PHAR 7302
Principles of Pharmacokinetics and Biopharmaceutics
Fall 2025

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 influences drug disposition and pharmacologic response. A major component of this course includes mathematical modeling.

Course Credit: 3 credit hours

Class Meeting Days, Time & Location: Tuesday and Thursday, 1:00 pm – 2:30 pm; W.T. Brookshire Hall 235

Course Coordinator:
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Office hours: Tuesday and Thursday, 12:00 – 1:00 pm.
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 policies and procedures. 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. Most required materials will be posted on the classes' Canvas site at uttyler.edu/canvas
2. Scientific calculator for exponential computations and linear regressions (e.g., Texas Instruments 30Xpromp/Tbl/2E5 Scientific Calculator)
3. Ducharme, M.P. and Shargel, L. *Shargel and Yu's Applied Biopharmaceutics & Pharmacokinetics*, 8th Edition, McGraw Hill, 2022. (Electronic copy is available at the University library.)

Recommended Materials

Course Format
The course may include, but are not limited to, the following activities:

1. Independent study of selected readings
2. Individual readiness and other examinations
3. Individual application of content and concepts
4. Team activities.

Course Learning Outcomes (CLOs)

CLOs	PLO	EPAs	ACPE Appendix 1	NAPLEX	Assessment Methods
1. Demonstrates understanding of the qualitative and quantitative factors affecting the absorption, distribution, metabolism, and excretion of drugs.	1	1.1, 1.2	Pharmacokinetics Pharmaceutics/Biopharmaceutics	1.A.2 1.A.3 1.C.9	1, 2, 6
2. Demonstrates proficiency in numeric calculations and graphical interpretations of drug concentrations and pharmacokinetic processes and their clinical implications.	1, 2, 6	1.1,1.2, 1.5,3.2, 4.1	Pharmacokinetics Pharmaceutics/Biopharmaceutics	1.A.2 1.A.3 1.C.9	1, 2, 6
3. Selects specific drug products based on pharmaceutical, therapeutic, or bioequivalent parameters.	1, 2, 6	3.2, 4.1	Pharmacokinetics Pharmaceutics/Biopharmaceutics	1.A.2 1.A.3 1.C.9	1, 2, 6

Course Summative Assessment Methods

	Assessment/Examination Method
1	Question-based examination (ExamSoft or Canvas-based)
2	Question-based examination (paper-based)
6	Team Project

Grading Policy & Grade Calculation

Grades will be determined based on evaluation of assignments, formative assessments (for learning), and summative assessments (for mastery). For all intents and purposes, final examinations are synonymous with summative assessments. Assessments may consist of, but are not limited to, multiple-choice, true/false, fill in the blank, short-answer, essay, and problem-based questions. They may also include a variety of formats beyond the traditional question-based written examination, as each CLO may require different methods to determine student achievement.

Assignments, formative, and summative assessments may be **cumulative.** Students are responsible for material presented during 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 Part 2 of the syllabus.

During the time the course is in progress, students who obtain less than 75% on any summative assessment or a total course grade of less than 75% during a particular semester will receive an academic alert from the course coordinator and the Office of Academic Affairs and be subject to weekly in-course remediation with the course instructor(s).

Standard Grade Calculation*	
Individual Assessments: 98%	
iRATs	3%
Exam 1	20%
Exam 2	20%
Exam 3	20%
Final Exam	35%
Team Assessments: 2%	
tRATs	2%
Total	**100%**

The final course letter grade will be as follows:

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

If a student misses the exam or any graded activity with an unexcused absence from the class, their individual exam or graded activity score will be 0.

Appropriate Use of Artificial Intelligence

For this course, students can use AI platforms to help prepare for assignments and projects. You can use AI tools to revise and edit your work (e.g., identify flaws in reasoning, spot confusing or underdeveloped paragraphs, or correct citations). When submitting work, students must identify any writing, text, or media generated by AI. In this course, sections of assignments generated by AI should appear in a different colored font, and the relationship between those sections and student contributions should be discussed in a cover letter that accompanies the assignment when submitted. Because AI-generate content is not necessarily accurate or appropriate, you must assess the validity and applicability of any submitted AI output. You will not earn full credit if inaccurate, invalid, or inappropriate information is found in your work.

PHAR 7302 Course Schedule

WEEK	DAY		TOPIC	Instructor	CLO
1	Tue	8/26	Pharmacokinetics: Introduction	Fujiwara	1,2,3
	Thu	8/28	Pharmacokinetics: PK Models, Compartmental Models	Fujiwara	1,2
2	Tue	9/02	Pharmacokinetics: IV Bolus: One Compartment Model	Fujiwara	1,2
	Thu	9/04	Pharmacokinetics: IV Bolus: One Compartment Model	Fujiwara	1,2
3	Tue	9/09	Pharmacokinetics: IV Bolus: Multi-Compartment Model	Fujiwara	1,2
	Thu	9/11	Pharmacokinetics: IV Infusion	Fujiwara	1,2
4	Tue	9/16	Pharmacokinetics: IV Infusion	Fujiwara	1,2
	Thu	9/18	Pharmacokinetics: Intro, IV Bolus & Infusion	Fujiwara	1,2,3
5	Tue	9/23	Exam 1	Fujiwara	1,2,3
	Thu	9/25	Pharmacokinetics: Multiple IV Dosing	Fujiwara	1,2
6	Tue	9/30	Pharmacokinetics: Multiple IV Dosing	Fujiwara	1,2
	Thu	10/02	Pharmacokinetics: Distribution Kinetics	Fujiwara	1,2
7	Tue	10/07	Pharmacokinetics: Distribution Kinetics	Fujiwara	1,2
	Thu	10/09	Pharmacokinetics: Multiple Dosing, Distribution Kinetics	Fujiwara	1,2,3
8	Tue	10/14	Pharmaceutics/Biopharmaceutics: Extravascular Dosing, Absorption	Fujiwara	1,2,3
	Thu	10/16	Exam 2 (Comprehensive)	Fujiwara	1,2,3
9	Tue	10/21	Pharmaceutics/Biopharmaceutics: PK of Oral Absorption	Fujiwara	1,2,3
	Thu	10/23	Pharmaceutics/Biopharmaceutics: Bioavailability and Bioequivalence	Fujiwara	1,2,3
10	Tue	10/28	Pharmaceutics/Biopharmaceutics: Bioavailability and Bioequivalence	Fujiwara	1,2,3
	Thu	10/30	Pharmaceutics/Biopharmaceutics: Extravascular Dosing & Absorption, BA/BE	Fujiwara	1,2,3
11	Tue	11/04	Exam 3 (Comprehensive)	Fujiwara	1,2,3
	Thu	11/06	Pharmaceutics/Biopharmaceutics: Elimination and Clearance Concepts	Fujiwara	1,2,3
12	Tue	11/11	Pharmaceutics/Biopharmaceutics: Elimination and Clearance Concepts	Fujiwara	1,2,3
	Thu	11/13	Pharmacokinetics: Nonlinear PK	Fujiwara	1,2,3
13	Tue	11/18	Pharmacokinetics: Nonlinear PK	Fujiwara	1,2,3
	Thu	11/20	Pharmacokinetics: Model-Independent Kinetics	Fujiwara	1,2,3
14	Tue	11/25	Thanksgiving Break (11/24 to 11/28)	-	
	Thu	11/27	Thanksgiving Break (11/24 to 11/28)	-	
15	Tue	12/02	Pharmacokinetics and Pharmaceutics/Biopharmaceutics: Review – Part 1	Fujiwara	1,2,3
	Thu	12/04	Pharmacokinetics and Pharmaceutics/Biopharmaceutics: Review – Part 2	Fujiwara	1,2,3
	Wed	12/10	Final Exam (Comprehensive) (9 am – 12 pm)	Fujiwara	1,2,3

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.