



Jordan University of Science and Technology
Faculty of Pharmacy
Pharmacy Department

PHAR747 Pharmaceutical Microbiology - JNQF Level: 9

First Semester 2024-2025

Course Catalog

3 Credit Hours. This Master's level course in Pharmaceutical Microbiology is designed to provide students with a comprehensive understanding of key concepts and practices within the area of pharmaceutical microbiology. The course encompasses a range of topics critical to the pharmaceutical industry, including an introduction and overview of pharmaceutical microbiology, laboratory and industrial techniques, water systems, sterility assurance, biological indicators, and clean room technologies.

Teaching Method: On Campus

Text Book

Title	Pharmaceutical Microbiology: Essentials for Quality Assurance and Quality Control: 1st Edition
Author(s)	Tim Sandle
Edition	1st Edition
Short Name	REF # 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
REF # 2	Industrial Pharmaceutical Microbiology: Standards and Control	Tim Sandle	5th Edition	
REF # 3	Microbiology and Sterility Assurance in Pharmaceuticals and Medical Devices	Madhu Raju Saghee, Tim Sandle, Edward C. Tidswell	8th Edition	

Instructor

Name	Prof. Ammar Almaaytah
Office Location	Old Presidency Building
Office Hours	Sun : 08:00 - 10:00 Tue : 08:00 - 10:00 Wed : 08:00 - 09:00 Thu : 08:00 - 10:00
Email	amalmaaytah@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Mon, Wed : 11:30 - 13:00
Room: قاعة الندوات/صيدلة

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Introduction and overview of pharmaceutical microbiology.	From REF # 1
Weeks 3, 4	Microbiology Lab techniques	From REF # 1
Week 5	Bioburden determination.	From REF # 1
Week 6	Specified and objectionable microorganisms.	From REF # 1
Weeks 7, 8	Assessment of Pharmaceutical water systems.	From REF # 1
Week 9	Endotoxin and pyrogen testing.	From REF # 2
Weeks 10, 11	Sterilization and sterility assurance.	From REF # 3
Week 12	Biological indicators: measuring sterilization.	From REF # 3
Week 13	Cleaning and disinfection.	From REF # 3
Weeks 14, 15	Cleanrooms and environmental monitoring.	From REF # 3
Week 16	Rapid microbiological methods.	From REF # 3

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes

Course Outcome Weight (Out of 100%)

Assessment method

Understand the fundamental principles and significance of microbiology within the pharmaceutical industry. [1PLO-PT1.1] [1L9K1]	20%	
Apply essential laboratory techniques for microbial analysis in pharmaceutical settings [1PLO-PT3.1] [1L9C1]	10%	
Analyze industrial techniques aimed at microbial control and ensuring quality assurance [1PLO-PT3.1] [1L9S1]	10%	
Evaluate the importance of water quality in pharmaceutical manufacturing [1PLO-PT3.2] [1L9K2]	10%	
Analyze the principles and practices essential for achieving sterility in pharmaceutical products. [1PLO-PT3.2] [1L9C3]	20%	
Evaluate the role of biological indicators in the validation of sterilization processes. [1PLO-PT3.2] [1L9K1]	15%	
Synthesize the design and maintenance aspects of clean rooms in pharmaceutical manufacturing [1PLO-PT3.2] [1L9C1]	15%	

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	PLO-PT1.1	PLO-PT2.1	PLO-PT2.2	PLO-PT3.1
																20			20

Relationship to NQF Outcomes (Out of 100%)				
L9K1	L9K2	L9S1	L9C1	L9C3
35	10	10	25	20

Evaluation	
Assessment Tool	Weight
Mid Exam	30%
Final Exam	50%
Presentations	20%

Policy	
Course Policies	<p>Communicating with Instructors: Students should communicate through their official JUST emails. Communication through personal email accounts (yahoo, Gmail, Hotmail, etc.) or social media will NOT be accepted, and no response will be provided. Students are required to check their emails and the E-learning page of the course regularly for announcements and notifications.</p> <p>Exams: 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.</p> <p>Cheating: 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>Attendance 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.</p> <p>Active learning and students participation: In-class clinical cases, team-based learning activities, paper review, quizzes / assignments, preparing educational materials for patients and brain storming questions.</p> <p>Withdraw: The last day to drop the course is before the twelve (12th) week of the current semester</p>

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