

Philadelphia University	 PHILADELPHIA UNIVERSITY <small>THE WAY TO THE FUTURE</small>	Approved Date: 10/10/2022
Faculty: Pharmacy		Issue:1
Department:		Credit Hours:3
Academic Year:2022/2023	Course Syllabus	Bachelor: Pharmacy

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		Sections
		Room No.

Instructure Information

Name	Office No.	Phone No.	Office Hours	E-mail

Course Delivery Method

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

Course Description

The course covers the main principles of microbial classification, morphology (size, shape, staining reaction and structure), physiology of microorganisms (reproduction, growth, nutrition, cultivation, metabolism). The physical factors affecting 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 & humeral immune responses are also considered.

Course Learning Outcomes

Number	Outcome	Corresponding Program Outcomes	Corresponding Competencies
Knowledge			
K1	Acquire basic information about different types of microbes and identify morphology, structure, and properties of microorganisms.	K _p 1	C1
K2	Explain the main differences between gram positive and gram negative bacteria and how this influences the type of antimicrobial therapy.	K _p 1	C1
K3	Identify in details, types and reasons of antimicrobial resistance.	K _p 1	C1
K4	Describe the different types of host immune responses	K _p 1	C1
Skills			
S1	To improve transferrable skills including problem solving and teamwork.	S _p 2, S _p 9	C8, C15
S2	To improve their ability to communicate scientific ideas effectively and confidently.	S _p 2, S _p 9	C8, C15
S3	Develop the skills of self learning.	S _p 2	C8, C15

Learning Resources

Course Textbook	Gerard J. Tortora, Berdell R. Funke and Christine L. Case. Microbiology: An introduction. Benjamin Cummings, 12th Edition (2015)
Supporting References	Prescott's microbiology Willey JM., Sherwood LM. 10th edition (2017) McGraw-Hill, New York ISBN 978-981-3151-26-0
Supporting Websites	Med Line
Teaching Environment	<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
1	Introduction to Microbiology, Classification of microbes & Taxonomy, Brief History of Microbiology Microbial world, the ways by which microorganisms affect human lives & welfare, microbes & human diseases beneficial effect of microorganisms	Lecture		
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		
5	Physical factors that affect growth: oxygen, temp., CO ₂ , pH, osmotic pressure, light, & radiation	Lecture		
6	Antimicrobial chemotherapy	Lecture		
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		
11	Second line defenses (phagocytosis, complement system, interferon, inflammation)	Lecture		
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	Final Exam			

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

Course Contributing to Learner Skill Development

Using Technology
Using power point and relevant softwares for preparing presentations.
Communication Skills
Writing reports regarding assignments Oral presentations
Application of Concept Learnt
Practical applications of how to use microscopes and several techniques for isolation of pure culture in the practical course

Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)	Course Outcomes to be Assessed
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Mid Term Exam	% 30	11th week	K1, K2 S1, S2
Term Works*	% 30	Continious	K1, K2 S1, S2, S3
Final Exam	% 40	16th week	K1-K4 S1-S3
Total	%100		

* 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**
Knowledge			
K1	Acquire basic information about different types of microbes and identify morphology, structure, and properties of microorganisms.	Lecture	Subjective Quiz Exam
K2	Explain the main differences between gram positive and gram negative bacteria and how this influences the type of antimicrobial therapy.	Lecture	Exam Objective questions
K3	Identify in details, types and reasons of antimicrobial resistance.	Lecture	Exam Objective questions
K4	Describe the different types of host immune responses	Lecture Assignment	Exam Objective questions
Skills			
S1	To improve transfesable skills including problem solving and teamwork.	Lecture	Exam Objective questions
S2	To imoprove their ability to communicate scientific ideas effectively and confidently.	Lecture	Subjective Quiz Exam
S3	Develop the skills of self learning.	Lecture	Exam Objective questions

*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
Passing Grade	The minimum pass for the course is (50%) and the minimum final mark is (35%).
Missing Exams	<ul style="list-style-type: none"> • 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. • Anyone absent from a declared semester exam with a sick or

	<p>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.</p> <ul style="list-style-type: none"> • 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.
Attendance	<p>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.</p>
Academic Integrity	<p>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.</p>

Program Learning Outcomes to be Assessed in this Course

Number	Learning Outcome	Course Title	Assessment Method	Targeted Performance level
K _p 3	Design prevention, intervention, and educational strategies for individuals and communities to manage chronic (and infectious) disease and improve health and wellness	Microbiology and Immunology	Objective Exam	80% of students have a minimum score 8 out of 10

Description of Program learning Outcomes Assessment Method

Number	Detailed Description of Assessment
K _p 3	10 multiple choice questions in the final exam

Assessment Rubric of the Program Learning Outcomes

Each multiple choice question will be allocated one point totaling 10 points