Jordan University of Science and Technology
Faculty of Pharmacy
Pharmacy Department

PHAR371 Pharmaceutical Biotechnolog - JNQF Level: 7

Second Semester 2023-2024

Course Catalog
3 Credit Hours. This course is designed to provide students with a well-balanced framework for education in various aspects of pharmaceutical biotechnology, including production, dosage forms, and regulatory aspects regarding biopharmaceuticals. The course will cover the key concepts at the foundation of the technology relevant to protein therapeutics including molecular biology, production, and analytical procedures, formulation development, and immunogenicity. Additionally, the course will emphasize various therapeutic classes of protein biologics currently approved by regulatory bodies in the US and Europe and can be found on the market.
Teaching Method: On Campus

Text Book	
Title	Pharmaceutical Biotechnology Fundamentals and Applications
Author(s)	Editors: Crommelin, Daan J. A., Sindelar, Robert D., Meibohm, Bernd
Edition	5th Edition
Short Name	Ref 1
Other Information	

Instructor	
Name	**Dr. Nid"A Alshraiedeh**
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Instructor	
Name	**Dr. Mohammad Alsaggar**
Office Location	P2 L-0
Office Hours	
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Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue, Thu : 12:30 - 13:30
Room: P1101

Section 2:
Lecture Time: Mon, Wed : 13:00 - 14:30
Room: NORTH HALL

Prerequisites

Line Number	Course Name	Prerequisite Type
303512	PHAR351 Pharmaceutics 2	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2, 3, 4, 5	From DNA sequence to therapeutic proteins	**Chapter 1** From **Ref 1**
Weeks 6, 7, 8	Production & Purification of Recombinant Proteins	**Chapter 3** From **Ref 1**
Weeks 9, 10	Immunogenicity of Therapeutic Proteins	**Chapter 6** From **Ref 1**
Weeks 11, 12	Monoclonal Antibodies: From Structure to Therapeutic Application	**Chapter 7** From **Ref 1**
Week 13	Development of Biosimilars	**Chapter 11** From **Ref 1**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Explain the scientific principles for biotechnology in pharmaceutical product development. [1PLO1.1] [1L7K1]	40%	First Exam, Active Learning 1, First Exam
Apply the scientific principles of pharmaceutical biotechnology in identifying the technological requirements for the production and purification of biologics. [1PLO5.1] [1L7S1]	30%	Second Exam, Active Learning 2
Illustrate the technological components and challenges in the development of biologicals and protein therapeutics in the pharmaceutical and biotechnology industry. [1PLO1.1] [1L7S3]	10%	First Exam
List approved biotech products in terms of their structural considerations and production technologies. [1PLO3.1] [1L7S3]	10%	First Exam
Assess the regulatory aspects of modern biotechnology and the development of biotherapeutics. [1PLO4.3] [1L7C2]	10%	First Exam

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
50							10						10		30

Relationship to NQF Outcomes (Out of 100%)			
L7K1	L7S1	L7S3	L7C2
40	30	20	10

Evaluation	
Assessment Tool	**Weight**
First Exam	25%
Active Learning 1	5%
Second Exam	25%
Active Learning 2	5%
First Exam	40%

Policy	
Exams	All exams are closed book and notes. The final exam is comprehensive (covers all the material). Incomplete exams need approval from the deanship.
Cheating	Cheating is prohibited; and in case of cheating the student will be subject to punishment according to the University's regulations.
Attendance	- Excellent attendance is expected. - JUST policy requires the faculty member to assign ZERO grade (35) if a student misses 10% of the classes that are not excused. - If you miss a class, it is your responsibility to find out about any announcements or assignments you may have missed.
Withdrawal	The deadline for theoretical courses withdrawal (without reimbursement of tuition fees): 31st/May/2024

Date Printed: 2024-02-24