

Philadelphia University	 PHILADELPHIA UNIVERSITY <small>THE WAY TO THE FUTURE</small>	Approved Date: 10/10/2022
Faculty: Pharmacy		Issue:1
Department:		Credit Hours:2
Academic Year:2022/2023		Course Syllabus

Course Information

Course No.	Course Title	Prerequisite
0520325	Pharmaceutical Microbiology	Microbiology & Immunology 0520301
Course Type		Class Time
<input type="checkbox"/> University Requirement <input type="checkbox"/> Faculty Requirement <input type="checkbox"/> Major Requirement <input type="checkbox"/> Elective <input checked="" 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
		100%

Course Description

The course covers the anatomy and physiology of some microorganisms likely to be of importance to the applied field of pharmacy, the principles of microbial Pathogenicity and epidemiology, nosocomial infection, emerging infections, factors affecting growth, control of microbial growth, recombinant DNA technology is also considered. There is a special emphasis on the microbial aspects of pharmaceutical processing, sterilization control and sterility assurance, sterile pharmaceutical products. In addition a full details concentrating on antimicrobial agents (types and mode of action of antibiotics and synthetic antimicrobial agents), clinical uses of antimicrobial drugs, bacterial resistance to antibiotics, chemical disinfectants, antiseptics and preservatives.

Course Learning Outcomes

Number	Outcome	Corresponding Program Outcomes	Corresponding Competencies
Knowledge			
K1	Acquaint students with Microbiology which has a special bearing on pharmacy in all its aspects	K _p 1, K _p 3	C1
K2	Understand of microbiological aspects of Good Manufacturing Practices.	K _p 1, K _p 3	C1,C6
K3	Grasp the pathogenicity aspects of Microorganisms	K _p 1, K _p 3	C1,C2
K4	Understand the principles of important epidemiological principles	K _p 1, K _p 3	C1,C2
K5	Understand the mechanism of antibiotic action and the development of Antibiotic Resistance Bacterial Strains	K _p 1, K _p 3	C1, C6
Skills			
S1	Be able to grasp the necessity of developing newer chemotherapeutics and limiting the development of antibiotic resistance	S _p 2, S _p 4	C6
S2	Demonstrate ability to practice good manufacturing practices regarding microbiological aspects of pharmaceutical industry	S _p 2, S _p 3	C6
S3	Demonstrate ability to represent data and prepare reports in a clear systematic way	S _p 2	C12

Learning Resources

Course Textbook	Pharmaceutical Microbiology, W.B. Hugo & A.D. Russell, Publisher: Wiley, Indi; 8 th edition 2013 978-81-265-4066-2
Supporting References	1.Microbiology an introduction 0-321-39602-2Tortora, G.J, Fumke, B.R. Case, C.L.Pearson Benjamin Cummings, 2007 2.Prescott, Harley and Kleins microbiology 978-007-126727-4 Joanne M. Wiley, Linda M. Sherwood, Christopher J. Woolverton McGrow Hill, 2008
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 Pharmaceutical Microbiology	Lecture		Vision & Mission of Faculty of Pharmacy

				Course Syllabus
2	Biology of microorganisms review (bacteria, viruses, yeast & molds)	Lecture		Text Book Part 1 (1-6)
3	Recombinant DNA technology	Lecture		Text book Part 5 (25), Microbiology an introduction (Chapter 9)
4	Epidemiology	Lecture		Text book Part 2
5	Principles of pathogenicity	Lecture		Text book Part 2
6	Control of microbial growth	Lecture		Text book Part 4 (18-20)
7	Antimicrobial agents, chemotherapy & chemotherapeutic, types of antibiotics & synthetic antimicrobial agents and their mechanisms of actions	Lecture		Text book Part 3 (11, 12, 14)
8	Factors which affect choice of antimicrobial agents	Lecture		Text book Part 3 (15, 16)
9	Chemical disinfectants, antiseptics and preservatives	Lecture		Text book Part 4 (19,20)
10	Dynamics of disinfection	Lecture		Text book Part 4 (17-21)
11	Preservatives	Lecture		Text book Part 4 (19)
12	Microbial spoilage and preservation of pharmaceutical products	Lecture		Text book Part4 (19) + Part 5 (22-24)
13	Sterilization control and sterility testing	Lecture		Text book Part 5 (22-24)
14	Clinical uses of antimicrobial drugs	Lecture		Text book Part3 (14-16)
15	Bacterial resistance to antibiotics	Lecture		Text book Part 3 (13)
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. Using websites regarding epidemiological studies and animations
Communication Skills
Writing reports regarding assignments Oral presentations
Application of Concept Learnt
Knowledge of latest terms and findings in dealing with epidemiological cases in practice and hospitals

Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)	Course Outcomes to be Assessed
Mid Term Exam	% 30	11 th week	K1, K2, K3 S1, S2
Term Works*	% 30	Continious	S1, S2, S3
Final Exam	% 40	16 th week	K1-K5 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	Acquaint students with Microbiology which has a special bearing on pharmacy in all its aspects	Lecture	Subjective Quiz Exam Objective questions
K2	Understand of microbiological aspects of Good Manufacturing Practices.	Lecture	Exam Objective questions
K3	Grasp the pathogenicity aspects of Microorganisms	Lecture	Exam Objective questions
K4	Understand the principles of important epidemiological principles	Lecture Assignment	Exam Objective questions
K5	Understand the mechanism of antibiotic action and the development of Antibiotic Resistance Bacterial Strains	Lecture	Subjective Quiz Exam Objective questions
Skills			
S1	Be able to grasp the necessity of developing newer chemotherapeutics and limiting the development of antibiotic resistance	Lecture	Exam Objective questions
S2	Demonstrate ability to practice good manufacturing practices regarding microbiological aspects of pharmaceutical industry	Lecture	Subjective Quiz Exam

			Objective questions
S3	Demonstrate ability to represent data and prepare reports in a clear systematic way	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 Policies

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 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. • 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	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.
Academic Integrity	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
K_p3	Design prevention, intervention, and educational strategies for	Pharmaceutical microbiology	Objective Exam	80% of students

	individuals and communities to manage chronic (and infectious) disease and improve health and wellness			have a minimum score 8 out of 10
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Description of Program learning Outcomes Assessment Method

Number	Detailed Description of Assessment
K_p3	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