

## Course E-Syllabus

1	<b>Course title</b>	Pharmaceutical Microbiology I - PharmD
2	<b>Course number</b>	1202341
3	<b>Credit hours</b>	3
	<b>Contact hours (theory, practical)</b>	3 (theory)
4	<b>Prerequisites/corequisites</b>	Prerequisite: 0304101 (General Biology II)
5	<b>Program title</b>	PharmD
6	<b>Program code</b>	N/A
7	<b>Awarding institution</b>	The University of Jordan
8	<b>School</b>	School of Pharmacy
9	<b>Department</b>	Pharmaceutics and Pharmaceutical Technology
10	<b>Level of course</b>	Undergraduate
11	<b>Year of study and semester (s)</b>	Second semester of the 3 <sup>rd</sup> year
12	<b>Final Qualification</b>	PharmD
13	<b>Other department (s) involved in teaching the course</b>	N/A
14	<b>Language of Instruction</b>	English
15	<b>Teaching methodology</b>	<input type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	<b>Electronic platform(s)</b>	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	<b>Date of production/revision</b>	22/2/2021

### 18 Course Coordinator:

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### 19 Course Instructors:

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## ۲۰ Course Description:

This course covers the basic information of microorganisms, their basic structure and mode of growth. Medical, pharmaceutical and environmental importance of some microorganisms. Basic principles of immunity and immunization. Anti-microbial chemotherapy: mode of action and prudent use.

## ۲۱ Course aims and outcomes:

### A- Aims:

1. Provide the students with the basic information about microorganisms, their basic structure and mode of growth
2. Introduce some microorganisms that have medical, pharmaceutical and environmental importance.
3. Provide the students with the basic principles of immunity and immunization
4. Provide the students with the basic information about the different types of antimicrobial therapy, their prudent use and their mode of action
5. Provide the students with the basic information about the common infectious diseases including their causative agent, transmission, clinical manifestation, prevention and treatment.

### B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course, students will be able to:

- **Develop, integrate, and apply knowledge from the foundational sciences (learner)**
  1. Identify the scope, importance and the major milestones of microbiology
  2. Identify the different types of microscopes, their main applications and microbiological specimen preparation techniques
  3. Compare between different types/classes of microorganisms, and identify the composition and function of their major cellular structures
  4. Identify the principles of microbial growth and culturing, the factors affecting them and their applications in the diagnosis of infectious diseases
  5. Recognize the major classes of antimicrobial agents, their mechanism of action, spectrum of activity and microbial resistance mechanisms.
  6. Recognize the nature of host-microbe relationship and its role in the disease process
  7. Recognize the different host defense mechanisms and appreciate their role in protecting our body against microorganisms
  8. Recognize the common infectious diseases affecting human organ systems and identify their causative agent, transmission, clinical manifestation, prevention and treatment.
- **Proactively investigates new knowledge, approaches or behavior and takes steps to evaluate and improve performance (self-learner)**
  8. Seek actively new knowledge related to infectious diseases and their appropriate preventive and control measures by referring to the relevant scientific resources
- **Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society (professional)**
  9. Communicate effectively and respectfully with professors and classmates
  10. Show responsibility, accountability and commitment by complying with tutor's instructions and relevant university regulations
  11. Demonstrate integrity by not cheating and not committing plagiarism

## ۲۲. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Method (Platform)	Evaluation Methods	References
1	1.1	Introduction	Synchronous (MS Teams)	Quiz / Final Exam	Jacquelyn G. Black & Laura J. Black. Microbiology: Principles and Explorations. John Wiley & Sons. 9th Edition (2015)
	1.2	Scope and history of Microbiology	Synchronous (MS Teams)		
2	2.1	Microscopy and staining	Synchronous (MS Teams)	Mid Exam / Final Exam	
	2.2	Characteristics of prokaryotic and eukaryotic cells	Synchronous (MS Teams)		
3	3.1	Characteristics of prokaryotic and eukaryotic cells	Synchronous (MS Teams)		
	3.2	Growth and culturing of bacteria	Synchronous (MS Teams)		
4	4.1	Growth and culturing of bacteria	Synchronous (MS Teams)		
	4.2	Growth and culturing of bacteria	Synchronous (MS Teams)		
5	5.1	Taxonomy and bacterial identification	Synchronous (MS Teams)		
	5.2	Viruses	Synchronous (MS Teams)		
6	6.1	Viruses	Synchronous (MS Teams)		
	6.2	Viruses	Synchronous (MS Teams)		
Self-study		Eukaryotic microorganisms and parasites	Self-reading		
7	7.1	Antimicrobial therapy	Synchronous (MS Teams)	Final Exam	
	7.2	Antimicrobial therapy	Synchronous (MS Teams)		
8	8.1	Antimicrobial therapy	Synchronous (MS Teams)		
	8.2	Antimicrobial therapy	Synchronous (MS Teams)		
Self-study		Host microbe relationships and disease processes	Self-reading		
9	9.1	Epidemiology and nosocomial infections	Synchronous (MS Teams)		
	9.2	Diseases of the skin and eyes; wounds and bites	Synchronous (MS Teams)		
10	10.1	Diseases of the skin and eyes; wounds and bites	Synchronous (MS Teams)		
	10.2	Diseases of the skin and eyes; wounds and bites	Synchronous (MS Teams)		
11	11.1	Urogenital and sexually transmitted diseases	Synchronous (MS Teams)		
	11.2	Urogenital and sexually transmitted diseases	Synchronous (MS Teams)		

12	12.1	Diseases of the respiratory system	Synchronous (MS Teams)		
	12.2	Diseases of the respiratory system	Synchronous (MS Teams)		
13	13.1	Diseases of the nervous system	Synchronous (MS Teams)		
	13.2	Diseases of the nervous system	Synchronous (MS Teams)		
14	14.1	Oral and gastrointestinal diseases	Synchronous (MS Teams)		
	14.2	Oral and gastrointestinal diseases	Synchronous (MS Teams)		

### 3 Course Requirements:

<p>Students should have:</p> <ul style="list-style-type: none"> <li>- Computer</li> <li>- Internet connection</li> <li>- Webcam</li> <li>- Active university account on Moodle (e-learning) website</li> <li>- Active university account on Microsoft Teams</li> </ul>
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### 4 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
Quiz	10	<ul style="list-style-type: none"> <li>• Scope and history of Microbiology</li> <li>• Microscopy and staining</li> </ul>	Week 4	Moodle
Mid Exam	30	<ul style="list-style-type: none"> <li>• To be determined</li> </ul>	Week 7	On Campus
Assignment (Video Presentation)	10	<ul style="list-style-type: none"> <li>• To be determined</li> </ul>	Week 9-10	Moodle
Final Exam	50	All topics	Week 16	On Campus

### 5 Course Policies:

<p>A- Attendance policies: As per the applicable university regulations</p> <p>B- Absences from exams and submitting assignments on time: As per the applicable university regulations</p> <p>C- Health and safety procedures: N/A</p> <p>D- Honesty policy regarding cheating, plagiarism, misbehavior:</p>
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As per the applicable university regulations  
E- Grading policy:  
As per the applicable school bylaw  
F- Available university services that support achievement in the course:  
Moodle (e-learning) website  
Microsoft Teams institutional subscription

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A- Required book(s), assigned reading and audio-visuals:  
- Jacquelyn G. Black & Laura J. Black. Microbiology: Principles and Explorations. John Wiley & Sons. 9<sup>th</sup> Edition (2015)

B- Recommended books, materials and media:  
- Karen C. Carroll, Janet Butel & Stephen Morse. Jawetz Melnick & Adelbergs Medical Microbiology. McGraw-Hill Education. 27<sup>th</sup> Edition (2015)  
- M.T. Madigan, J.M. Martinko, K.S. Bender, D.H. Buckley & D.A. Stahl. Brock Biology of Microorganisms. Benjamin Cummings. 14<sup>th</sup> Edition (2014)  
- Gerard J. Tortora, Berdell R. Funke & Christine L. Case. Microbiology: An Introduction. Benjamin Cummings. 12<sup>th</sup> Edition (2015)

۶۷ **Additional information:**

Name of Course Coordinator: **Mahmoud Alkawareek** Signature: ----- Date: **22/2/2021**

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

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

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

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