



Course Syllabus

Course Code	Course Title	ECTS Credits
IMPH-250	Pharmaceutical Microbiology/ Φαρμακευτική Μικροβιολογία	6
Prerequisites	Department	Semester
IMPH-122	Health Sciences	Fall/Spring
Type of Course	Field	Language of Instruction
Compulsory	Pharmacy	Greek/English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Dr Tolis Panayi	2 nd
Mode of Delivery	Work Placement	Corequisites
Face-to-Face	N/A	N/A

Course Objectives:

The main objectives of the course are to:

- Introduction to the key principles of microbial structure and pathogenicity
- Prokaryotic and eucaryotic diversity
- Basic principles of microbial growth and its control, antimicrobial agents and antibiotics
- Basic virology knowledge
- Microorganism and host interactions
- Pathogenicity, virulence, and epidemiology
- Microbial techniques, analysis of experimental results and preparation of written laboratory reports

Learning Outcomes:

After completion of the course students are expected to be able to:

- Define the structure of eukaryotic and prokaryotic cells and understand their differences
- Understand the ubiquitous nature of microorganisms and their influence on the humans and the environment
- Understand the chemical and physical requirements for microbial growth and discuss their application to prevent transmission of infectious diseases
- Explain the most common antimicrobial agents, their mechanism of action and their use

- Explain the basic principles of epidemiology and pathogenicity
- Examine microorganisms in the laboratory

Course Content:

1. Introduction to the scope of microbiology
2. Microscopy and the structure of bacterial cell
3. Microbial growth
4. Estimation and control of bacterial population
5. Microbial genetics and variation
6. Viruses and prions
7. Interaction between the host organism and the virus
8. Basic principles of epidemiology and pathogenesis of infections
9. Epidemiology of infections
10. Microbial mechanisms of pathogenicity and antimicrobial drugs
11. Lab exercises
 - Introduction in microscopy and aseptic technique
 - Quantitative determination of microbial population
 - Isolation of microorganisms with the use of nutrient substrates
 - Photonic microscopy
 - Identification of microorganisms
 - Control of microbes by chemical methods

Learning Activities and Teaching Methods:

Lectures, class discussion, laboratory reports/ quizzes

Assessment Methods:

Final Examination, midterm exam, Lab reports and exam

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Brock Βιολογία των	Madigan T. M. et al.	Πανεπιστημιακές Εκδόσεις Κρήτης	2010 10th ed.	9789605242015 9789605242008

μικροοργανισμών (Τόμος I & II)				
Brock Biology of microorganisms	Madigan T. M. et al.	Pearson	2015 14th ed.	9780321897398
Microbiology: a human perspective	Nester E. W. et al.	McGraw- Hill	2016 8th ed.	9780073522593
Microbiology an introduction	Tortora G.J. et al.	Pearson	2010 10th ed.	9780321733603