



Jerash University
Faculty of pharmacy
Department of pharmaceutical science
First semester, 2017/2018

Course Syllabus

Course Title: Biopharmaceutics & Pharmacokinetics (2)	Course code: 1101424
Course Level: Fourth	Course prerequisite(s) and/or co requisite(s): Biopharmaceutics & Pharmacokinetics (1) Biopharmaceutics & Pharmacokinetics (2) lab
Lecture Time: Sunday + Tuesday : 2-3	Credit hours: 2 Credit hours

Academic Staff

Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Eyad Qunaibi	Associate Professor	Office () Faculty of Pharmacy, Phone (513)		eyadqunaibi@yahoo.com

Course module description:

This course is a continuation of kinetics 1, in which concepts and calculations of kinetic parameters of extravascular dosage forms are discussed, with focus on oral drugs, including both single and multiple dosing. In addition, the course involves discussion of intravenous dosage forms, but within two compartment model, as well as bioavailability, bioequivalence, drug interactions, and pharmacokinetic–pharmacokinetic relationships.

Course module objectives:

By the end of the course students should be able to:

1. Calculate the pharmacokinetic parameters related to extravascular single and multiple dosing and understand the concepts of these parameters.
2. Calculate the pharmacokinetic parameters related to intravenous dosing for a drug that follows two compartment model.
3. Calculate bioavailability and bioequivalence parameters.
4. Design and use Excel datasheets for the determination of the above mentioned parameters.
5. Understand the different types of drug-drug interactions.

6. Understand the pharmacodynamics-pharmacokinetic relationships.

Course/ module components

- **Books, power point presentations, interactive pharmacokinetics websites, Excel sheets, pharmacokinetics lab provided with computer stations.**

References:

Reference 1: Basic Pharmacokinetics. Sunil S. Jambhekar and Philip J. Breen. 2nd edition, 2012.

Reference 2: Basic Pharmacokinetics and Pharmacodynamics: An Integrated Textbook and Computer Simulations. Sara E. Rosenbaum. 2nd edition, 2017.

Teaching methods:

No	Teaching Strategies and Methods
1	Formal teaching lectures (Tools: board, data show)
2	Discussion
3	Interactive pharmacokinetic websites and Excel spread sheets.

Learning outcomes:

- The same as those mentioned under (Course Objectives) with emphasis on:
 1. Critical thinking.
 2. Problem-solving skills.
 3. Qualifying the students to self-learn, search for related information.
 4. Digital literacy (use databases, most recent guidelines, webpages, and applications that are related to the diseases they learn about).

Assessment instruments

Exams and quizzes.

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20%
Second examination	20%
Final examination: 50 marks	40%
Quizzes	20%
Total	100%

Course/module academic calendar

Week	Basic and support material to be covered
(1)	Introduction and review of pharmacokinetics (1)
(2)	Extravascular routes of drug administration
(3)	Extravascular routes of drug administration
(4)	Bioavailability/bioequivalence
(5)	Bioavailability/bioequivalence

(6)	Multiple dosing: extravascular routes of drug administration
(7) First examination	Exam and review of the correct answers with the students
(8)	Two-Compartment Open Model: Intravenous Bolus Administration
(9)	Two-Compartment Open Model: Intravenous Bolus Administration
(10)	Drug Interactions
(11) Second examination	Exam and review of the correct answers with the students
(12)	Pharmacokinetic and pharmacodynamic relationships
(13)	Pharmacokinetic and pharmacodynamic relationships
Final Examination	

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

References:

Reference 1: Basic Pharmacokinetics. Sunil S. Jambhekar and Philip J. Breen. 2nd edition, 2012.

Reference 2: Basic Pharmacokinetics and Pharmacodynamics: An Integrated Textbook and Computer Simulations. Sara E. Rosenbaum. 2nd edition, 2017.