Nontraditional Doctor of Pharmacy Degree Program  
University of Colorado Denver School of Pharmacy  
Course Descriptions

Clinical Skills Foundations  
PRDO 7700  
2 credit hours  
This course is a prerequisite for all Advanced Disease State Management courses.

This course combines three important areas that together form an appropriate foundation for the Advanced Disease State Management courses. The first component provides orientation to the professional skills development sections of the Advanced Disease State Management courses. It focuses on developing an organized approach to drug-related problems, and includes experience in case presentations using the S.O.A.P. format, medication histories, problem-solving techniques, assessment of drug-related problems, and discussion of risk, responsibilities, and liabilities of clinical pharmacy practice.

The second component is an 8-week segment on pharmacokinetics and pharmacodynamics. It is taught with a combination of lectures, readings, and problem-based exercises. It includes a review of basic applied pharmacokinetics principles and individualization of drug dosing. The main focus of the course is to address issues of pharmacodynamics, physiologic determinants of drug disposition, protein binding, drug disposition in liver disease, and the use of assays in applied pharmacokinetics. The third component focuses on pathophysiology, pharmacotherapeutics, and professional skill development for fluids and electrolytes and acid-base disorders. This emphasizes management of disorders of sodium, chloride, potassium, calcium, and phosphate balance, as well as metabolic and respiratory acidosis and alkalosis. This segment is 4 weeks long.

Evidence-Based Pharmacy Practice  
PRDO 7240  
3 credit hours  
This course is a prerequisite for Advanced Drug Literature and Evaluation with Clinical Applications (PRDO 7460), and for Instructional Methods (PRDO 7760).

This course introduces the pharmacist to the concepts and analytical foundation underlying evidence-based pharmacy practice. Course content will focus on: concepts of evidence-based practice; fundamentals of research including measurement, reliability, validity, and ethical concerns; an overview of the FDA drug approval process; clinical research designs; data analysis and presentation; the structure and evaluation of clinical research proposals and reports; and pharmacoeconomics. Upon completion of the course, the student will be able to critically evaluate the medical literature for use in clinical and/or administrative decision-making.
Advanced Drug Literature Evaluation and Clinical Applications
PRDO 7460
1.5 credit hours
Required Prerequisite: Evidence-Based Pharmacy Practice (PRDO 7240)
This course is a prerequisite for Instructional Methods (PRDO 7760) and for the Drug Information Advanced Pharmacy Practice Experience or Preceptorship (PRDO 8300).

This course will strengthen the skills necessary to allow practicing pharmacists to provide accurate, unbiased, and relevant drug information. The pharmacist will develop approaches to problem solving methods, communication skills, and advanced techniques in literature retrieval, evaluation, and application. The format includes lectures, discussions, and activities. It will focus on the following competencies: determining drug information needs, collecting patient and request-specific data, identifying potential drug information resources, establishing and utilizing search strategies, applying advanced techniques for evaluating literature, utilizing drug literature in clinical situations, developing a framework of a drug information response, formulating recommendations, and providing responses to drug information requests.

Immunology
PRDO 7010
3 credit hours
This course is highly recommended for to Advanced Disease State Management III: Infectious Diseases and Pediatric Disorders (PRDO 7330) and Advanced Disease State Management IV: Oncology and Rheumatology Disorders (PRDO 7340), but is not a prerequisite.

This course includes basic concepts of immunology, immunopathology, immunopharmacology and immunotherapy. It addresses the pathogenesis of diseases associated with the immune system such as hypersensitivity disorders, HIV/AIDS, autoimmune and rheumatic diseases, graft-versus-host disease and transplantation immunology, infectious diseases, and the role of the immune system in oncology. It also addresses the effects and outcomes of drugs and drug therapy and their impact on the immune system. Clinical applications of immunology, such as hypersensitivity reactions, allergic rhinitis, graft versus host disease, and biologic treatments of cancer are included.

Advanced Disease State Management I: Cardiovascular and Renal Disorders
PRDO 7310
3.5 credit hours
Required Prerequisites: Clinical Skills Foundations (PRDO 7700)
This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, basic physical assessment skills, and professional skills development for patients with common cardiovascular and renal disorders. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. Major cardiovascular disorders include hypertension, dysrhythmias, lipid disorders, congestive heart failure, myocardial infarction, and acute coronary syndrome. Major renal topics include acute and chronic renal failure, dialysis of drugs, drug disposition in renal failure, and drug-induced renal disease.
Advanced Disease State Management II: Gastrointestinal and Nutrition Disorders and Critical Care
PRDO 7320
4 credit hours
Required Prerequisites: Clinical Skills Foundations (PRDO 7700)
This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, basic physical assessment skills, and professional skills development for patients with common gastrointestinal and nutritional disorders, and for critical care. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. Major gastrointestinal disorders include pancreatitis, inflammatory bowel disease; diarrhea and constipation; alcoholic liver disease; acute liver failure; peptic ulcer disease and gastric esophageal reflux disease; and hepatitis. Major nutritional topic areas include nutritional assessment; parenteral and enteral nutritional support; nutrition in special populations, and nutritional supplements. Critical care topics include antibiotic use in the ICU; hypertensive crisis; shock; and sedation; neuromuscular blockade; and stress-induced mucosal bleeding.

Advanced Disease State Management III: Infectious Disease and Pediatric Disorders
PRDO 7330
4 credit hours
Required Prerequisites: Clinical Skills Foundations (PRDO 7700)
Highly Recommended: Immunology (PRDO 7010)
This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, basic physical assessment skills, and professional skills development for infectious diseases and pediatrics disorders. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. The infectious disease module includes basic microbiology; clinical use of antibiotics; management of viral, fungal, mycobacterial, and protozoal infections; infections of the upper and lower respiratory tracts, urinary tract, CNS, skin and soft tissues; common childhood infectious diseases; bone and joint infections; HIV/AIDS; sexually transmitted diseases; and immunizations. The pediatrics section addresses approach to the pediatric patient; normal growth and development; common problem-solving in pediatric patients; and a body-system approach to management of common pediatric disorders.

Advanced Disease State Management IV: Oncology and Rheumatology Disorders
PRDO 7340
4 credit hours
Required Prerequisites: Clinical Skills Foundations (PRDO 7700)
Highly Recommended: Immunology (PRDO 7010)
This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, basic physical assessment skills, and professional skills development for oncology and rheumatology disorders. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. Major topics in oncology include clinical use of antineoplastics; common solid tumors such as breast, lung, colon and prostate
cancers, leukemias and lymphomas; pain and palliative care; nausea and vomiting management; stem cell transplantation; preventing chemotherapy errors; pediatric oncology; and alternative cancer therapies. Rheumatologic topics include assessment of rheumatology patients; rheumatoid and osteo arthritis; osteoporosis; and gout and hyperuricemia.

**Advanced Disease State Management V**
**Psychiatric and Neurologic Disorders, and Geriatrics**
PRDO 7350
4 credit hours
Prerequisites: Clinical Skills Foundations (PRDO 7700)
This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, basic physical assessment skills, and professional skills development for neurologic, psychiatric, and geriatric disorders. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. Major topics in neurology include seizure disorders; multiple sclerosis; headache; chronic pain; Parkinson’s disease; traumatic brain injury; and coma. Psychiatry addresses major affective disorders; anxiety; sleep disorders; schizophrenia; attention deficit disorders; substance abuse and a brief toxicology section addressing general principles of poison control, use of antidotes and management of common overdoses. The major topics in geriatrics are physiologic changes with aging; Alzheimer’s disease and other dementias; incontinence and BPH.

**Advanced Disease State Management VI**
**Endocrinology, Hematology and Pulmonary Disorders**
PRDO 7360
4 credit hours
Prerequisites: Clinical Skills Foundations (PRDO 7700)
This course combines the elements of pathophysiology, advanced pharmacotherapeutics management, basic physical assessment skills, and professional skills development for endocrinology, hematology, and pulmonary disorders. The course incorporates the principles of applied and active learning using a combination of lecture and interactive formats. Major topics in endocrinology include diabetes and its complications; metabolic syndrome; osteoporosis; obesity; hormone replacement therapy; contraception and infertility; and thyroid and adrenal disorders. The hematology section addresses anemias; and coagulation disorders; and acute and chronic anticoagulation. Major pulmonary topics are acute and chronic asthma; COPD; cystic fibrosis; and pulmonary function testing.

**Instructional Methods with Seminars in Pharmaceutical Care**
2 credit hours
PRDO 7560
Prerequisites: Evidence-Based Pharmacy Practice (PRDO 7240), Advanced Drug Literature Evaluation (PRDO 7460) and at least two Advanced Disease State Management courses
This course is designed to provide the pharmacist with basic skills in lecture development and presentation. It will include instructional methods theory, such as levels of learning, and design of learning objectives and assessment tools. Presentation skills for addressing health care professional audiences and small group teaching will be addressed. In the seminar component
of the course, pharmacists will prepare brief teaching presentations on pharmacy practice or pharmacotherapeutics topics. Presentations include PowerPoint slides. One short presentation is recorded online; the other is a CE-style presentation delivered to a small audience of colleagues, and videotaped. Presentations will be critiqued and self-assessed for content and presentation skills as a tool for development of teaching skills. Pharmacists will be asked to develop constructive feedback for selected presentations.