Therapeutic Drug Monitoring (TDM) and Clinical Pharmacokinetics (PK)
PHAR 7220
Spring Semester 2020

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
Fridays, 10:00 a.m. to 12:00 p.m.
W.T. Brookshire Hall #133

Course Coordinator
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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. Winter's Clinical Pharmacokinetics (6th edition). Paul M. Beringer, ed. Wolters Kluwer, ISBN-13: 978-1496346421, 2018.
2. Pharmacotherapy: A pathophysiologic approach (10th edition). Joseph T. DiPiro, Robert L. Talbert, Gary C. Yee, Gary R. Matzke, Barbara G. Wells, L. Michael Posey. McGraw-Hill Education, ISBN 978-1-259-58748-1, 2017.
3. Other required materials will be posted on the class's Canvas site. The site address is www.uttyler.edu/canvas.

Recommended materials
The course recommended materials are on reserve at the Robert R. Muntz Library.

1. Basic skills in interpreting laboratory data (5th edition). Lee M. American Society of Health-System Pharmacists. ISBN: 978-1-58528-343-9, 2013.

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: a. antimicrobials b. immunosuppressants c. anti-arrhythmic/antipsychotic d. 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.	2,6,9	N/A	1,2	ES, RUB	N/A	1

Course assessment methods

	Assessment method	**Description** *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*
1	Exams may include multiple choice, multiple selection question(s), and open-ended questions	Standard MCQ, T/F, matching, select all that apply, and handwritten calculations, fill-in-the-blank, or essay questions
2	Comprehensive case	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 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	85%
iRATs/Other individual activities	10%
Major assessments (Midterms/Final exams) Midterm 1 = 15% Midterm 2 = 25% Final Comprehensive Case = 15% Final Exam = 20%	75%
Team component	15%
tRATs	5%
Team application(s)	5%
Comprehensive Case(s)	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 + PK Course Schedule UPDATED – Spring 2020

DATE	TOPIC	INSTRUCTOR	CLO	DISEASE
01/17	Pharmacokinetics: Foundational Review #1	Brunner	1,2	
01/24	Pharmacokinetics: Foundational Review #2	Brunner	1,2	
01/31	Clinical Pharmacokinetics: Special Populations #1	Romerill	1,3,4	S18.09, S18.14
02/07	Clinical Pharmacokinetics: Special Populations #2	Romerill	1,3,4	S18.04
02/14	**CAT 1**			
02/21	Clinical Pharmacokinetics: Vancomycin	Romerill	1,3,4	S15.16
02/28	Clinical Pharmacokinetics: Aminoglycosides	Romerill	1,3,4,5	S15.16
03/06	Clinical Pharmacokinetics: Antifungal Agents	Romerill	1,3,5	S15.16
03/09-13	SPRING BREAK. NO CLASSES			
03/20	Clinical Pharmacokinetics: Immunosuppressants	Romerill	1,3,4	S10.03
03/27	**CAT 2**			
04/03	Clinical Pharmacokinetics: Phenobarbital	Romerill	1,2,3,4	S05.08
04/10	Clinical Pharmacokinetics: Phenytoin	Romerill	1,2,3,4,5	S05.08
04/17	Clinical Pharmacokinetics: Valproic acid	Romerill	1,2,3,4	S05.08
04/24	**FINAL EXAM**			