Jordan University of Science & Technology
Department of Biotechnology and Genetic Engineering
General Microbiology (BT231)
First semester 2020-2021

Course Instructors
Dr. Abdul-Kareem Alsallal, and Dr. Sereen M.B Batieneh

Course Coordinator
Dr. Sereen M.B Bataineh

Course Refrences:
Prescott's Microbiology by Willey, Sherwood and Woolverto, 10th edition 2017, McGraw-Hill Publisher. (3rd edition used in the taxonomy part)

Course Description
Introduction to the microbial world. Diversity of prokaryotes, their development, structure and function. Prokaryotic metabolism, nutrition, growth and control. Major classes of bacteria as well as Viruses and fungi will be thoroughly discussed. Host-pathogen relationship and antimicrobial chemotherapy will also be addressed.

Course learning Outcomes: Upon completetion of the course, the students should be able to**:**

Outcome	Weight (%)	Mapped Program Outcome and Level
Describe the surface structure as well as the internal structure of bacterial cells and their functions	10	1A
Describe the nutritional and physical requirements for bacterial growth and the effect of environment on bacteria and explain the dynamics of the growth of a bacterial population and how this growth can be measured	10	1A
Describe the principals involved in killing bacteria, and be able to decide on the use of physical and chemical methods including antimicrobial chemotherapeutic agents used to control microbial growth in industrial and medical settings	10	3A, 1C
Express the fundamental concepts associated with viruses including a detailed understanding of viral classification and replication	8	1A
Comprehend the scheme of bacterial classification and be familiar with major groups of bacteria and fungi and their importance in medical, environmental and food industry	48	1A, 3C
Understand ways in which bacterial pathogens can be transmitted to humans, and the factors that influence transmission of pathogens and the occurrence of infectious diseases. This includes the concepts of virulence and virulence factors, opportunistic pathogens, and predisposing factors to disease	14	1A

Course Content:

Topic	Chapter	Pages
1. Bacterial cell structure	3 (10th edition)	42-77
2. Microbial growth	7(10th edition)	141-169
3. Control of microorganisms in the environment	8 (10th edition)	172-186
4. Viruses and other acellular agents	6 (10th edition)	109-130
5. Microbial Taxonomy and evolution of diversity	19 (10th edition)	443-452
6. The Bacteria: Gram-Negative Bacteria of general, medical, or industrial importance.	20 (3rd edition)	416-436
7. The Bacteria: Gram-Positive Bacteria other than Actinomycetes.	21 (3rd edition)	439-452
8. The Bacteria: Remaining Gram-Negative Bacteria and Cynobacteria.	22 (3rd edition)	455-466
9. Actinobacteria: The high G+C gram positive bacteria	22 (10th edition)	554-562
10. Fungi (Eumycota)	26 (10th edition)	583-596
11. Pathogenicity and infection	35 (10th edition)	770-784

Course Evaluation (May be changed according to current situation):

Assessment Type	Weight (%)
Mid Exam	**50**
Final Exam	**50**
Total	**100**

Course Policies:

1. Your class attendence is mandatory. Absences in excess of 20% of the total lecture hours will result in your being dropped from the course with a failing grade.
2. Make-up exam appeals should be filed within Two days of the missed exam.
3. Cell phones are prohibited during examinations and must be turned off during lecture. No incoming or outgoing calls or text messages are allowed.
4. Unethical conduct, including cheating during examintions, will result in punishment by the university administratino**.**