

Al Zahrawi University-College of Pharmacy-Department of Pharmaceutics

Course Description for Biopharmacy

This course description summarizes the key characteristics and anticipated learning objectives for students, assessing their utilization of available learning resources, and must be aligned with the program description.

1. Educational Institution	Al-Zahrawi University
2. University Department / Center	College of Pharmacy
3. Course Name / Code	Biopharmacy
4. Programs in which it is included	Bachelor of Pharmacy
5. Available Forms of Attendance	Daily Attendance
6. Semester / Year	First Semester, Fourth Stage (2025-2026)
7. Total Number of Study Hours	45 hours total-3 hours per week for each group
8. Date of preparing this description	2025-2026
9. Course Objectives: 1. Understanding Drug' Behavior in the body: Through studying the behavior of various drugs on inside the body, students learn about dose impacts, absorption rates, and duration of drug action 2. Calculation of Pharmacokinetics parameters: The objective is to find mathematical equations that describe drugs behavior inside the body using different routes of administration. 3. Knowledge of different factors affect drug absorption.	
1. Learning Outcomes, Teaching and Learning Methods, and Evaluation	

A. Knowledge and Understanding

- A.1: Understanding and Determining drugs kinetics due to different elimination route.
- A.2: Understanding different factors affect drug pharmacokinetics.
- A.3: Understanding pharmacodynamic response of drugs.

B. Subject-Specific Skills

- B.1: Enable students to solve mathematical equations related to Biopharmacy.
- B.2: Enable students to read and interpret plots related to Biopharmacy.
- B.3: Enable students to be independent learners.

Teaching and Learning Methods

- 1. Lectures.
- 2. Teamwork.
- 3. Quizzes and exams.

C. Evaluation Methods

- 1. Mid-term and final exams.
- 2. Written and oral tests.
- 3. Seminars and posters.

D. Thinking Skills

- D1. Encourage students to think correctly through analysis of principles of Biopharmacy.
- D2. Enable students to correctly handle Pharmacokinetics data.

E. General and Transferable Skills

- D1. Encourage students to give research articles.
- D 2. Encourage students to discuss scientific report.
- D 3. Learn skills necessary to handle data.
- D 4. Learn leadership skills.

11. Course Structure					
Weeks	Hours	Required Learning Outcomes	Unit Name / Course or Topic	Learning Methods	Evaluation Method
1	3	Knowledge	Intro to Pharmaceutical Sciences and Biopharmacy	Blackboard and Screen Presentations	Daily exam and oral questions
2	3	Knowledge	Math Review and Pharmacokinetics Jargon	Blackboard and Screen Presentations	Daily exam and oral questions
3	3	Knowledge	Physiologic Factors Related to Drug Absorption	Blackboard and Screen Presentations	Daily exam and oral questions
4	3	Knowledge	Factors Affecting Oral Drug Absorption	Blackboard and Screen Presentations	Daily exam and oral questions
5	3	Knowledge	IV Bolus One Compartment	Blackboard and Screen Presentations	Daily exam and oral questions
6	3	Knowledge	IV Bolus Multicompartment	Blackboard and Screen Presentations	Daily exam and oral questions
7	3	Knowledge	PK of Drug Absorption	Blackboard and Screen Presentations	Daily exam and oral questions
8	3	Knowledge	PK of Drug Distribution and Protein Binding	Blackboard and Screen Presentations	Daily exam and oral questions
9	3	Knowledge	Drug elimination and clearance	Blackboard and Screen Presentations	Daily exam and oral questions
10	3	Knowledge	Drug elimination and clearance	Blackboard and Screen Presentations	Daily exam and oral questions
11	3	Knowledge	PK of IV Infusion	Blackboard and Screen Presentations	Daily exam and oral questions
12	3	Knowledge	Bioavailability and Bioequivalence	Blackboard and Screen Presentations	Daily exam and oral questions

13	3	Knowledge	Non-linear pharmacokinetics	Blackboard and Screen Presentations	Daily exam and oral questions
14	3	Knowledge	Multiple-Dose Regimens	Blackboard and Screen Presentations	Daily exam and oral questions
15	3	Knowledge	Dosage adjustment in renal diseases	Blackboard and Screen Presentations	Daily exam and oral questions

12. Infrastructure	
Required Readings:	References: Applied Biopharmaceutics and Pharmacokinetics, 6 th ed. Shargel.
Special Requirements (Workshops, Journals, Software, Websites):	Electronic Websites:
Social Services (Guest Lectures, Professional Training, Field Studies, Others)	Organizing workshops and courses for graduates:

13. Admission:	
Prerequisites	Admission according to the central plan
Minimum Number of Students	Admission according to the central plan
Maximum Number of Students	Admission exceeds the capacity plan

Name of the Instructor: Ammar Sahib Abdulameer, PhD