Jordan University of Science and Technology
Faculty of Pharmacy
Pharmacy Department

PHAR251 Pharmaceutical Microbiology - JNQF Level: 6

First Semester 2023-2024

Course Catalog
3 Credit Hours. The course provides the basics of microbiology and its pharmaceutical/medical importance. The course provides students with the essentials of microbiology as a science and its historical development. The course describes the characteristics, classification, and life cycle of various microorganisms, including viruses, bacteria, and fungi. Moreover, it covers the pathogenesis of microorganisms and their transmission routes. The course introduces the students to main concepts in the science of epidemiology and public health. Additionally, it details the main antimicrobial agents used clinically and their mode of action. The students will be also introduced to various sterilizing processes, disinfectants, antiseptics, preservatives, and their use to control the spread of microorganisms. Finally the course will detail some of the most important human infectious diseases.

Text Book	
Title	Burton?s Microbiology for the Health Sciences
Author(s)	Paul G. Engelkirk
Edition	11th Edition
Short Name	Ref # 2
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref # 1	Microbiology: An Introduction, 13th Edition	Gerard J. Tortora, Berdell R. Funke, Christine L. Case, Derek Weber and Warner B. Bair	13th 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	**Dr. Yara Al Tall**
Office Location	PH4 L1
Office Hours	
Email	yraltall@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 09:30 - 10:30 Room: P1101 Section 2: Lecture Time: Sun, Tue : 12:30 - 13:30 Room: P1101

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
102304	MED230A Human Physiology	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Overview of Microbiology	**Chapter 1** From **Ref # 1**
Week 2	Functional Anatomy of Prokaryotic and Eukaryotic Cells	**Chapter 4** From **Ref # 1**
Week 3	Microbial Growth, Biofilms, and Biorisk reduction	**Chapter 6** From **Ref # 1**
Week 5	Acellular (Viruses, viroid and prions)	**Chapter 13** From **Ref # 1**
Week 6	Prokaryotic Microbes (Bacteria)	**Chapter 11** From **Ref # 1**
Weeks 7, 8	Eukaryotic Microbes: Fungi, Protozoa and Helminths	**Chapter 12** From **Ref # 1**
Weeks 8, 9	Principles of Microbial Pathogenicity	**Chapter 15** From **Ref # 1**
Weeks 9, 10	Pathogenesis of Infectious diseases	**Chapter 14** From **Ref # 2**, **Chapter 14** From **Ref # 1**
Week 11	Epidemiology and Public Health	**Chapter 11** From **Ref # 2**
Week 12	The Control of Microbial growth	**Chapter 8-13** From **Ref # 3**
Week 12	Chemical disinfectants, Antiseptics and Preservatives	**Chapter 19** From **Ref # 3**
Week 13	Sterilization Procedures and Sterility Assurance	**Chapter 21** From **Ref # 3**
Week 14	Major Infectious Diseases of Humans	**Chapter 17** From **Ref # 2**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Outline the major principles and fundamentals of the science of microbiology. [1PLO1.1] [1L6K1]	15%	
Explain the structural morphology including the different characteristics and life cycles of pharmaceutically important microorganisms. [1PLO1.1] [1L6K2]	25%	
Examine the pathogenesis of most infectious disease including transmission routes and its negative impact on public health. [1PLO2.3] [1L6K2]	40%	
Classify the major classes of antibiotics and their mode of action. [1PLO2.3] [1L6C4]	10%	
Outline the different types of sterilization methods and their applicability to control of microbial contamination. [1PLO5.1] [1L6C5]	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
40					50										10

Relationship to NQF Outcomes (Out of 100%)			
L6K1	L6K2	L6C4	L6C5
15	65	10	10

Evaluation	
Assessment Tool	**Weight**
First Exam	20%
Second Exam	30%
Quizzes and Participation	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 and second 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. جـ- 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 5-1-2024

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