



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY OF PATRAS
SCHOOL OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
UNDERGRADUATE STUDIES' COURSES



COURSE DESCRIPTION: **PHARMACEUTICAL MICROBIOLOGY AND IMMUNOLOGY**
COURSE CODE: **PHA-B23-NEW**

**PHARMACEUTICAL MICROBIOLOGY AND IMMUNOLOGY
COURSE DESCRIPTION**

1. GENERAL

SCHOOL	HEALTH SCIENCES		
SEPARTMENT	PHARMACY		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	PHA-B23-NEW	SEMESTER OF STUDIES	4th
COURSE TITLE	PHARMACEUTICAL MICROBIOLOGY AND IMMUNOLOGY		
	INDEPENDENT TEACHING ACTIVITIES	TEACHING HOURS PER WEEK	ECTS CREDITS
	Lectures	4	7
	Laboratory practice	1	
COURSE TYPE	Scientific Field course		
PREREQUISITE COURSES:	-		
TEACHING AND ASSESSMENT LANGUAGE:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Not offered		
COURSE WEBPAGE (URL)	http://www.pharmacy.upatras.gr/images/DS/PHA-B23-EN.pdf		

2. LEARNING OUTCOMES

Learning outcomes
<p>In the framework of the course of Pharmaceutical Microbiology, the student deals with the study of the introductory elements of Microbiology and Immunology. In particular, the student studies the cellular structure of prokaryotic and eukaryotic organisms, the chemical composition, the manipulation of microorganisms at clinical and laboratory level, the basic elements of bacteria, fungi, viruses e.t.c.</p> <p>At the same time it deals with the study of Immune system and its mechanisms. In particular, we study Physical and Adoptive Immunity, the basic organs and tissues of the body that express it, the basic cells that are involved in and contribute to defense against pathogens. In addition, the student is introduced into the concept of Autoimmunity. This knowledge will enable him to understand the Pharmacology and Therapeutics of these diseases.</p>
General Abilities
<ul style="list-style-type: none"> • Data search and mining • Data evaluation using modern tools and methods • Independent thinking and work • Collaborative work and joint research efforts • Work in a competitive environment • Work in an interdisciplinary scientific environment

3. COURSE CONTENT

Introduction to microbiology: history, evolution, classification, structure, definitions

- Methods to be used and organisms in microbiology
- Microbial growth - kinetics
- Food and energy
- Microbial growth and control
- Cell/microbes culture
- Diseases and epidemiology
- Fungi: morphology, classification, drugs
- Viruses: structure of viruses, classification
- Bacteria: morphology, classification, infectious diseases

Introduction to the immune system

- Introduction to Molecular Genetics
- natural immunity
- antigen uptake and presentation
- antigen recognition
- cellular immune responses
- active mechanisms of cellular immunity
- humoral immune responses
- active mechanisms of humoral immunity
- immune tolerance and autoimmunity
- immune responses against tumors and transplants
- hypersensitivity
- immunodeficiencies

4. TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING METHOD	Interactive teaching within a classroom	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of modern technologies, web-based applications and software in laboratory training and in the communication with students.	
TEACHING ORGANIZATION	Teaching Method	Semester Workload
	Theoretical courses	52
	Tutorial	13
	Independent study	110
	Total number of hours for the Course (25 hours of work-load per ECTS credit)	175
STUDENT ASSESSMENT	Evaluation of the students is carried out through written examination at the end of the semester. Written examination is carried out in Greek language. Written examination includes the description for a number of theory topics and multiple-choice exercises. Evaluation criteria and rules are presented to the students at the beginning of the theory courses and laboratory training courses.	

5. RECOMMENDED LITERATURE

Suggested Books:

General Microbiology, A. Karagouni-Kyrtsoy, Ed. Stamoulis
 Basic Immunology, Abba, Ed. Pashalidis
 General Microbiology, Kalkani-Bousiakou, Ed. ELLIN