



Jordan University of Science and Technology
Faculty of Pharmacy
Pharmacy Department

PHAR573 Advanced Pharmaceutical Microbiology - JNQF Level: 6

Summer Semester 2023-2024

Course Catalog

3 Credit Hours. This course is designed to familiarize the pharmacy students with the various characters of bacterial biofilms in relation to their structure, pathogenicity & Diseases. The course will take into consideration to investigate the decrease susceptibility of the bacterial biofilms from its planktonic counterparts towards antibiotics by explaining the mechanisms of resistance used by the bacterial biofilms towards antimicrobial agents. The virulence factors of the bacterial biofilms, quorum-sensing and development stages of the biofilm bacteria will be also studied. Various antifungal and antiviral agents will be studied regarding their structure, activity, mechanism of action and ways of microbial resistance to these agents.

Teaching Method: Electronic Course

Text Book

Title	Guide to Microbiological Control in Pharmaceuticals.
Author(s)	S.P. Denyer & R.M.Baird
Edition	1st Edition
Short Name	Ref # 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 2	Microbial Quality Assurance in Pharmaceuticals, Cosmetics and Toiletries	Paul G. Engelkirk	1st Edition	
Ref # 3	Hugo and Russell's Pharmaceutical Microbiology	Stephen P. Denyer B ,Norman Hodges , Sean P. Gorman , Brendan F. Gilmore.	8th Edition	

Instructor

Name	Prof. Ammar Almaaytah
Office Location	Old Presidency Building
Office Hours	
Email	amalmaaytah@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue : 17:00 - 18:30
Room: مترامن الحضور منصة الكترونية

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Introduction to advanced pharmaceutical microbiology	From Ref # 1 , From Ref # 2 , From Ref # 3

Weeks 3, 4	Antibiotic resistance in bacterial biofilms	From Ref # 1, From Ref # 2, From Ref # 3
Weeks 5, 6, 7	Antibiotic classifications	From Ref # 1, From Ref # 2, From Ref # 3
Weeks 8, 9	Sensitivity of selected most pathogenic bacteria to common antibacterial agents	
Weeks 11, 12	Antiparasitic agents	From Ref # 1, From Ref # 2, From Ref # 3
Week 14	Factory & hospital hygiene, and microbiological control in pharmaceutical industry	From Ref # 1, From Ref # 2, From Ref # 3
Week 14	Microbiological Quality Control of Antimicrobial agents	From Ref # 1, From Ref # 2, From Ref # 3

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Explain the relevance of biofilms to the enhancement of microbial pathogenicity. [1PLO1.1][1L6K1]	30%	Midterm exam
Outline the mechanism of action of antimicrobial agents on the ability to control the growth of planktonic and biofilm forming bacteria. [1PLO1.1][1L6K1]	30%	
List the resistance pathways of planktonic and biofilm forming bacteria. [1PLO1.1][1L6K1]	30%	
Compare between the different sterilization techniques employed in the pharmaceutical industry [1PLO5.1][1L6K1]	10%	

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
90															10

Relationship to NQF Outcomes (Out of 100%)	
	L6K1
	100

Evaluation	
Assessment Tool	Weight
Midterm exam	30%
Project	10%
Final exam	40%

Policy	
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.
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.
Cheating	Prohibited; 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. المادة 7: إذا ضبط الطالب أثناء الامتحان أو الاختبار متلبساً بالغش فتوقع عليه العقوبات التالية مجتمعة: أ- اعتباره راسباً في ذلك الامتحان أو الاختبار. ب- الغاء تسجيله في بقية المساقات المسجل لها في ذلك الفصل. ج- فصله من الجامعة لمدة فصل دراسي واحد، و هو الفصل التالي للفصل الذي ضبط فيه.
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.

Active learning and students? participation	? Students are expected to actively participate in class discussions.
Withdraw	The last day of courses withdrawal (without reimbursement of tuition fees) is 13/1/2023

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