Course E-Syllabus

1	**Course title**	Microbiology
2	**Course number**	5501331
3	**Credit hours**	3 hours
	Contact hours (theory, practical)	4.6 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)**	Summer Semester 2019/2020
12	**Final Qualification**	B.Sc.
13	**Other department (s) involved in teaching the course**	None
14	**Language of Instruction**	English
15	**Teaching methodology**	☐Blended ☒Online
16	**Electronic platform(s)**	☒Moodle ☒Microsoft Teams ☐Skype ☒Zoom ☐Others……
17	**Date of production/revision**	28/06/2020

18 Course Coordinator:

Dr. Zeinab H. Arabeyyat
Office number: 342
Office hours: 12:00 – 13:00 pm (Sun, Mon, Tue, Wed, and Thu). Students can also contact me via Messenger (Zeinab H. Arabeyyat), and Email.
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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	General Bacteriology	Synchronous lecturing	Oral questions	Textbooks
	1.2	General Bacteriology	Synchronous lecturing	Oral questions	Textbooks
	1.3	General Bacteriology	Synchronous lecturing	Oral questions	Textbooks
	1.4	-	-	-	-
	1.5	Morphology of Bacteria	Synchronous lecturing	Oral questions	Textbooks
2	2.1	Morphology of Bacteria	Synchronous lecturing	Oral questions	Textbooks
	2.2	Morphology of Bacteria	Synchronous lecturing	Oral questions	Textbooks
	2.3	-	-	-	-
	2.4	Morphology of Bacteria	Synchronous lecturing	Oral questions	Textbooks
	2.5	Morphology of Bacteria	Synchronous lecturing	Quiz	Textbooks
3	3.1	Identification of Bacteria	Synchronous lecturing	Oral questions	Textbooks
	3.2	Identification of Bacteria	Synchronous lecturing	Oral questions	Textbooks
	3.3	Identification of Bacteria	Synchronous lecturing	Oral questions	Textbooks
	3.4	Identification of Bacteria	Asynchronous lecturing	Homework	Textbooks
	3.5	Identification of Bacteria	Asynchronous lecturing	Quiz	Textbooks
4	4.1	Bacterial Infections	Synchronous lecturing	Oral questions	Textbooks
	4.2	Bacterial Infections	Synchronous lecturing	Oral questions	Textbooks
	4.3	Bacterial Infections	Synchronous lecturing	Oral questions	Textbooks
	4.4	Bacterial Infections	Synchronous lecturing	Oral questions	Textbooks
	4.5	Bacterial Infections	Asynchronous lecturing	Report	Textbooks
5	5.1	Sterilization and Disinfection	Synchronous lecturing	Oral questions	Textbooks
	5.2	Sterilization and Disinfection	Synchronous lecturing	Oral questions	Textbooks
	5.3	Sterilization and Disinfection	Asynchronous lecturing	Homework	Textbooks
	5.4	Antibiotics	Synchronous lecturing	Oral questions	Textbooks
	5.5	Antibiotics	Synchronous lecturing	Homework	Textbooks
6	6.1	Eid Al-Adha Holiday			
	6.2	Eid Al-Adha Holiday			
	6.3	Viruses	Synchronous lecturing	Oral questions	Textbooks
	6.4	Viruses	Synchronous lecturing	Oral questions	Textbooks
	6.5	Viruses	Synchronous lecturing	Homework	Textbooks
7	7.1	Mycology	Synchronous lecturing	Oral questions	Textbooks
	7.2	Mycology	Synchronous lecturing	Oral questions	Textbooks
	7.3	Parasitology	Synchronous lecturing	Oral questions	Textbooks
	7.4	Parasitology	Synchronous lecturing	Homework	Textbooks
	7.5	-	Asynchronous lecturing	Homework	Textbooks

- 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	All through	Zoom and Microsoft Teams
Assignments (Homework)	25	Identification of Bacteria, Sterilization and Disinfection, Antibiotics, Viruses, Mycology and Parasitology	3,5, 6 & 7	E-Learning
Quizzes	10	Morphology of Bacteria, and Identification of Bacteria	2 & 3	Microsoft Forms
Report	10	Bacterial Infections	4	E-Learning
Final Exam	50	All topics	8	E-Learning LMsystem

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

Computer, internet connection, and account on E-Learning.

25 Course Policies:

A- Attendance policies:
Students are recommended to attend every lecture.

B- Absences from exams and submitting assignments on time:
Any student with five or more unexcused absences from lectures can be legally dropped from the course.

C- Health and safety procedures:
N/A

D- Honesty policy regarding cheating, plagiarism, misbehavior:
Any act of cheating, or academic misconduct is subject to penalties. If students caught cheating, they will receive a zero on that test.

E- Grading policy:
50% (Assignments, Quizzes, Oral questions and Open book exam), and 50% (Final Exam).

F- Available university services that support achievement in the course:
E-Learning, and Microsoft Teams

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.**

B- Recommended books, materials and media:

- **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.**

27 Additional information:

N/A

Name of Course Coordinator: **Dr. Zeinab H. Arabeyyat** Signature: ---------- Date: 28/6/20

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

Head of Department: **Dr. Zeinab H. Arabeyyat** Signature: ----------

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

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