

Memorandum

TO: Michael T. Nietzel, Ph.D. Provost
Deans, Department Chairs, Members of the University Senate

FROM: Kenneth B. Roberts, Ph.D.
Dean

DATE: January 6, 2004

RE: Approval for New Courses

The College of Pharmacy requests approval of four new courses, Advanced Pharmacotherapy I – IV (PHR 956, 957, 966, 967).

PHR 956 Advanced Pharmacotherapy I, 5 credits

An advanced study of the pathology, pathophysiology and optimal treatment of common diseases. Through a series of case studies students will acquire and/or reinforce their skill at understanding diseases and developing and defending optimal treatment plans for successfully managing those diseases. The case studies utilized will integrate relevant pathophysiological, pharmacokinetic, pharmacoeconomic and pharmacological concepts with appropriate patient specific parameters. Students will be expected to communicate and defend their decisions, including the process followed in making those decisions, in understandable, appropriate written and verbal formats. Variable mixture of discussion, lecture, independent study and laboratory. Taught part of term.

Prerequisites: Admission to the third year College of Pharmacy

PHR 957 Advanced Pharmacotherapy II, 5 credits

A continuation of PHR 956.

Prerequisites: Admission to the third year College of Pharmacy

PHR 966 Advanced Pharmacotherapy III, 5 credits

A continuation of PHR 957.

Prerequisites: Admission to the third year College of Pharmacy, PHR 956, PHR 957 and PHR 959.

PHR 967 Advanced Pharmacotherapy IV, 5 credits

A continuation of PHR 966.

Prerequisites: Admission to the third year College of Pharmacy, PHR 956, PHR 957 and PHR 959.

Each of the courses in this new sequence concentrates on the pharmacotherapy of specific diseases integrated with a discussion of the relevant pathology and pathophysiology. The four new courses, a total of 20 credits, will replace two courses in pathology (3 credits each) and two courses in therapeutics (7 credits each). There is no change in total credits devoted to this general area, the total number of credits taken during any one semester or the total number of credits required for graduation.

The new courses will only be taken by students in the College of Pharmacy and not by students in any other department.

The therapeutics portions of the new courses will be taught by faculty in the College of Pharmacy. The pathology/pathophysiology components of the new courses will be taught primarily by faculty in the Department of Pathology and Laboratory Medicine, College of Medicine. Faculty in the Department of Pathology and Laboratory Medicine have been involved in the planning for this new integrated course sequence and the Chair of the Department is supportive of this proposal.

The rationale for this proposal is the course material can be more effectively and efficiently taught in an integrated format where pathology and pathophysiology are integrated with therapeutics in individual courses, rather than the current situation where pathology/pathophysiology and therapeutics are taught in separate parallel courses.

Course Description

PHR 956 Advanced Pharmacotherapy I
PHR 957 Advanced Pharmacotherapy II
PHR 966 Advanced Pharmacotherapy
III
PHR 967 Advanced Pharmacotherapy IV

College of Pharmacy
University of Kentucky

Course Director:

Thomas S. Foster, Pharm.D.
Professor

Pharmacokinetics Coordinator:

George A. Davis, Pharm.D.
Assistant Professor

Pathology Coordinator:

Paul Murphy, M.D.
Assistant Professor

COURSE DESCRIPTION: Meeting the extraordinary challenges of the era of managed health care has resulted in a commitment by the profession of Pharmacy to focus on the individual needs of patients through the process of pharmaceutical care. The principles underpinning pharmaceutical care must be understood and applied by pharmacy practitioners. It requires critical analysis of drug therapy and monitoring to assure optimal drug efficacy and safety in conjunction with cost-effectiveness. Integration of pathology, pharmacology and pharmacokinetic/dynamic principles is necessary in order to design a rational treatment approach in all disease states. This course is designed to provide Doctor of Pharmacy candidates with a comprehensive and intensive overview of the methodology used in the development and implementation of patient-specific therapeutic treatment plans. The course series will be taught in a modular format focusing on primary disease entities that will be encountered by pharmacists. Class meetings will emphasize the application of pathophysiological and pharmaceutical science and practices to patient care. Discussions will be provided to allow the interchange necessary to explain individual judgements. Active learning processes will be employed in order to facilitate inter-professional communication skills and to allow students exposure to a variety of medical and pharmacy practitioners. The course has been planned to interface with the CAPP (PHR 959-969) sequences primarily through integrated cases and other experiential components. In addition, the course also includes a Capstone Case program, which provides an innovative individualized and group/ team instructional technique utilizing comprehensive patient cases. This program is designed to improve the clinical problem – solving skills of the student learners.

Module Presentation Schedule:

Advanced Pharmacotherapy, PHR 956,957,966, 967	
<u>Fall Semester</u>	<u>Spring Semester</u>
<u>Module</u>	<u>Module</u>
PHR 956	PHR 966
Infectious Disease	Endocrine Disease
Inflammatory, Bone/Joint and Collagen Vascular Diseases	Women's Health
Pain Management	Psychiatry
Neoplasia and Oncologic Disease	Neurological Diseases
PHR 957	PHR 967
Cardiovascular Disease	Gastrointestinal Diseases
Pulmonary Disease	Hematological Disease
Nutrition	Renal / Urologic Diseases

GLOBAL COURSE OBJECTIVES/OUTCOMES:

Following completion of this series of courses, students will be able to:

1. Appreciate the etiology, pathogenesis, and clinical significance of disease processes, with emphasis on those diseases that are amenable to drug therapy.
2. Understand how disease processes manifest at the gross, cellular, and molecular levels. This will help in the understanding of how and why certain drugs have beneficial effects in certain diseases, as well as why they have their various side effects.
3. Formulate pharmacotherapy plans for a variety of patient situations
 - Devise an initial dosage regimen and monitoring strategy, using pharmacokinetic principles and methods, for drugs with a narrow therapeutic range or marked variability in their disposition
 - Recommend modifications in drug therapy based on the changes in the patient's condition that alter drug kinetics.
 - Recommend appropriate revisions in drug therapy using pharmacokinetic principles when appropriate
 - Recommend modifications in drug therapy based on the changes in the patient's condition that alter drug kinetics.
 - Recommend appropriate revisions in drug therapy using pharmacokinetic principles when appropriate (e.g., any untoward drug effect has been detected, desired drug concentration not achieved, or therapeutic endpoint not achieved).
4. Evaluate the scientific and clinical literature in terms of validity of results and clinical applications.
5. Be knowledgeable of interprofessional communication skills required for effective "team work" and cooperation critical to the achievement of optimal patient care.

In addition to global learning objectives and outcomes, each disease module will have specific learning objectives/ outcomes. Examples from the Infectious Disease, Oncology and Cardiovascular Modules include:

Infectious Disease Module Objectives:

- Differentiate between the various types of pathogens that cause infectious disease including bacteria, fungus, and viruses.
- List the steps in the Gram-stain process.
- Discuss the basic types of antimicrobial agents and the role of each in the treatment of infectious disease.
- Select antimicrobial therapy in a variety of infectious disease processes in the setting of the emergence of resistant pathogens.
- Describe the role of new antimicrobial agents in the treatment of infectious diseases caused by resistant pathogens.
- Describe the mechanisms of resistance found in common bacterial pathogens.
- Differentiate eukaryotic cells from prokaryotic cells.

- Describe the use and toxicity of antimicrobials, antifungals, and antiviral drugs, and discuss their mechanisms of activity.
- Prepare a monitoring form for selected antimicrobial agents to maximize effectiveness and to minimize toxicity and adverse effects.
- Given a case study of an infectious process, select appropriate therapy and describe the best practice model for pharmacist monitoring of therapy.

Neoplasia and Oncology Module Objectives:

- Discuss the frequency and mortality of common cancers
- Counsel a patient about ways to reduce their risk of developing cancer
- Know the current cancer screening recommendations and efficacy of cancer screening in terms of mortality.
- Understand tumor cell kinetics and cell cycle components as well as cancer chemotherapy pharmacology so that appropriate treatment recommendations can be made regarding a specific patient.
- Describe the philosophy behind combination chemotherapy and methods used to combine different agents
- Recommend a treatment regimen for a specific patient based on histology, stage, chemotherapy toxicity, and comorbid disease.
- Discuss treatment goals for different therapeutic modalities in patients with different diseases, as well as evaluate responses to therapy.
- Manage or prevent tumor or treatment toxicities; including the recognition and treatment of oncologic emergencies

Cardiovascular Disease Module Objectives:

- Interpret the results of a variety of tests and examinations used in the evaluation of the cardiovascular system and their impact on developing a pharmaceutical care plan in the treatment of cardiovascular diseases.
- Identify and utilize key Internet resources and clinical practice guidelines developed by national organizations to increase cardiovascular disease awareness, knowledge and treatment by patients and health care professionals.
- Discuss the results from recently published clinical trials in the primary literature and their potential impact on clinical practice guidelines developed for the treatment of cardiovascular diseases.
- Develop a rational pharmaceutical care plan for a patient with atrial fibrillation, hypertension, hyperlipidemia, peripheral vascular disease, ischemic heart disease, congestive heart failure, and endocarditis.
- Identify the role of the pharmacist in the selection and monitoring of drug therapy prescribed for the treatment of cardiovascular diseases.

The required textbooks and manuals for this course are:

1. Pharmacotherapy - A Pathophysiologic Approach, 5th Edition / DiPiro
2. Pharmacotherapy Casebook, A Patient-Focused Approach 5th Edition / Schwinghammer
3. Clinical Pharmacokinetics Service, Department of Pharmacy/University of Kentucky
Policy/ Procedure Manual, 7/03 (26th edition) edited by George A. Davis, Pharm.D.
4. Applied Clinical Pharmacokinetics, 1st Edition / Bauer
5. Robbins Pathologic Basis of Disease, 6th Edition, R. Cotran, V. Kumar and T.

Collins, W.B. Saunders.

When supplemental reading articles are required that are not contained in textbooks or workbooks required in the course, the articles will be provided along with learning objectives. The course will also rely substantively on the use of the BLACKBOARD® as an instructional tool