



Philadelphia University
Faculty of Pharmacy
Second Second Semester 2016/2017

Course Syllabus

Course Title: Pharmaceutical Microbiology	Course code: 510334
Course Level: Third year	Course prerequisite (s) and/or co requisite (s): Biochemistry 1
Credit hours: 2	

Academic Staff

Specifics

Name	Rank	Office Number and Location	Office Hours	E-mail Address
Dr. Nabil A.S. NIMER (Coordinator)	Assistant Professor	P523		n_nimer@philadelphia.edu.jo

Course module 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, 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 module objectives:

Course module objectives and knowledge outcome:

The course is designed to acquaint students with Microbiology which has a special bearing on pharmacy in all its aspects, this will range from the manufacture and quality control of Pharmaceutical products to an understanding of the mode of action of antibiotics.

Learning outcomes:

> Knowledge and understanding

--Students should be able to:

- 1- understand the principle of sterilization and disinfection
- 2- Have knowledge of all types of antimicrobial agents, and their mechanisms of action.
- 3- To deal with bacterial resistance against antimicrobial drugs.

> Cognitive skills (thinking and analysis).

-Student should be able to grasp the necessity of developing newer chemotherapeutics and limiting the development of antibiotic resistance and to deal with microbiological aspects of pharmaceutical industry

> Communication skills (personal and academic).

-We hope that students will practice independent thinking and convey their thoughts to their tutors. They will search or are given problems and asked to find solutions for them. Students will be encouraged to express themselves more effectively and speak with more confidence and listen carefully to build rapport.

> Practical and subject specific skills (Transferable Skills).

-Practical evaluation of feasibility of student s proposal to tackle a problem

Course/ module components

• Books

1. Pharmaceutical Microbiology, W.B. Hugo & A.D. Russell, Publisher: Blackwell Science; 8th edition 2011 (Main Text Book)
2. Microbiology: an introduction, Totroa, Funke & Case, Benjamine Cunnings 2007
3. Pharmaceutical Microbiology, Anthony Cundell, Publisher : Lnterpharm Pr;2005

•References

Pharmaceutical Microbiology, Anthony Cundell, Publisher : Lnterpharm Pr;2005

Journals

--J. Med. Microbiology

--J. of Pharmacy

--J. General Microbiology

Websites.

--Med. Line

Teaching methods:

The 45 hours in total will be mainly lectures with few tutorials and including two one hour exams. In addition to lectures and seminars, students are asked to write research on topic they choose from a list of subjects.

Assessment instruments

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20%
Second examination	20%
Reports, Research Projects, Quizzes, Home works, Projects	20%
Final examination: 50 marks	40%
Total	100

Course/module academic calendar

week	Basic and support material to be covered
(1)	Introduction to Pharmaceutical Microbiology
(2)	Biology of microorganisms review (bacteria, viruses, yeast & molds), principles of microbial pathogenicity and epidemiology
(3)	Recombinant DNA technology
(4)	Control of microbial growth
(5)	Antimicrobial agents, chemotherapy and chemotherapeutic, types of antibiotics and synthetic antimicrobial agents
(6) First examination	Mechanisms of action of antibiotics
(7)	Bacterial resistance to antibiotics
(8)	Clinical uses of antimicrobial drugs
(9)	Factors which affect choice of antimicrobial agents
(10)	Chemical disinfectants, antiseptics and preservatives
(11) Second examination	Dynamics of disinfection
(12)	Evaluation of non-antibiotic antimicrobial agents
(13)	Evaluation of preservatives
(14)	Microbial spoilage and preservation of pharmaceutical products
(15)	Sterilization control and sterility testing , sterile pharmaceutical products
(16) Final Examination	

Expected workload:

On average students need to spend 3 hours of study and preparation for each 50-minute lecture/tutorial.

Attendance policy:

Absence from lectures and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the faculty of science shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.