well as patients.

PPR 6810 PHARMACOTHERAPY VIII - INFECTIOUS DISEASE

2-2-0-3

Pharmacotherapy VIII is the eighth of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6820 PHARMACOTHERAPY IX - SPECIAL POPULATIONS I

2-2-0-3

Pharmacotherapy IX is the ninth of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. This module focuses on HIV, women's and men's health. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

PPR 6830 PHARMACOTHERAPY X - SPECIAL POPULATIONS II

2-2-0-3

Pharmacotherapy X is the final of a ten part organ-based module sequence to provide the students with skills necessary to be a competent pharmaceutical care provider. This module focuses on geriatrics, pediatrics, vaccines, and dermatology. The course reinforces pathophysiology and pharmacology; then correlates to clinical symptomatology; diagnostic testing and diagnosis; therapeutic agents and evidence-based medicine supporting agents use; applicable clinical practice guidelines; and therapeutic drug monitoring for each disorder/condition. To reinforce the principles, students will participate in a weekly lab to enhance problem-solving skills for the patient care process. Students will have to identify patient-specific data and interpret this data through written and verbal communication skills applied to an array of audiences.

**PPR 6840 PHARMACY PRACTICE VIII -
PHARMACY ETHICS & LAW 3-0-0-3**

This course consists of a study of federal and state pharmacy, drug, and related laws. Through self-study, lecture, and case studies, students learn the substance of these laws and application to pharmacy practice. Discussion of societal and health care system issues, such as abortion and the right to die, demonstrates the broader societal role of the pharmacist. In light of continuing expansion of the pharmacist's role in the delivery of healthcare services, attention is given to ethical and legal issues surrounding direct patient care services, including an examination of professional liability (civil, criminal, and disciplinary). While the importance of the above issues has grown significantly in very recent years, these issues have not displaced the need to study the expansive body of traditional pharmacy and drug law.

**PPR 6850 COMMUNITY FOCUSED INTERMEDIATE
PHARMACY PRACTICE EXPERIENCE 0-0-9-3**

This course gives student pharmacists an intensive one week experience in the community pharmacy setting. Student pharmacists enhance skills in distributive, dispensing, and administrative processes in the community pharmacy setting in a concentrated 40 hour work week designed to enforce the concept of continuity of care and follow-up. This intermediate pharmacy practice experience prepares the student for the work environment of an APPE.

PPR 6860 CLINICAL SEMINAR II 1-0-0-1

This course is the second of a two part series, and provides the formal instruction component of the series. In this class, students receive instruction on the preparation of formal clinically-oriented presentations, including drug information responses, patient questions in the community environment and case presentations. These activities are devised to prepare students to formulate and present formalized patient data to other healthcare professionals as well as patients.

Course Descriptions for the Third Year Curriculum

**PPR 6991 PHARMACY PRACTICE IX -
PROFESSIONAL ENHANCEMENT 4-0-0-4**

During the advanced pharmacy practice experiences, this online course works to refine and reinforce foundational pharmacy content and career preparation strategies. The focus of this online course will be to review evidence-based treatment guidelines and new significant pharmacotherapy advances of the foundational pharmacy content to help ensure the developmental progression of competencies across the curriculum. The reinforcement of CV development, interview techniques and strategies prepares the future practitioner for post-graduate employment interviews. The reinforcement of core pharmacy content enhances students current advance pharmacy practice experiences, as well as, prepares future practitioners for post-graduate opportunities.

**PPR 6992 PHARMACY PRACTICE X -
CURRICULUM SUMMATIVE EVALUATION 4-0-0-4**

Following advanced pharmacy practice experiences, students reflect on their development as professionals, assess and share their achievement of educational outcomes, complete their professional portfolio, establish a continuing professional development plan, and prepare to enter the pharmacy profession.

This elective, non-direct patient care pharmacy practice experience provides the student pharmacist the opportunity to gain professional skills in pharmacy management. Sites available include hospital-based clinics/services, physician group practices, safety net clinics, independently owned community pharmacies, chain/retail community pharmacies, and managed care facilities that provide health care to patients. The student experiences pharmacy operations and services, management of the business, scope of services provided, health economics, health care outcomes, and relationships within the industry and health system.

**PPR 6921 ADVANCED PHARMACY PRACTICE EXPERIENCE –
ANTIBIOTIC STEWARDSHIP**

0-0-40-4

This elective, patient care pharmacy practice experience provides the student pharmacist the opportunity to gain professional skills in antibiotic stewardship and infectious disease. Goals of an antimicrobial stewardship program include attenuating or reversing antimicrobial resistance, preventing antimicrobial-related toxicity, and reducing the costs of inappropriate antimicrobial use and health care associated infections. Students will participate in a variety of activities, functioning as an integral member of the healthcare team.

PPR 6922 ADVANCED PHARMACY PRACTICE EXPERIENCE – HIV 0-0-40-4

This elective, direct patient care pharmacy practice experience provides the student pharmacist the opportunity to gain professional skills in a HIV/AIDS and immune deficiency practice environment. Students participate in a variety of clinical activities, functioning as an integral member of the healthcare team. The overall purpose of this APPE is for the student pharmacist to develop, practice, and gain confidence in clinical decision making skills for managing the pharmacotherapy of immune deficient patients.

**PPR 6923 ADVANCED PHARMACY PRACTICE EXPERIENCE –
MEDICAL ANTHROPOLOGY**

0-0-40-4

This elective, non-direct patient care pharmacy practice experience examines emerging and re-emerging infectious diseases such as: HIV/AIDS, Tuberculosis, Malaria, SARS, Avian Influenza, Ebola, West Nile Virus and Lyme disease. Students participate in a variety of case-based discussions and simulations. The primary purpose of this APPE is for the student pharmacist to develop, understand, and gain confidence in managing the pharmacotherapy of these special patient populations.

**PPR 6924 ADVANCED PHARMACY PRACTICE EXPERIENCE –
PUBLIC HEALTH**

0-0-40-4

This elective, direct patient care pharmacy practice experience provides the student pharmacist the opportunity to gain professional skills in a public health practice setting. Students participate in a wide variety of activities, functioning as an integral member of the healthcare team. Emphasis is placed on the student's understanding of public health issues and their relation to the practice of pharmacy.

**PPR 6925 ADVANCED PHARMACY PRACTICE EXPERIENCE –
DRUG DIVERSION**

0-0-40-4

**PPR 6930 ADVANCED PHARMACY PRACTICE EXPERIENCE –
GERIATRIC MEDICINE 0-0-40-4**

This elective, direct patient care pharmacy practice experience provides the student pharmacist the opportunity to gain professional skills in a geriatrics practice environment. The student participates in a variety of activities, provides patient care to elderly patients and functions as an integral member of the healthcare team. The overall purpose of this APPE is for the student pharmacist to develop, practice, and gain confidence in clinical decision making skills for managing the pharmacotherapy of the geriatric patient population.

**PPR 6931 ADVANCED PHARMACY PRACTICE EXPERIENCE –
LONGITUDINAL: SPECIAL TOPICS 0-0-40-4**

This elective, pharmacy practice experience provides the student pharmacist an opportunity to gain 160 hours of experience over a defined period of time. The period of time will range from 2 months to 10 months. Students actively participate in one or more of the following activities: conducting research, obtaining patient medical and medication histories, evaluating drug therapies, developing pharmacy care plans, monitoring patients' therapeutic outcomes, consulting with physicians and non-physician providers, and providing education to patients and health care professionals with a defined special topic or area of focus.

**PPR 6932 ADVANCED PHARMACY PRACTICE EXPERIENCE –
PHARMACEUTICAL SCIENCE RESEARCH 0-0-40-4**

This elective, non-direct patient care pharmacy practice experience allows student pharmacists to learn about and participate in research in pharmaceutical sciences. Students are exposed to different aspects of research in order to gain a better understanding of the types of research that can be performed and of the potential job opportunities/careers that could include a research component.

**PPR 6933 ADVANCED PHARMACY PRACTICE EXPERIENCE –
ALTERNATIVE AND COMPLEMENTARY MEDICINE 0-0-40-4**

This elective, direct patient care pharmacy practice experience provides the student pharmacist an overall perspective of the history and philosophy of natural medicines. Areas of focus include the pharmacotherapy of herbs and supplements used by clinicians, medication safety, and drug information. Other potential areas of study are yoga, reflexology, and medication related nutrient depletion. Emphasis will be placed on the student's understanding of alternative and complementary medicines and their relation to the practice of pharmacy.

**PPR 6934 ADVANCED PHARMACY PRACTICE EXPERIENCE –
PHARMACOKINETICS 0-0-40-4**

This elective, pharmacy practice experience provides the student pharmacist the opportunity to gain professional skills in developing an extensive knowledge base of the pharmacokinetics of drugs that are commonly monitored in patients. The student achieves competence in the application of pharmacokinetic principles to patient care.

**PPR 6935 ADVANCED PHARMACY PRACTICE EXPERIENCE –
TRANSPLANT 0-0-40-4**

This research elective course provides professional pharmacy students with experiential opportunities in laboratory research in the pharmaceutical sciences. Through the student's self-directed initiative and expertise of a faculty mentor, the student will advance the student's knowledge, research acumen and technical skill set in a defined area of pharmaceutical sciences research.

PSC 6003 BASIC PRINCIPLES OF TOXICOLOGY 3-0-0-3

This course introduces the student to the basic principles of toxicology, including the absorption and disposition of toxicants, mechanisms of toxicity, and non-specific toxicity such as carcinogenesis, gene and developmental toxicity; as well as characteristic target-organ toxicity. The course presents the hallmark toxic responses and mechanisms of action of specific classes of toxicants, including drugs, pesticides, and environmental and industrial agents; with discussion of standards of treatment and support of the poisoned patient. Concepts and insights into fields of applied toxicology (forensic, clinical, and occupational) will be introduced and discussed.

PSC 6004 DRUG DISCOVERY, DEVELOPMENT AND REGULATION 2-0-0-2

This elective course provides the student a detailed overview of, and insights into how, a drug is discovered and the number and types of nonclinical and clinical studies that are conducted before it can be approved for human use. It also considers the role of regulatory bodies in providing oversight of drug safety and efficacy, as well as illustrates the relationships between and integration of all of these scientific, strategic and regulatory processes.

PSC 6005 INTRODUCTION TO THE RESPONSIBLE CONDUCT OF RESEARCH 2-0-0-2

This course will provide an introduction to the key aspects of conducting responsible research in the current environment and under governmental policies. In particular, we will discuss the role of a principal investigator in overseeing and conducting research in order to avoid situations that would result in legal findings of misconduct. Six major sections will be covered, which include: protection of human subjects, responsible use of animals in research, data management practices, authorship and publications, conflict of interest, and collaboration and mentorship in research.

PSC 6007 INTRODUCTION TO NEUROLOGY 3-0-0-3

This course consists of an in-depth study of neuroanatomy and physiology, neurological development, psychosocial aspects of neurological disability/diseases, and treatment principles: Topics that will provide the foundation of understanding neurology and pharmacotherapy of neurological disorders. Discussions will focus on common acute and chronic neurological disabilities and case studies, as well as recent medical/pharmacological advances in the prevention and treatment of neurological problems.

PSC 6008 BASICS IN PHARMACEUTICAL RESEARCH 3-0-0-3

This course provides an overview and basic exposure to pharmaceutical research and related outcomes. The student will gain an understanding of the basic and clinical research that goes into developing a drug from initial discovery through pre-clinical and clinical studies, FDA approval and onto the market. This will be followed by the student selecting a drug to research in order to present a summary of how that particular drug went through the drug approval process. The basics of research design will be presented and discussed as the cornerstone to productive

pharmaceutical research. The student will spend time in the laboratory to enhance their understanding of techniques/methods used in pharmaceutical research. This course will also prepare the student to critically analyze research articles and be able to present the key aspects of research methodology, results, statistical analyses, and conclusions that are part of research publications. Other topics that will be covered include the importance of ethical conduct in research, the rise of biological agents in pharmacy, as well as funding and career opportunities for pharmacists interested in pharmaceutical research. This course will be of interest to those interested in understanding or pursuing basic science or clinical research as well as those who will be involved in clinical trials.

**PSC 6X06 SPECIAL PROJECTS IN
PHARMACEUTICAL SCIENCES RESEARCH 1-0-0-1**

The course provides the pharmacy student an opportunity for direct participation in various aspects of pharmaceutical sciences research under the supervision of Pharmaceutical Sciences faculty. Student activities may range from focused, topical review of scientific literature, to hands-on experience with a variety of laboratory techniques and instrumentation.

**PPR 6001 EVALUATION AND SELECTION OF
CARDIOVASCULAR DRUGS 2-0-0-2**

This is a self-study course involving writing approximately a 10-page paper that either evaluates the role of a new cardiovascular drug in therapy or explores the effect of drugs on the heart. The topics should be focused, and go beyond the material offered in the prerequisite. It is the intent of this course to develop critical thinking skills in evaluating the cardiovascular effects of drugs, utilizing recent primary literature. The student will demonstrate in-depth knowledge of pathophysiology, pharmacology, therapeutics and, when applicable, pharmacoeconomics. The final paper will be well-referenced, thorough and accurate in its description of the cardiovascular drug and/or topic selected.

**PPR 6002 SUBSTANCE ABUSE, DIVERSION
AND ADDICTION 3-0-0-3**

This course provides the student with essential pharmacological, medical, and legal knowledge to impact patient care regarding prescription and non-prescription drugs of abuse and misuse. This course prepares the student with knowledge and skills to conduct conversations with patients, families and other healthcare professionals regarding the abuse, misuse and addiction of medications and other substances. The students also learn prevention and diversion strategies aimed at reducing medication abuse and misuse.

**PPR 6003 CASE STUDIES IN PUBLIC
HEALTH PRACTICE 3-0-0-3**

This course provides students with an opportunity to apply knowledge and skills relevant to public health practice, such as, social determinants, outbreak investigation, policy analysis, regulatory decision-making, ethics, program development, program evaluation, screening programs, working with stakeholders, social marketing, health risk communication, and emergency preparedness. The core disciplinary competencies in public health are covered in detail in these cases. Discussing these cases will provide students with an approach for developing competency in communication, diversity and culture, leadership, professionalism, program planning, and systems thinking.

PPR 6004 INTRODUCTION TO HOSPICE AND PALLIATIVE CARE 2-0-0-2

This course introduces students to hospice and palliative care. Students learn how medication therapy changes as a patient's condition, goals of care, and prognosis change. Students are introduced to management of both common diagnoses and symptoms in hospice and palliative care patients. Small ethical discussions involving appropriate therapy at the end of life occur. The course gives students the opportunity to practice looking up drug information questions and giving verbal pharmacotherapy recommendations.

PPR 6005 MEDICAL INFORMATICS 2-0-0-2

This course provides an introduction to medical informatics and use of related technologies in the provision of healthcare with a focus on electronic health records, computerized order entry with medical logic modules, evidence based medicine and clinical practice guidelines, pharmacy systems and E-prescribing, health information exchange, telehealth, medical mobile technology, and consumer health informatics.

PPR 6006 GERIATRICS PHARMACOTHERAPY 2-0-0-2

This course is designed to introduce the student to the physiologic, pharmacologic and sociologic aspects of aging and to allow the student to gain a rudimentary appreciation and understanding of drug therapy issues to consider in the elderly. The course will focus on: 1) physiological and practical aspects of medication use in the elderly, 2) the pharmacist's role in geriatric care, and 3) the management of disease states and syndromes most commonly encountered in the elderly. The use of a case study format in class along with didactic presentations will allow the student to gain experience in designing and monitoring drug regimens for the geriatric patient.

PPR 6007 ADVANCED PAIN MANAGEMENT AND INTRODUCTION TO HOSPICE AND PALLIATIVE CARE 3-0-0-3

This course builds on the foundational knowledge about pain management taught in PPR 6710. Students will go over cases and concepts about pain management in more depth than covered in PPR 6710. This course also introduces students to hospice and palliative care. Students learn how medication therapy changes as a patient's condition, goals of care, and prognosis change. Students are introduced to management of both common diagnoses and symptoms in hospice and palliative care patients. Small ethical discussions involving appropriate therapy at the end of life occur. The course gives students the opportunity to practice looking up drug information questions and giving verbal pharmacotherapy recommendations.

PPR 6008 INTRODUCTION TO PSYCHOSOCIAL PHARMACY 2-0-0-2

This course is designed to introduce the student to the behavioral and social aspects of patient care. With the advent of the collaborative model of health care, it is imperative that today's pharmacist is equipped to provide optimum patient care within a psychosocial framework. This course provides an introduction to multiple aspects of the psychosocial approach to health care, including interprofessional communication in drug therapy management, the patient's role in treatment decisions, psychosocial determinants of medication adherence, ethical issues of pharmaceutical care, and developments in behavioral medicine.

PPR 6X08 INDEPENDENT RESEARCH IN PHARMACY PRACTICE 3-0-0-3

This research elective course provides professional pharmacy students with opportunities in social, administrative, and clinical research in the Pharmacy Practice Department. Through the students'

self-directed initiative and expertise of a faculty mentor, the student will advance their knowledge, research acumen and technical skill set in a defined area of the social, administrative, and clinical research