

PHAR 7220: Therapeutic Drug Monitoring (TDM) and Clinical Pharmacokinetics (Clin - PK)
Spring Semester 2021

Course Description

This course prepares the student for the application and incorporation of therapeutic drug monitoring and clinical pharmacokinetics into the patient care process.

Additional information about the course

This course introduces the pharmacy student to a variety of medications that require monitoring for maximal therapeutic benefits while minimizing potential adverse events. Students will apply foundational knowledge of pharmacokinetics acquired in PHAR 7302, Principles of Pharmacokinetics and Biopharmaceutics, with normal laboratory values to make clinically appropriate recommendations for therapeutic drug dosing and monitoring.

Course Credit

2 credit hours

Pre-requisites

PHAR 7302

Co-requisites

None

Class meeting days, time, and location

Monday 9:00 AM to 11:00 AM CST

Location: via Zoom: <https://uttyler.zoom.us/j/93586426882?pwd=SXhyTUNiN3orcldoeGI6RWxNTWFIZz09>

Course Coordinator

David Romerill, Pharm.D., BCNSP

W.T. Brookshire Hall, Room #127

Phone Number: 903-566-6163

Email: dromerill@uttyler.edu

Preferred method of contact: E-mail

Office hours: Monday 4:00 – 5:00 PM and Friday 11:00 AM – 1:00 PM CST in WTB 127 or by appointment

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.

See the PHAR 7220 Online Course Attendance and Examination Policy in Canvas:

<https://uttyler.instructure.com/courses/24632/pages/attendance-and-examination-policy>

Required materials

Most course-required materials are available through the Robert R. Muntz Library. These materials are available either online (<http://library.utt Tyler.edu/>) or on reserve.

1. *Winter's Clinical Pharmacokinetics*, 6 e. Beringer PM, ed. Wolters Kluwer, ISBN-13: 978-1496346421, 2018. Available at: <https://pharmacy.lwwhealthlibrary.com/book.aspx?bookid=2276>
2. *Pharmacotherapy: A Pathophysiologic Approach*, 11e. DiPiro JT, Yee GC, Posey LM, Haines ST, Nolin TD, Ellingrod V, eds. McGraw-Hill Education, ISBN-13 978-1260116816, 2020.
3. Other required materials will be posted on the course Canvas site.

Course format

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

1. Independent study of selected readings
2. Individual readiness assessment tests (iRATs)
3. 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)	EPAs	Assessment Methods	Grading Method	PPCP Skill(s) Assessed (1-5)	AACP Std 11 & 12 (1-4)
1. Define basic pharmacokinetic parameters including volume of distribution, clearance terms, extraction ratio, elimination half-life, and unbound fraction.	1	N/A	1	ES	N/A	4
2. Identify and explain the clinical significance of linear and non-linear pharmacokinetic profiles of representative medications.	1,2,5	N/A	1	ES	N/A	4
3. Given a patient scenario, apply pharmacokinetic principles to recommend initial dosing regimens and monitoring parameters for medications in the following medication classes: <ol style="list-style-type: none">a. antibioticsb. antifungalsc. immunosuppressantsd. anti-epileptics	1,2,6	N/A	1,2	ES	1-5	4
4. Recommend dose adjustments and monitoring parameters based on plasma drug concentrations and other laboratory results.	1,2,6	N/A	1,2	ES	1-5	4
5. Document medication dosing and monitoring recommendations with appropriate lab assessments in SOAP format consult note.	2,6,9	N/A	2	RUB	N/A	1

Course assessment methods

	Assessment method	Description <i>Please provide a brief description of each summative assessment that you plan to use in this course to allow us to identify which ACPE standards are being assessed</i>
1	Exams may include multiple choice and multiple selection questions	Standard MCQ, True/False, matching, and select all that apply
2	Exams may include open-ended questions	Fill-in-the-blank, essay, and handwritten calculations.

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 examination, final written examinations, skills assessments, graded application assignments, participation in team-based projects, peer evaluations, and other assessment methods that may include, but are not limited to, objective structured clinical examinations (OSCEs). Examinations, RATs and CATs may consist of, but are 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 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 the examination/assessment policy below.

Standard Grade Calculation	
Individual component	95%
iRATs/Other individual activities	15%
Major assessments (Midterms/Final exams) Midterm 1 = 25% Midterm 2 = 25% Final Exam = 30%	80%
Team component	5%
tRATs	2.5%
Team application(s)	2.5%
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	65-69.999%
F	<65%

PHAR 7220: TDM + Clin PK

Spring 2021

Date	Topic	Instructor	CLO	Disease State
1/11	PK: Foundational Review #1	Brunner	1,2	S18.09, S18.14
1/18	<i>Martin Luther King, Jr. Holiday – No Classes</i>			
1/25	PK: Foundational Review #2	Brunner	1,3,4	S18.09, S18.14
2/1	TDM + Clin PK: Dosing Considerations for Renal Dysfunction and Renal Replacement Therapy	Romerill	1,3,4	S04.04 S04.08 S04.12
2/8	<i>Midterm Examination 1 – assesses 01/11 through 02/01 material</i>			
2/15	TDM + Clin PK: Vancomycin	Romerill	1,3,4	S15.16
2/22	TDM + Clin PK: Aminoglycosides 1	Romerill	1,3,4,5	S15.16
3/1	TDM + Clin PK: Aminoglycosides 2	Romerill	1,3,4,5	S15.16
3/8 – 3/14	<i>Spring Break – No Class</i>			
3/15	TDM + Clin PK: Antifungal Agents	Romerill	1,3,4	S15.16
3/22	<i>Midterm Examination 1 – assesses 2/15 through 3/15 material</i>			
3/29	TDM + Clin PK: Immunosuppressants	Romerill	1,3,4	S10.03
4/5	TDM + Clin PK: Phenobarbital	Romerill	1,2,3,4	S05.08
4/12	TDM + Clin PK: Phenytoin	Romerill	1,2,3,4,5	S05.08
4/19	TDM + Clin PK: Valproic acid	Romerill	1,2,3,4	S05.08
TBD	<i>Comprehensive Final Examination – assesses 1/11 through 4/19 material</i>			