

**PHA 5121**

**Advanced Clinical Pharmacokinetics**

**<http://www.cop.ufl.edu/safezone/pat/pha5121/index.htm>**

**2 Credits**

**Spring 2008**

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**Goal:** Understanding the importance of drug concentration/time and concentration/effect relationships for optimal drug therapy.

**Course Description:**

An advanced course on pharmacokinetics and pharmacodynamics of the time course of drugs in the body. Pharmacokinetic aspects include absorption, distribution metabolism, and elimination. Pharmacodynamic aspects include quantitative relationships between drug concentration and wanted or undesired effects.

**Office Hours:** Friday, 11:30 to 12:30

Also, please call or e-mail anytime

**Course Assignments**

- 1) Term Paper (60%) Each student has to prepare a term paper on a pharmacokinetic/pharmacodynamic topic. The paper will be presented in class (15 min). Both oral and written performance will be graded (each 30%).
- 2) Case Study (40%) Each student will present an interesting pharmacokinetic case based on their experience during their clerkship. The case needs to be presented in class and be submitted in writing (each 20%).

Academic Honesty Guidelines:

Academic honesty guidelines are outlined in the University of Florida *Student Guide* and in the College of Pharmacy *Student/Faculty Handbook*. These guidelines will be strictly adhered.

**Recommended Reading:** William E. Evans, Jerome J. Schentag and William Jusko (eds)

*Applied Pharmacokinetics* 3<sup>rd</sup>. Ed.

Michael E. Winter's

*Basic Clinical Pharmacokinetics* 4th Ed.

Applied Therapeutics, Inc., Vancouver, WA

Malcolm Rowland & Thomas N. Tozer, *Clinical Pharmacokinetics Concepts and Applications* 3rd ed. Lea & Febiger Philadelphia, 1995

Milo Gibaldi, *Biopharmaceutics and Clinical Pharmacokinetics*, 4th ed. Lea & Febiger, Philadelphia 1991

Joseph T. DiPiro, Robert A. Blouin, Jane M. Pruemmer, William J. Spruill, *Concepts in Clinical Pharmacokinetics*, 2<sup>nd</sup> Edition American Society of Hospital Pharmacists, Bethesda, 1996

**Calculators:** Scientific calculators, Excel worksheets

**It is the formal policy of this class that in order to fully and properly full the requirements of this course some use of and proficiency in the use of computers, including access to and use of the Internet (email and World Wide Web), will be required.**

## **COURSE OBJECTIVES:**

At the end of this course the student should be able to:

1. Understand the theoretical background of the pharmacokinetic and pharmacodynamic behaviour of drugs.
2. Understand the influence of dosage forms, dosing regimens and dose on drug levels and to understand the relationship between drug concentration, effect and side effects.
3. Design optimized dosing regimens for patient care utilizing drug monitoring techniques and computer technology.
4. Apply the above principles for pharmacokinetic pharmacodynamic decision making and improvement of patient care.
5. Understand research and development strategies in the development of new drug products.

## **STUDENT COMPETENCIES:**

- A. Recognize and resolve preventable drug-related problems.
- B. Recognize and resolve ethical dilemmas in appropriate ways.
- C. Design, implement, monitor, evaluate, document, and modify or recommend modifications in pharmacotherapy to insure effective, safe and economical pharmaceutical care.
- D. Effectively communicate and educate both patients and other health care professionals in order to optimize pharmacotherapy and prevent future health problems.
- E. Implement rational pharmacotherapy based on a mastery of biomedical (e.g. physiology, anatomy and immunology), pharmaceutical (e.g. pharmacology, toxicology, both pharmaceutical and medicinal chemistry, and pharmacy administration) and clinical (e.g. epidemiology, pathophysiology, pharmacokinetics and therapeutics) sciences.
- F. Critically evaluate new advances in pharmacotherapy or systems of care and effectively utilize this new knowledge in patient care.