Principles of Pharmacokinetics and Biopharmaceutics
PHAR 7302
Fall Semester 2020

Course Description
Qualitative and quantitative understanding and application of pharmacokinetics focusing on the processes of drug absorption, distribution, metabolism, and elimination.

Additional Course Information
This course provides the theoretical building blocks necessary to design patient- and population-specific drug dosing regimens. The interrelationship between physiologic and biochemical processes and physicochemical drug properties influence drug disposition and pharmacologic response. A major component of this course includes mathematical modeling.

Course Credit: 3 credit hours

Pre-Requisites: PHAR 7402 – Pharmaceutics

Foundational Knowledge
1. Mathematical calculations including solving algebraic and calculus-based problems.
2. Chemistry fundamentals, including pH and pKa
3. Human anatomy and physiology

Co-Requisites: None

Class Meeting Days, Time & Location
Wednesdays, 3:00 pm – 5:00 pm; WTB 136 and WTB 137
Fridays, 9:00 am – 10:00 am; online
Optional Supplemental Instruction Session, Thursdays 1:00 pm – 2:00 pm; WTB 136

Course Coordinator
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Office hours: Mondays; Noon – 2:00 pm, or by appointment
Preferred method of contact: Email

Fisch College of Pharmacy (FCOP) and UT Tyler Policies
This is part 1 of the syllabus. Part 2 contains UT Tyler and the FCOP course policies and procedures. These are available as a PDF at https://www.uttyler.edu/pharmacy/academic-affairs/files/fcop-syllabus-policies.pdf. For experiential courses (i.e., IPPE and/or APPE), the Experiential Manual contains additional policies and instructions that supplement the Syllabus Part 1 and 2. Please note, the experiential manual may contain policies with different deadlines and/or instructions. The manual should be followed in these cases.

Required Materials
Most course required materials are available through the Robert R. Muntz Library. These materials are available either online (http://library.uttyler.edu/) or on reserve.
1. Required materials will be posted on the classes' Canvas site at: uttyler.edu/canvas.

Course Format

The course may include, but is not limited to, the following activities:

1. Independent study of selected readings
2. Individual readiness assessment tests (iRATs)
3. Individual application of content and concepts
4. Team-based learning, active learning strategies:
    a. Team readiness assessment tests (tRATs)
    b. Team application of content and concepts

Course Learning Outcomes (CLOs)

CLOs	Related PLO(s)	EPA	Assessment Methods	Grading Method[4]	PPCP Skill(s) Assessed	ACPE Std. 11 & 12
1. Demonstrates understanding of the qualitative and quantitative factors affecting the absorption, distribution, metabolism, and excretion of drugs.	1	1.1, 1.2	1, 2	ES RUB	1, 2	NA
2. Demonstrates proficiency in numeric calculations and graphical interpretations related to drug concentrations and pharmacokinetic processes and their clinical implications.	1, 2, 6	1.1, 1.2, 1.5, 3.2, 4.1	1, 2	ES	NA	NA
3. Selects specific drug products based on pharmaceutical, therapeutic, or bioequivalent parameters.	1, 2, 6	3.2, 4.1	1, 2	ES	NA	NA

Course Assessment Methods

	Assessment Method	Description
1	Final Exam Multiple Choice or Multiple Selection Question(s)	*Standard MCQ and Select All that apply questions.*
2	Final Exam Open Ended Question(s)	*Handwritten calculations using a rubric on paper and/or in ExamSoft.*

Grading Policy & Grade Calculation

Grades will be determined based on evaluation of individual and team readiness assessment tests (iRATs, tRATs), individual and team cumulative assessment tests (iCATs, tCATs), midterm examinations, final written examinations, skills assessments, graded application assignments, participation in team-based projects, peer evaluations and other assessment methods that may include, but not limited to, Objective Structured Clinical Examinations (OSCE). Examinations, RATs and CATs may consist of, but not limited to, multiple-choice, true/false, fill in the blank, short-answer, essay, and problem-based questions.

During the time the course is in progress, students whose cumulative course percentage falls below 70.0% may receive an academic alert and be subject to periodic course content review in special sessions with the course instructor(s). The student's faculty advisor may receive an academic alert to act upon on the student's behalf.

All examinations, tests, and assignments, including the final examination, may be **cumulative**. Students are responsible for material presented during the prior courses. The grading scale for all graded material is below. The final course grade will be assigned according to the calculated percentage and the percentages will not be rounded upward or downward. For additional information, see examination/assessment policy below.

Standard Grade Calculation*

Individual Grades (95%)	
iRATs	9%
Individual Applications	9%
Individual Examinations	
Exam 1 (Sep 23)	19%
Exam 2 (Oct 21)	19%
Exam 3 (Nov 18)	19%
Final Exam (Dec 2)	20%
Team Grades (5%)	
tRATs	3%
Team Applications	2%
Total	**100%**

The final course letter grade will be determined according to the following grading scheme:

A	90 - 100 %
B	80 - 89.999 %
C	70 - 79.999 %
D	65.0 - 69.999 %
F	< 65.0 %

Top 200 Medications: The medications covered during this course include, but are not limited to:
Check here if this section does not apply: √

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PHAR 7302 Course Schedule

WEEK	DAY	DATE	TOPIC	CLO[1]	WSOP Category[7]
1	W	8/26	Fundamental Pharmacokinetic Principles	1, 2, 3	S18.04, S18.09, S20.01
	F	8/28	Fundamental Pharmacokinetic Principles (online)		
2	W	9/2	Intravenous Bolus Dosing	1, 2	S01.11, S02.04, S15.16
	F	9/4	Intravenous Bolus Dosing (online)		
3	W	9/9	Intravenous Infusion	1, 2	S01.11, S02.04, S18.14
	F	9/11	Intravenous Infusion (online)		
4	W	9/16	IV Bolus and Infusion Workshop	1, 2	S01.11, S02.04, S18.14
	F	9/18	IV Bolus and Infusion Review (online)		
5	W	9/23	Exam 1		
	F	9/25	Exam 1 Review (online)		
6	W	9/30	Multiple Dosing – Intravenous Bolus Dosing	1, 2	S01.11, S15.16, S18.14
	F	10/2	Multiple Dosing – Intravenous Bolus Dosing (online)		
7	W	10/7	Distribution Pharmacokinetics	1, 2	S01.11, S02.04, S15.16
	F	10/9	Distribution Pharmacokinetics (online)		
8	W	10/14	Multiple dosing and Distribution Workshop	1, 2	S01.11, S15.16, S18.14
	F	10/16	Multiple dosing and Distribution Workshop (online)		
9	W	10/21	Exam 2		
	F	10/23	Exam 2 Review (online)		
10	W	10/28	Extravascular Dosing	1, 2, 3	S01.11, S10.03, S18.04
	F	10/30	Extravascular Dosing (online)		
11	W	11/4	Clearance and Nonlinearity	1, 2	S01.11, S05.08, S18.14
	F	11/6	Clearance and Nonlinearity (online)		
12	W	11/11	Extravascular and Nonlinearity Workshop	1, 2, 3	S01.11, S10.03, S18.14
	F	11/13	Extravascular and Nonlinearity Workshop (online)		
13	W	11/18	Exam 3		
	F	11/20	Exam 3 Review (online)		
14	W	11/25	Thanksgiving Break		
	F	11/27	Thanksgiving Break		
15	W	12/2	Final Exam		
	F	12/4	Final Exam Review (online)		
16			No exam during Finals Week		

***Readiness Assessment Tests are scheduled at the start of these class sessions.**

Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the change.