



Course Syllabus

1	Course title	General Microbiology	
2	Course number	0304251	
3	Credit hours	4 hrs (3 theory, 1 practical)	
	Contact hours (theory, practical)	4 hrs (3 theory, 3 practical) / week	
4	Prerequisites/co-requisites	Organic Chemistry (0333233)	
5	Program title	Clinical Laboratory Sciences	
6	Program code	0308	
7	Awarding institution	University of Jordan	
8	School	Science	
9	Department	Department of Clinical Laboratory Sciences	
10	Course level	Third Year	
11	Year of study and semester (s)	Fall 2023/ 2024	
12	Other department (s) involved in teaching the course	BSc	
13	Main teaching language	English	
14	Delivery method	Face to face learning	
15	Online platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date	2/2024	

17 Course Coordinator:

Name: Dr. Ibrahim Mosleh Office number: Biology Building 211 Email: i.mosleh@ju.edu.jo	Contact hours: Monday & Wednesday 11:30 – 1:00 pm Phone number:
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18 Other instructors:

Name: Office number: Phone number: Email: Contact hours:
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19 Course Description:

This course is designed to present the microbes with emphasis on those that affect human. It is an introduction to general microbiology for Medical laboratory sciences students who are interested in developing laboratory skills in microbiology. The scope of this course includes the basic concepts of microbiology including the structure, metabolism, genetics, growth, control, cultivation, isolation, classification and identification of the major groups of bacteria. The course includes an introduction to viruses, protozoa, fungi, and algae. The nature of microbe-host interaction, infection, and control are concluding topics.



20 Course aims and outcomes:

A- Aims:

This course will enable students to explore and gain further understanding of general microbiology through the introduction of different forms of microbes.

Provide students with a broad base of knowledge regarding general microbiology and its interaction with the human host.

B- Students Learning Outcomes (SLOs):

For purposes of mapping the course SLOs to the Clinical Laboratory Sciences program SLOs, at the successful completion of the CLS program, graduates are expected to be able to:

SLO(1). Understand and apply the theoretical foundations of medical laboratory sciences to accurately calibrate and operate advanced laboratory equipment.

SLO(2). Demonstrate knowledge of safety protocols, Ministry of Health regulations, and environmental preservation practices when handling samples of pathogens and chemical/biological risks.

SOL(3). Acquire in-depth technical knowledge to stay abreast of scientific advancements and actively participate in local and global applied research in the field.

SOL(4). Perform diverse analyses and effectively interpret results for various clinical samples across laboratory disciplines such as hematology, clinical chemistry, microbiology, urine analysis, body fluids, molecular diagnostics, and immunology.

SOL(5). Apply practical training to solve complex problems, troubleshoot issues, and interpret results, ensuring a connection between data and specific medical conditions for precise diagnosis.

SOL(6). Show effective communication skills to convey information accurately and appropriately in a laboratory setting.

SOL(7). Demonstrate a commitment to lifelong learning and innovation by applying modern techniques, critically analyzing information, and contributing to the creation and application of new knowledge in medical laboratory sciences which fulfil the requirements of national and international CBD.

SOL(8). Uphold professional behavior, ensuring the confidentiality of client information, and respecting client privacy throughout all aspects of laboratory work.

SOL(9). Apply managerial skills that align with quality assurance, accreditation, quality improvement, laboratory education, and resource management, showcasing competence in the effective administration of laboratory practices.

Descriptors	ILO/ID	Program SLOs	SLO (1)	SLO (3)	SLO (4)	SLO (5)
		Course SLOs				
Knowledge	A1	Have the basic knowledge of classification of different microorganisms like viruses, fungi, parasites, and bacteria with emphasis on bacteria.		X		
	A2	Illustrate the structure, replication processes, pathogenicity and genetics of bacteria	X			
Skills	B1	Demonstrate skills and knowledge required to perform laboratory experiments in bacteriology and mycology			X	
	B2	Prepare the bacterial smear and perform the bacterial count and use of the staining techniques, culture procedures, and biochemical reactions				X
Competence	C1	Know the sterilization methods and use of antiseptics, disinfectants, antibacterial agents and susceptibility testing to antibiotics.	X			
	C2	Choose the appropriate methods for the examination of microbiology specimens for definitive identification of bacteria and report and interpret the results of the tested bacteria.		X		

21. Topic Outline and Schedule:

Week	Lecture	Topic	Student Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1-4	1-3	Historical background and classification of microorganisms	A1	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> ch 1
	3-7	Classification, morphology, and structure of prokaryotes	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> ch 1, 2, 3
5-9	8-15	Physiology, metabolism, and growth of bacteria	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> Ch 6, 7, 8, 9, 10, 11
9-11	14-17	Genetics of bacteria: gene structure, replication, and expression Microbial genetics: mechanisms of genetic variation	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> Ch 12, 13, 14, 15, 16
	18-21	Bacterial taxonomy and taxa	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> Ch 17, 18
12-13	22-24	Introduction to viruses; Structure and replication	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> Ch 25
14	25-26	Host-microbe interaction	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Prescott's Microbiology</i> Ch 31
14-15	27-28	Microbial control: physical and chemical methods	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Greenwood Medical Microbiology</i> ch 5, 6
15	29	Control of hospital acquired infections	A2, B1,B2	Face to Face	Lecture Room	Synchronous	Quiz, Exam	<i>Greenwood Medical Microbiology</i> ch 67

22 Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	SLOs	Period	Platform
Assignments					
Quizzes	20			At the end of each topic	On campus
Lab Reports	10			Every week	
First Exam					
Mid Exam	30	Ch 1-11	A1, A2, B1, B2	Week 9	On campus
Final Exam	40	All required chapters	All SLOs	Week 16	On campus

23 Course Requirements

Students are directed and encouraged to use all possible resources:

- use the internet as a learning source.
- a series of short movies is promoted
- students are encouraged to learn a suitable software package as a learning tool.

24 Course Policies:

A- Attendance policies:

- Attend and participate in all classes: attendance will be taken.
Class time will be used to discuss, elaborate, expand, etc., on the written modules. This may include formal/informal lectures, audio visual presentations, demonstrations, labs, etc.

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

- A student who has been absent for 15% or more of the total hours of any course, including absences for medical or compassionate reasons, may be required to withdraw from that particular course.
- Students who miss quizzes or examinations will automatically be assigned a mark of zero unless the respective instructor, or the Program Head, has been notified of the reason for absence *PRIOR* to the commencement of the exam. Acceptable reasons will be evaluated at the time (e.g., illness - medical certificate may be required, serious illness or death in the family, etc.). Supplemental examinations may be allowed in legitimate cases.



C- Health and safety procedures:

All students need to be immunized against hepatitis B, immunization certificate must be forwarded to the coordinator of the hospital training. Pregnancy affects immunization and it is the responsibility of the student to notify the health person as soon as possible of her pregnancy. If there are fees related to immunization, it is the responsibility of the student.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

Evaluation	Point %	Date
Assignments or Quizzes	20%	
Midterm Exam	30%	Will be announced in due time.
Lab. Reports	10%	
Final Exam including the laboratory (10%)	50%	Will be announced in due time.

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

1. The University Computer Lab.
2. The University Main Library.
3. The University e-library.

25 References:

Prescott's Microbiology by Joanne Willey, Linda Sherwood, Christopher J. Woolverton **9th edition. 2014. McGraw-Hill.**

Brock Biology of Microorganisms. By Michael T. Madigan, John M. Martinko, Kelly S. Bender, Daniel H. Buckley, David A. Stahl, Thomas Brock. **14th edition. 2015.** Pearson, Prentice Hall.

Medical Microbiology by David Greenwood, Richard C. Slack, and John F. Peutherer, ELBS, 14th edition

26 Additional information:

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Name of Course Coordinator: **Prof. Ibrahim Mosleh**

Signature: *Ibrahim Mosleh* Date: 2-2024

Head of Curriculum Committee/Department: **Dr. Suzan Mattar**

Signature: *Suzan Mattar*

Head of Department: **Ahmed Abu siniyeh**

Signature: *Ahmed Abu siniyeh*

Head of Curriculum Committee/Faculty: **Dr. Mu'ayyad Al Hseinat**

Signature: *Mu'ayyad Al Hseinat*

Dean: **Prof. Mahmoud Jaghoub**

Signature: *Mahmoud Jaghoub*