

Philadelphia University	 <b>PHILADELPHIA UNIVERSITY</b> <small>THE WAY TO THE FUTURE</small>	Approved Date:
Faculty: Pharmacy		Issue:
Department: Pharmacy		Credit Hours: 3
Academic Year: 2021/2022		<b>Course Syllabus</b>

### Course Information

Course No.	Course Title	Prerequisite
52030100	Microbiology and Immunology	General Biology 240101
Course Type		Class Time
<input type="checkbox"/> University Requirement <input checked="" type="checkbox"/> Faculty Requirement <input type="checkbox"/> Major Requirement <input type="checkbox"/> Elective <input type="checkbox"/> Compulsory		Sun, Tue 8:15- 9:45 Mon, Wed 9:45- 11:15
		Room No.
		520

### Instructor Information

Name	Office No.	Phone No.	Office Hours	E-mail
Dr Reham aljalamdeh	502	+9622637444 Ext: 2360	Sun, Tue 11-12 Mon, Wed 11:30-12:30	raljalamdeh@philadelphia.edu.jo

### Course Delivery Method

<input type="checkbox"/> Blended <input type="checkbox"/> Online <input type="checkbox"/> Physical			
Learning Model			
Percentage	Synchronous	Asynchronous	Physical
	0	0	100%

### Course Description

The course covers the main concepts of microbial classifications, structure and morphology (size, shape, staining reaction), and physiology of microorganisms (reproduction, growth, nutrition, cultivation, and metabolism). Microbial growth and different factors influencing microbial growth, host-parasite relationship, virulence factors, disease development and host response to microbial invasion, and mechanisms of host resistance. The course also covers the principles of human immunity to microbial infections, both innate immunity (phagocytosis, complement system, interferon), and adaptive immunity (passive and active immunity), cell-mediated & humoral immune responses are also considered.

## Course Learning Outcomes

Number	Outcome	Corresponding Program Outcomes	Corresponding Competencies
<b>Knowledge</b>			
<b>K1</b>	Acquire basic information about different types of microbes and identify morphology, structure, and properties of microorganisms	Kp1,	C1
<b>K2</b>	Explain the main differences between gram positive and gram negative bacteria and how this influences the type of antimicrobial therapy	Kp1	C1
<b>K3</b>	Identify in details types and reasons of antimicrobial resistance	Kp1	C1
<b>K4</b>	Describe the different types of host immune responses	Kp1	C1
<b>Skills</b>			
<b>S1</b>	To improve transfesable skills including problem solving and teamwork	Sp2, Sp9	C8, C15
<b>S2</b>	To improve their ability to communicate scientific ideas effectively and confidently	Sp2, Sp9	C8, C15
<b>S3</b>	Develope the skill of self learning	Sp2, Sp9	C8, C15

## Learning Resources

<b>Course Textbook</b>	Microbiology: an introduction, Tatora, Funke &Case, Benjamine Cunnings. 11edition, 2013, ISBN-13: 978-0-321-92915-0
<b>Supporting References</b>	Karen C. Carroll, Janet Butel & Stephen Morse. Jawetz Melnick & Adelbergs Medical Microbiology. McGrawHill Education. 27th Edition (2015) Gerard J. Tortora, Berdell R. Funke & Christine L. Case. Microbiology: An Introduction. Benjamin Cummings. 12th Edition (2015)
<b>Supporting Websites</b>	
<b>Teaching Environment</b>	<input checked="" type="checkbox"/> Classroom <input type="checkbox"/> laboratory <input type="checkbox"/> Learning Platform <input type="checkbox"/> Other

## Meetings and Subjects Time Table

Week	Topic	Learning Method*	Task	Learning Material
<b>1</b>	Introduction to Microbiology, Classification of microbes & Taxonomy, Brief History of Microbiology Microbial world, the ways by which microorganisms affect human lives &	Lecture		

	welfare, microbes & human diseases beneficial effect of microorganisms			
2	Eukaryotes & Prokaryotes, Fungi, bacteria, viruses, parasites	Lecture		
3	Observing microorganisms through a microscope, bacterial cell structure, morphology microbial metabolism	Lecture		
4	Microbial growth, reproduction & cultivation	Lecture	Home work	
5	Physical factors that affect growth: oxygen, temp., CO <sub>2</sub> , pH, osmotic pressure, light, & radiation	Lecture + self-reading		
6	Antimicrobial chemotherapy	Lecture	Home work	
7	Normal microflora, opportunist pathogen, true pathogens, diseases & their classification	Lecture		
8	Host parasite relationship, mechanisms of virulence	Lecture		
9	Mechanisms of virulence & mechanisms of resistance	Lecture		
10	Basic concepts in immunology, innate immunity, first line defenses (physical, and chemical factors)	Lecture	Short presentation	
11	Second line defenses (phagocytosis, complement system, interferon, inflammation)	Lecture + self-reading		
12	Adaptive immunity, antibody, antigen binding site, active and passive immunity	Lecture		
13	Naturally and artificially acquired immunity, memory cells, secondary immune response	Lecture		
14	Humoral & cell mediated immune response	Lecture		
15	Specimen examination, Immunization, vaccination program	Lecture		
16	<b>Final Exam</b>			

\*Includes: lecture, flipped Class, project based learning, problem solving based learning, collaboration learning.

### Course Contributing to Learner Skill Development

<b>Using Technology</b>
Using power point for preparing presentations
<b>Communication Skills</b>
Oral discussion and presentation
<b>Application of Concept Learnt</b>
Practical applications of how to use different types of microscopes and several techniques for isolation of pure culture in the practical courses

## Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)	Course Outcomes to be Assessed
<b>Mid Term Exam</b>	<b>% 30</b>	<b>11<sup>th</sup> week</b>	<b>K1, K2</b>
<b>Term Works*</b>	<b>% 30</b>	<b>Continous</b>	<b>K1, K2 S1-S3</b>
<b>Final Exam</b>	<b>% 40</b>	<b>16<sup>th</sup> week</b>	<b>K1-K4</b>
<b>Total</b>	<b>%100</b>		

\* Include: quizzes, in-class and out of class assignment, presentations, reports, videotaped assignment, group or individual project.

## Alignment of Course Outcomes with Learning and Assessment Methods

Number	Learning Outcomes		Learning Method*	Assessment Method**
<b>Knowledge</b>				
<b>K1</b>	Aquire basic information about different types of microbes and identify morphology, structure, and properties of microorganisms			<b>Exam</b>
<b>K2</b>	Explain the main differences between gram positive and gram negative bacteria and how this influences the type of antimicrobial therapy			<b>Exam +home work</b>
<b>K3</b>	Identify in detalis types and reasons of antimicrobial resistance			
<b>K4</b>	Describe the different types of host immune respones			
<b>Skills</b>				
<b>S1</b>	To improve transfesable skills including problem solving and teamwork			
<b>S2</b>	To improve their ability to communicate scientific ideas effectively and confidently			
<b>S3</b>	Devolope the skill of self learning			

\*Include: lecture, flipped class, project based learning, problem solving based learning, collaboration learning.

\*\* Include: quizzes, in-class and out of class assignments, presentations, reports, videotaped assignments, group or individual projects.

## Course Polices

Policy	Policy Requirements
<b>Passing Grade</b>	The minimum pass for the course is (50%) and the minimum final mark is (35%).
<b>Missing Exams</b>	<ul style="list-style-type: none"> <li>• Anyone absent from a declared semester exam without a sick or compulsive excuse accepted by the dean of the college that proposes the course, a zero mark shall be placed on that exam and calculated in his final mark.</li> <li>• Anyone absent from a declared semester exam with a sick or compulsive excuse accepted by the dean of the college that proposes the course must submit proof of his excuse within a week from the date of the excuse's disappearance, and in this case, the subject teacher must hold a compensation exam for the student.</li> <li>• Anyone absent from a final exam with a sick excuse or a compulsive excuse accepted by the dean of the college that proposes the material must submit proof of his excuse within three days from the date of holding that exam.</li> </ul>
<b>Attendance</b>	The student is not allowed to be absent more than (15%) of the total hours prescribed for the course, which equates to six lecture days (n t) and seven lectures (days). If the student misses more than (15%) of the total hours prescribed for the course without a satisfactory or compulsive excuse accepted by the dean of the faculty, he is prohibited from taking the final exam and his result in that subject is considered (zero), but if the absence is due to illness or a compulsive excuse accepted by the dean of the college that The article is introduced, it is considered withdrawn from that article, and the provisions of withdrawal shall apply to it.
<b>Academic Integrity</b>	Philadelphia University pays special attention to the issue of academic integrity, and the penalties stipulated in the university's instructions are applied to those who are proven to have committed an act that violates academic integrity, such as cheating, plagiarism (academic theft), collusion, intellectual property rights.

### Program Learning Outcomes to be Assessed in this Course

Number	Learning Outcome	Course Title	Assessment Method	Targeted Performance level

### Description of Program learning Outcomes Assessment Method

Number	Detailed Description of Assessment

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**Assessment Rubric of the Program Learning Outcomes**

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