



Jordan University of Science and Technology
Faculty of Science & Arts
Applied Biological Sciences Department

BIO731 Advanced Microbiology - JNQF Level: 9

Second Semester 2021-2022

Course Catalog

3 Credit Hours. This course will address several topics not covered normally by undergraduate microbiology courses; the course will address the following topics; Production of antibiotics and their effect on the normal and pathogenic microflora of the human body. Microbiome and its effect on health and diseases. The environmental microbiome; Use of bacteria in cancer therapy and bio-control of MDR bacteria when every antibiotic treatment fails; i.e using bacteriophage and predator bacteria; Biofilms and infections; Tumor-associated viruses. Phylogenetic analysis of microorganisms and studying the relationships among them.

Teaching Method: Blended

Text Book

Title	There is no book references instead the course will be taught from contemporary papers
Author(s)	none
Edition	1st Edition
Short Name	papers
Other Information	no books will be taught

Instructor

Name	Prof. Ziad Jaradat
Office Location	PH1L1
Office Hours	Sun : 10:00 - 12:00 Mon : 08:00 - 09:00 Tue : 11:00 - 13:00 Wed : 09:00 - 10:00
Email	jaradat@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Wed : 14:00 - 15:30

Room: NF38

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Antibiotics and their production from soli bacteria and fungi	
Weeks 3, 4	The effect of antibiotic residues on human and animal health	
Weeks 5, 6	Study the human microbiome and the possible effect on human health	
Weeks 7, 8	Environmental Microbiome and its implications on human and animal health	
Weeks 9, 10, 11	Explore the use of bacteria in cancer therapy as well as in treating infections with MDR microorganisms	
Weeks 11, 12, 13	The association between viruses and some types of cancer	
Weeks 14, 15, 16	Using the phylogenetic analysis to study the relationship between microorganisms	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understanding the nature of antibiotics, their production from bacterial sources, and effect of antibiotic traces on animal and human health [1A] [1L9K1, 1L9K2]	20%	
Study the human microbiome and the possible effect on human health [1A, 1D] [1L9K3, 1L9S2]	20%	
Explore the use of bacteria in cancer therapy as well as in treating infections with MDR microorganisms [1C] [1L9S1, 1L9S2]	20%	
Study the association between viruses and some types of cancer [1D] [1L9C6]	20%	
Familiarize students with the relationship between microorganisms using the phylogenetic analysis [1B, 1F] [1L9S1, 1L9C1]	20%	

Relationship to Program Student Outcomes (Out of 100%)

A	B	C	D	E	F
30	10	20	30		10

Relationship to NQF Outcomes (Out of 100%)

L9K1	L9K2	L9K3	L9S1	L9S2	L9C1	L9C6
10	10	10	20	20	10	20

Policy	
Attendance	Students are expected to attend all classes. Consequently, students are responsible for ALL materials posted on Elearning system, presented or assigned during the scheduled class period and are expected to obtain such information on their own should a class period be missed. Whenever possible, absences will be discussed with the instructor in advance. Class attendance will be taken in lecture. Students will be allowed three absences between every mid-term exam, and a total of six absences before the final. Absences in excess of that stated above will result in the student failing in the course.
Academic dishonesty and make up exams	JUST regulations and rules will be strictly implemented. Refer to University's student information book for more details about exams, exam make up and absence rules; If you are absent from one or more of your examinations for medical or other reasons, you must provide documentary evidence to justify your absence for the consideration of a make-up exam within one week or else no make-up exam will be permitted.

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