The University of Jordan

Accreditation & Quality Assurance Centre

COURSE Syllabus

1	Course title	Applied Microbiology
2	Course number	5501434
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites/co requisites	5501331
5	Program title	Bachelor in Biological Sciences
6	Program code	5501
7	Awarding institution	The University of Jordan-Aqaba
8	Faculty	Faculty of Basic and Marine Sciences
9	Department	Biology
10	Level of course	Third and fourth year
11	Year of study and semester (s)	First semester 2019/2020
12	Final Qualification	BSc.
13	Other department (s) involved in teaching the course	non
14	Language of Instruction	English
15	Date of production/revision	9/2019

16. Course Coordinator:

Dr. Zeinab H. Arabeyyat
Office number: 342
Office hours: 10:00 – 11:00 am (Sun, Tue, Thu)
Phone numbers: 032090450 ext. 36051
Email address: z.arabeyyat@ju.edu.jo

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

N/A

18. Course Description:

As stated in the approved study plan.

The course is designed to cover food as a substrate for microorganisms, factors affecting growth in food; microorganisms important in food, principles of food preservation, food borne diseases and toxins. Industrial microbiology: primary and secondary metabolites, downstream processing, strain development, microorganisms as food, microbial transformation, water pollution and sewage treatment, microbial treatment and utilization of waste, environmental microbiology, soil microbiology, microbial genetics, aquatic microbiology, and bioremediation.

19. Course aims and outcomes:

A- **Aims**:

Upon successful completion of this course, students will be able to focus on the basic applications of Microbiology. The fundamentals of bacterial genetics and techniques in genetic engineering as well as the role of microbiology in the environment, industry, soil microbiology, aquatic microbiology, bioremediation and food microbiology. Food as a substrate for microorganisms, factors affecting growth in food; microorganisms important in food, principles of food preservation, food borne diseases and toxins. Industrial microbiology: primary and secondary metabolites, downstream processing, strain development, microorganisms as food, microbial transformation, water pollution and sewage treatment, microbial treatment and utilization of waste, environmental microbiology,

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

Learning outcomes:

- **Knowledge and understanding**

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

- Learning the basic applications of microbiology.
- Identify the fundamental role of bacteria in genetic engineering.
- Identify the fundamental role of microorganisms in the environment.
- Identify the fundamental role of microorganisms in the industry.
- Identify the fundamental role of microorganisms in soil microbiology.

- **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.

20. Topic Outline and Schedule:

Chapter	Week	Topic
Chapter 1	**Week 1**	Introduction to Microbiology
Chapter 2	**Week 2-4** (29/9 – 17/10	Microorganisms in the Environment
Chapter 3	**Week 5-8** 20/10 – 14/11	Microorganisms in Industry
Midterm Exam (Date to be announced between 27/10-14/11/2019)		
	Week 9-10 17/11 – 28/11	**Oral presentations**
Chapter 4	**Week 11-14** 1/12 – 26/12	Microorganisms in Genetic Engineering
Final Exam (Date to be announced between 29/12/2019-7/1/2020)		

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following **teaching and learning methods:**

- Power point lectures, questions and discussions, videos, home works.
- Assignments such as preparing of reports on topics related to the subject.
- Students are requested to present oral presentation on a subject of his/her choice within the framework of the study material.
- Quizzes and evaluation of students.

22. Evaluation Methods and Course Requirements:

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

- Quizzes
- Homework / Assignments.
- Attendance and Participation in the class
- Oral presentation
- Midterm Exam
- Final Exam

23. Course Policies:

A- Attendance policies:

- I strongly recommend you attend every lecture. Missing any lecture will put you at a distinct disadvantage when test taken.
- Any student with four 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 you must provide evidence of some kind and you 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 in class while the lecturer is lecturing
- After two warning of taking or any other classroom disruption, the Student will be automatically removed from the class.
- 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**
Quizzes	5%
Homework	5%
Presentation	10%
Midterm exam:	30%
Final Exam:	50%
Total	**100%**

Exams: The examinations will consist of any combination of fill in the blank, true or false, short answer, matching, identification and essay questions.

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

Library sources are available, internet, laboratory facilities.

24. Required equipment:

1. Lab top
2. Data show
3. white board

25. 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.

B- Recommended books, materials, and media:

N/A

26. Additional information:

N/A

Name of Course Coordinator: **Dr. Zeinab Arabeyyat** Signature: ---------- Date: **15/09/2019**

Head of curriculum committee/Department: ---------- Signature: ----------

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

Head of curriculum committee/Faculty: ---------- Signature: ----------

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