



**Jordan University of Science and Technology**  
**Faculty of Pharmacy**  
**Pharmacy Department**

PHAR464 Pharmaceutical Microbiology And Biotechnology Laboratory - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

1 Credit Hours. Students are trained on the methods of culturing, staining and identifying bacteria. Bacterial metabolism, the way bacteria are affected by antibiotics, the essentials of sterilization and quantifying microorganism growth and the methods of producing antibiotics using biotechnological techniques will also be covered.

**Text Book**

<b>Title</b>	Hugo and Russell's Pharmaceutical Microbiology, 8th Edition
<b>Author(s)</b>	Stephen Denyer, Sean Gorman
<b>Edition</b>	8th Edition
<b>Short Name</b>	Pharmaceutical Microbiology
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Practical Handbook of Microbiology	Emanuel Goldman, Practical Handbook of Microbiology, 2nd ed., CRC Press, 2008	Lorrence H Green , Emanuel Goldman	4th Edition	
Gene Cloning	Terry Brown, Gene Cloning and DNA Analysis: An Introduction, 6th ed., Wiley-Blackwell, 2010	Terry Brown	8th Edition	

**Instructor**

<b>Name</b>	<b>Mr. Samer Kharashqeh</b>
<b>Office Location</b>	D2 level -2
<b>Office Hours</b>	Sun : 09:30 - 10:30 Mon : 10:30 - 12:30 Tue : 10:30 - 12:30 Thu : 10:30 - 11:30
<b>Email</b>	skkharashqeh@just.edu.jo

**Class Schedule & Room**

Section 1:  
 Lecture Time: Sun : 14:30 - 16:30  
 Room: LAB

**Tentative List of Topics Covered**

Weeks	Topic	References
Week 3	Preparation of Culture Media	From <b>Pharmaceutical Microbiology</b>
Week 4	Gram Stain	From <b>Pharmaceutical Microbiology</b>

Week 5	Counting of Bacteria or Viable count	From <b>Pharmaceutical Microbiology</b>
Week 6	The Kirby-Bauer Antimicrobial sensitivity test procedure	From <b>Pharmaceutical Microbiology</b>
Week 7	Antimicrobial Susceptibility testing-The tube (Broth) Dilution method.	From <b>Pharmaceutical Microbiology</b>
Week 9	Qualitative suspension test: the DGHM guideline + Evaluation of Pharmaceutical preparations (Efficacy of preservatives and sterility test)	From <b>Practical Handbook of Microbiology</b>
Week 10	Quantitative suspension test + Determination of the Phenol Coefficient (Rideal-Walker Test)	From <b>Practical Handbook of Microbiology</b>
Week 12	Bacterial genomic DNA isolation	From <b>Gene Cloning</b>
Week 13	Agarose gel electrophoresis	From <b>Gene Cloning</b>
Week 14	PCR	From <b>Gene Cloning</b>

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Prepare the bacterial growth media, differentiate types of bacteria and count the bacterial concentration [1PLO1.1] [1L7K1, 1L7S2, 1L7C3]	30%	
Select the antibiotic of choice and define its MIC [1PLO1.1] [1L7K1, 1L7S1]	20%	
Evaluate disinfectant action depending on different protocols [1PLO1.1] [1L7K1, 1L7S3]	30%	
Characterize the isolated and purified DNA by gel electrophoresis [1PLO4.2] [1L7K1, 1L7C2, 1L7C3]	20%	

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
80												20			

Relationship to NQF Outcomes (Out of 100%)					
L7K1	L7S1	L7S2	L7S3	L7C2	L7C3
41.67	10	10	15	6.67	16.67

Evaluation	
Assessment Tool	Weight
Mid-Term	30%
Quizzes	15%
Reports	5%
Evaluation	10%
Final 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	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 راسياً 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	Excellent attendance is expected. JUST policy requires the faculty member to assign ZERO grade (35) if a student misses more than 15% of the classes that are not excused. If you miss class, it is your responsibility to find out about any announcements or assignments you may have missed.
Participation	Grade bonuses are subjected to outstanding participation
Laboratory	The classes will be at the microbiology labs. (P3 Level -1)
Withdraw	According to JUST policy

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