

Course Syllabus

Phar 6163 Pharmacokinetics 3 credits, Fall 2007

Course Objectives

This course is designed to acquaint the student with the fundamental concepts that determine the time-course of drug concentrations in the body, during single and chronic dosing. The course will cover the basic principles and concepts of pharmacokinetics and pharmacodynamics that affect the absorption, distribution, metabolism, excretion and action of drugs in the body. At the conclusion of the course, each student should be able to:

1. **Describe** the physiological determinants of the primary pharmacokinetic parameters of clearance and volume of distribution.
2. **Determine** primary and secondary pharmacokinetic parameters from concentration-time data.
3. **Design** a pharmacokinetically-based dosage regimen for an individual patient.
4. **Modify** a dosage regimen for a patient based on the physiological changes brought about by disease or concomitant drug therapy.
5. **Apply** pharmacokinetic concepts to a particular drug therapy to solve relevant problems in pharmaceutical care.

Course Director

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Course Instructors (Faculty)

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Format

The format of this course will be lectures, workshops, quizzes and examinations. The lecture topics, the suggested reading material in the optional text, and the homework assignments are listed in the course *Schedule*. The workshops on specific topics will be held after that topic has been discussed in lecture. The purpose of the workshops is to help the student develop skills and understand the fundamental concepts through the use of active discussion and problem-based learning.

Requirements

Throughout the term there will be **ten short quizzes** (sum total, 20% of grade) designed to aid the student in actively learning the material and concepts. There will be **three 2-3 hour midterm exams** during the semester (see *Schedule*). These midterm exams will each be worth 15% of the final grade. The **final exam** will be **comprehensive**, i.e., it will cover material from the entire semester. The final exam will be worth 35% of the final grade.

Special times for Midterm Exams

The three midterm exams for Phar 6163 will be held from 4-7 pm on October 8, November 5, and December 3 in WDH 7-135 and Jackson Hall 2-137, and Life Sciences 163 in Duluth. We are scheduling the midterms outside of the normal class time to allow for a minimum 2-3 hour block. Given the nature of the problem-based exams in pharmacokinetics, it is necessary for the students to have more than 50 minutes to complete the exam. Many students have the ability to do the problems given adequate time, and I feel it would not be a true test of their abilities and knowledge if time to complete the exam problems is limiting performance. Moreover, scheduling the exams in one or more rooms that have a larger seating capacity and one that has a table format, will allow students to complete the exam in much less crowded, and therefore more comfortable, conditions. The time constraint and the crowded room offered by the heavy use of WDH 7-135 should not be factors in assessing student performance. The exams for the students on the Duluth campus will be at the same times in Life Sciences 163.

Cell phones or PDAs may not be used during exams (or in class). Students are required to bring their own calculators, as well as a ruler and pen or pencil. No other materials will be permitted during an exam. A list of equations, linear-linear graph paper and 3-cycle semilog graph paper will be appended on each exam.

Students who have questions regarding the grading of the **quizzes** or **midterm exams** must submit them in writing to the instructor within one week following the return of the quiz or exam. **Final exams** may be reviewed until Friday of the first week of the Spring Semester.

Grading

Quizzes	20%	(the lowest quiz score (one quiz) will be dropped in computing the average)
Midterm Exam 1	15%	
Midterm Exam 2	15%	
Midterm Exam 3	15%	
<u>Final Exam</u>	<u>35%</u>	
Total	100%	

Grades will be assigned for Phar 6163 according to the following ranges:

Grade	% Range	Grade	% Range	Grade	% Range
A	94-100	B-	80-82	D	60-69
A-	90-93	C+	77-79	F	less than 60
B+	87-89	C	73-76		
B	83-86	C-	70-72		

Optional Textbook, Lecture Notes and Internet Materials

The optional text for this course is *Introduction to Pharmacokinetics and Pharmacodynamics (the quantitative basis of drug therapy)*, T.N. Tozer and M. Rowland, 1st edition, Lippincott William & Wilkins, 2006.

Lecture notes (packet) and workshops (day of workshop) will be handed out, and posted on the WebCT site for the course. The solutions to the workshops and problems sets with solutions will be posted on the course WebCT site.

Other texts that may be useful for reference include:

1. *Clinical Pharmacokinetics: Concepts and Applications*, M. Rowland and T.N. Tozer, 3rd edition, Lea and Febiger, Philadelphia, 1995.

2. *Applied Biopharmaceutics and Pharmacokinetics*, L. Shargel and A.B.C. Yu, 5th edition, Appleton and Lange, Norwalk, CT, 2005.

Honor Code

Each student is bound by the following specific provisions as part of the Code: Academic misconduct is any unauthorized act which may give a student an unfair advantage over other students, including but not limited to: falsification, plagiarism, misuse of test materials, receiving unauthorized assistance and giving unauthorized assistance. The honor code will be in place for any graded homework, exams and quizzes. Specifically, each student will be required to do her/his own work on these requirements. Students will reaffirm the Honor Code once per semester outside of class time, and be periodically reminded that the code is in place throughout the semester.

Make-up Policy

A make-up quiz or exam may be allowed only under one of the following circumstances: illness, verified by a note from a medical doctor; a family emergency, verified by a note from the professional person in attendance; or a University of Minnesota-sponsored event, verified by a note from the leader of the sponsoring organization.

Disability Accommodations

Any student with a documented disability (e.g., physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations for classroom seating or for exams must contact the course director (625-0097) and Disability Services (626-1333) by the end of the second week of the semester. All discussions will remain confidential.

