

Course E-Syllabus

1	Course title	Microbiology
2	Course number	5501331
3	Credit hours	3 hours
	Contact hours (theory, practical)	3 hours per week
4	Prerequisites/corequisites	5501321
5	Program title	Bachelor in Biological Sciences
6	Program code	550
7	Awarding institution	The University of Jordan-Aqaba
8	School	School of Basic and Marine Sciences
9	Department	Marine Biology
10	Level of course	Third year
11	Year of study and semester (s)	First Semester 2020/2021
12	Final Qualification	B.Sc.
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Teaching methodology	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input checked="" type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	Date of production/revision	20/09/2020

18 Course Coordinator:

Dr. Zeinab H. Arabeyyat
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19 Other instructors:

N/A

20 Course Description:

As stated in the approved study plan.

The course is designed to cover the History and scope of microbiology, prokaryotes cell structure and function; metabolism and nutrition, microbial growth, requirements for growth, environmental factors affecting growth, effect of antimicrobial agents on growth; microbial genetics, and gene cloning, bacterial reproduction, microbial taxonomy, major groups of bacteria, microorganisms and

environment, elements cycling; symbiotic associations; immune response and antigen – antibody reactions in vitro.

21 Course aims and outcomes:

A- Aims:

Focus on the history and scope of microbiology, What is microbiology? Why is microbiology important? Light microscopy and Electron microscopy. Cell Structure and Organization: The prokaryotic cell. The eukaryotic cell. Cell division in prokaryotes and eukaryotes. Growth in multicellular microorganisms. Microbial Metabolism. Why is energy needed? Enzymes. Principles of energy generation. Anabolic reactions. The regulation of metabolism. Microbial Diversity and classification. Prokaryote Diversity. Bacteria and human disease. Microbial genetics and gene cloning. The Fungi. Classification of the Fungi. Fungi and disease. The Protista. The Algae. The Protozoa. The slime molds and water molds (the fungus-like protists). Protistan taxonomy. Viruses: Viral structure. Classification of viruses. Viral replication. Cultivating viruses. Viral diseases in humans. Immune response and antigen–antibody reactions in vitro.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

Knowledge and understanding:

At the end of this module, students will be able to:

- Define what Microbiology is and why it is important;
- Identify prokaryotes cell structure and function;
- Identify metabolism and nutrition, microbial growth, and requirements for growth;
- Identify environmental factors affecting microbial growth;
- Identify effect of antimicrobial agents on growth;
- Define microbial genetics, and gene cloning, and bacterial reproduction;
- Identify microbial taxonomy;
- Define major groups of bacteria, microorganisms and environment, elements cycling; symbiotic associations;
- Define immune response and antigen – antibody reactions in vitro.

Cognitive skills (thinking and analysis).

- The thinking skills will be developed by encouraging students to conclude answers to different questions that the lecturer intends to use during the presentation of the scientific material.
- The lecturer intends to stimulate the student's analytical thinking side via connections with general aspects in daily life or through questions, net searching, and homework.

22. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1 - 1.3	General Bacteriology	Zoom and Moodle	Oral questions	Textbooks
2 & 3	1.4 – 1.9	Morphology of Bacteria		Oral questions and Homework	Textbooks
4 & 5	1.10 – 1.15	Identification of Bacteria		Oral questions	Textbooks
6 & 7	1.16 – 1.21	Bacterial Infections		Oral questions and Quiz	Textbooks
8	1.22 – 1.24	Sterilization and Disinfection		Oral questions	Textbooks
9	1.25 – 1.27	Antibiotics		Oral questions	Textbooks
10	1.28 – 1.30	Viruses		Oral questions	Textbooks
11 & 12	1.31 – 1.36	Fungi, Algae and Protozoa		Oral questions	Textbooks
The date of midterm and final exams will be announced later					

- Teaching methods include: Synchronous lecturing/meeting; Asynchronous lecturing/meeting
- Evaluation methods include: Homework, Quiz, Exam, pre-lab quiz...etc

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
Oral questions	5%	All topics	-	Zoom
Homework Assignment	10%	Identification of Bacteria	4	Moodle
Open book exam	5%	Viruses	10	Moodle
Midterm Exam	30%	General Bacteriology, Morphology of Bacteria, Identification of Bacteria, and Bacterial Infections	6	LMSystem
Final Exam	50%	All topics	13	-

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

Computer and internet connection are required for watching lectures, reading the module documents and reviewing related eBooks, applying for online test, answering and submitting homework.

25 Course Policies:

A- Attendance policies:

- I strongly recommend students attend every lecture. Missing any lecture will put them at a distinct disadvantage when test taken.
- Any student with six or more unexcused absences from lecture can be legally dropped from the course.

B- Absences from exams and handing in assignments on time:

The only valid excuses for missing an exam are death in the family, illness, or accident. In this case, student must provide evidence of some kind and must report me within 3 days.

C- Health and safety procedures:

Students who miss the exam due to illness or other excuse must notify me within the first week after the exam, so make up arrangements can be made.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

- Students are not expected to talk loudly while the lecturer is lecturing,
- After two warning, the Student will be automatically removed from the class or the online lecture.
- Any act of cheating, or academic misconduct is subject to penalties.
- The minimum penalty for any students caught cheating will receive a zero on that test.

E- Grading policy:

Type	Grading
Oral questions:	5%
Homework Assignment:	10%
Open book exam:	5%
Midterm Exam:	30%
Final Exam:	50%
Total	100%

Exams: The examinations consist of any combination of multiple choice, and true or false questions.

F- Available university services that support achievement in the course:

Library sources are available and internet.

26 References:

A- Required book(s), assigned reading and audio-visuals:

- Hogg, S. (2005). Essential Microbiology. West Sussex: John Wiley and Sons. Chicago, 15th ed.
- Kumar, S. (2012). Textbook of Microbiology. Jaypee Brothers Medical Publishers (P) Ltd, 1st ed.
- Talaro, Kathleen P. (2002). Foundations in microbiology. Boston: McGraw-Hill, 8th ed.
- The Short Textbook of Medical Microbiology (Including Parasitology) By Satish Gupte 10th Edition Price Rs. 632/- Published by Jaypee Brothers Medical Publishers (P.) Ltd. DOI: 10.3126/kumj.v8i2.3579 Kathmandu University Medical Journal (2010), Vol. 8, No. 2, Issue 30, 287.
- Other readings provided as PDF files.

B- Recommended books, materials and media:

Selected videos from YouTube,
Electronic online-free books, and
Moodle.

27 Additional information:

N/A

Name of Course Coordinator: **Dr. Zeinab H. Arabeyyat** Signature:  Date: **20/09/2020**

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----