



Jordan University of Science and Technology
Faculty of Pharmacy
Pharmacy Department

PHAR355 Biopharmaceutics And Pharmacokinetics

First Semester 2023-2024

Course Catalog

3 Credit Hours. This course (3.0 credits) includes a study of the physicochemical and biological factors involved in the absorption, distribution, and elimination of drugs as well as the method of calculating drug levels in blood and urine after single or multiple dosing by extravascular or intravenous routes. In addition to the concepts of bioavailability and bioequivalence.

Text Book

Title	Applied Biopharmaceutics and Pharmacokinetics
Author(s)	Murray P. Ducharme, Leon Shargel
Edition	8th Edition
Short Name	Reff#1
Other Information	McGraw-Hill?s (2022)

Course References

Short name	Book name	Author(s)	Edition	Other Information
Reff#2	Basic Pharmacokinetics	Sunil S. Jambhekar and Philip J. Breen	2nd Edition	Pharmaceutical Press (2009)

Instructor

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Instructor

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Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue : 09:30 - 10:30
Room: P1102

Section 2:
Lecture Time: Mon, Wed : 08:30 - 09:30
Room: P1101

Prerequisites

Line Number	Course Name	Prerequisite Type
302522	PHAR252 Pharmaceutics 1	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction to biopharmaceutics and pharmacokinetics	Ch1 From Ref#1, Ch1 From Ref#2
Week 2	Mathematical fundamentals in pharmacokinetics	Ch2 From Ref#1, Ch2 From Ref#2
Weeks 2, 3, 4	One-compartment open model: Intravenous bolus administration	Ch3 From Ref#1, Ch3 From Ref#2
Weeks 5, 6	Drug elimination and clearance concepts	Ch6 From Ref#1, Ch4 From Ref#2
Weeks 6, 7, 8	Pharmacokinetics of oral absorption	Ch7 From Ref#1, Ch5&6 From Ref#2
Week 9	Bioavailability and bioequivalence	Ch15 From Ref#1, Ch7 From Ref#2
Weeks 10, 11	Intravenous infusion	Ch5 From Ref#1, Ch10 From Ref#2
Weeks 12, 13	Multiple dosage regimens	Ch8 From Ref#1, Ch11&12 From Ref#2
Week 14	Nonlinear pharmacokinetics	Ch9 From Ref#1, Ch15 From Ref#2

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Explain the different terms used in pharmacokinetics that describe the different ADME processes that affect drugs exposure	5%	
Review the basic calculations needed for pharmacokinetic analysis	4%	
Utilize the mathematical models that describe drug disposition to analyze PK data after single intravenous bolus administration	21%	
Apply the needed PK models to analyze PK data after single extravascular administration	13%	
Apply the needed PK analysis to evaluate the bioavailability & bioequivalence of dosage forms administered by extravascular routes	5%	
Demonstrate how to analyze data after continuous and discontinued intravenous infusion in the presence and absence of loading intravenous bolus or zero-order infusion	18%	

Relationship to Program Student Outcomes (Out of 100%)															
PLO1.1	PLO2.1	PLO3.2	PLO3.3	PLO2.2	PLO2.3	PLO2.4	PLO3.1	PLO3.4	PLO3.5	PLO3.6	PLO4.1	PLO4.2	PLO4.3	PLO4.4	PLO5.1

Policy	
Exams	<ul style="list-style-type: none"> - All exams are closed books and notes. - The final exam is comprehensive (covers all the material). - The first, second, and midterm incomplete exams need approval from the departments' heads. - The final incomplete exams need approval from the dean.
Cheating	<p>Prohibited; The commitment of the acts of cheating and deceit such as copying during examinations, altering examinations for re-grade, plagiarism of homework assignments, and in any way representing the work of others as your own is dishonest and will not be tolerated. Standard JUST policy will be applied.</p> <p>المادة 7: إذا ضبط الطالب أثناء الامتحان أو الاختبار متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة:</p> <p>أ- اعتباره راسياً في ذلك الامتحان أو الاختبار.</p> <p>ب- الغاء تسجيله في بقية المساقات المسجل لها في ذلك الفصل.</p> <p>ج- فصله من الجامعة لمدة فصل دراسي واحد، و هو الفصل التالي للفصل الذي ضبط فيه.</p>
Attendance	<ul style="list-style-type: none"> - Attendance is mandatory and will be recorded regularly. - Excellent attendance is expected. - Students who miss more than 20% of the classes will be dropped from the course as per JUST policy. - If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed.

Active learning and students & participation	- Students are expected to actively participate in class discussions - Some topics are self-reading and they worth to 10 points from the course evaluations
Withdraw	The last day of courses withdrawal (without reimbursement of tuition fees) is the day before the 1st day of final examination period

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