Jordan University of Science and Technology

Faculty of Pharmacy

Doctor Of Pharmacy (Pharm D.) Department

PHMD371 Pharmaceutical Biotechnology - JNQF Level: 7

First 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 emphasise various therapeutic classes of protein biologics currently approved by regulatory bodies in the US and Europe and can be found on the market.

Text Book	
Title	Pharmaceutical Biotechnology: Fundamentals & Applications, 5th Edition 2019.
Author(s)	Daan J. A. Crommelin, Robert D. Sindelar, Bernd Meibohm
Edition	5th Edition
Short Name	Ref #1
Other Information	

Instructor	
Name	**Dr. Mohammad Alsaggar**
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Instructor	
Name	**Dr. Yara Al Tall**
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Class Schedule & Room
Section 1: Lecture Time: Sun, Tue, Thu : 08:30 - 09:30 Room: NORTH HALL Section 3: Lecture Time: Mon, Wed : 10:00 - 11:30 Room: SOUTH HALL

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
312520	PHMD252 Pharmaceutics 1	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**

Weeks 1, 2, 3, 4, 5, 6	From DNA Sequence to Therapeutic Proteins	**Chapter 1** From **Ref #1**
Weeks 7, 8, 9	Production and Purification of Recombinant Proteins	**Chapter 3** From **Ref #1**
Weeks 10, 11	Immunogenicity of Therapeutic Proteins	**Chapter 6** From **Ref #1**
Weeks 12, 13, 14	Monoclonal Antibodies: From Structure to Therapeutic Application	**Chapter 7** 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%	
Apply the scientific principles of pharmaceutical biotechnology in identifying the technological requirements for the production and purification of biologics. [1PLO5.1] [1L7S1]	30%	
Illustrate the technological components and challenges in the development of biologicals and protein therapeutics in the pharmaceutical and biotechnology industry. [1PLO1.1] [1L7S3]	10%	
List approved biotech products in terms of their structural considerations and production technologies. [1PLO3.1] [1L7S3]	10%	
Assess the regulatory aspects of modern biotechnology and the development of biotherapeutics. [1PLO4.3] [1L7C2]	10%	

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

Policy	
Exams	-All exams are closed books 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 a 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.

Date Printed: 2023-10-05