



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY OF PATRAS
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DEPARTMENT OF PHARMACY
POSTGRADUATE PROGRAM: **DRUG DESIGN AND DEVELOPMENT**

COURSE TITLE: **APPLIED BIOTECHNOLOGY AND BIOINFORMATICS**
CODE: **DPHA_C02**

**APPLIED BIOTECHNOLOGY AND BIOINFORMATICS
COURSE OUTLINE**

1. GENERAL

SCHOOL	HEALTH SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF PHARMACY		
PARTICIPATING INSTITUTIONS	-		
TITLE of POSTGRADUATE PROGRAM	DRUG DESIGN AND DEVELOPMENT		
LEVEL	POSTGRADUATE		
COURSE CODE	DPHA_C02	SEMESTER	B'
COURSE TITLE	APPLIED BIOTECHNOLOGY AND BIOINFORMATICS		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
Courses	3	5	
COURSE TYPE	Specialized Background, Επιστημονικών Περιοχών (Chemistry, Biochemistry, Cellular Biology, Molecular Biology, Bioinformatics), Skills Development		
PREREQUISITE COURSES	None		
LANGUAGE of INSTRUCTION and EXAMINATIONS	Greek		
COURSE OFFERED to ERASMUS STUDENTS	Yes		
COURSE (URL)	http://www.pharmacy.upatras.gr/images/DS/DPHA_C02_EN.pdf		

2. LEARNING OUTCOMES

Learning Outcomes
<p>This course aims to acquire knowledge, skills and abilities related to level 7 of the European Qualifications Framework for Lifelong Learning.</p> <p>Upon successful completion of the course, students:</p> <ol style="list-style-type: none"> 1. will be able to understand and apply modern biotechnological methods for the study of pharmaceutical molecules and biomolecules 2. will be able to understand and apply modern bioinformatics methods to study the sequence, structure and function of biomolecules 3. They will have familiarized themselves with the basic concepts of modern biotechnology and bioinformatics, through the study of publications and modern literature

General Competences

- *Search for, analysis and synthesis of data and information, with the use of the necessary technologies*
- *Adapting to new situations*
- *Decision-making*
- *Working independently*
- *Team work*
- *Working in an international environment*
- *Working in an interdisciplinary environment*
- *Criticism and self-criticism*
- *Production of free, creative and inductive thinking*

3. SYLLABUS

LECTURES

- Transgenic Technology.
- Genetic targeting.
- Genetic databases.
- Big data analysis.
- Protein structure analysis and prediction.
- Analysis of nucleotide and amino acid sequences.
- Sequencing.
- Access and extracting information from databases.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face to face	
USE of INFORMATION and COMMUNICATIONS TECHNOLOGY	Extensive use of E-class to share archives and lectures, to communicate with students and to organize the lecture schedule.	
TEACHING METHODS	Activity	Semester Workload
	Lectures	39
	Analysis of scientific literature	39
	Study assignement	34
	Writing assignment / assignments	13
	Course Total (25 hours of work-load per ECTS credit)	125

STUDENT PERFORMANCE EVALUATION	Language of Evaluation: Greek / English Written exams <ul style="list-style-type: none">• Multiple choice questionnaires, Short answer questions, Open ended questions (40% of final grade) Public Presentation <ul style="list-style-type: none">• Evaluation of individual presentations (taking into account the individual observations of the group of postgraduate students and teachers (60% of final grade)
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5. RECOMMENDED BIBLIOGRAPHY

Suggested Bibliography:

- Recombinant DNA, James D. Watson, Jan A. Witkowski, Richard M. Myers, Amy A. Caudy
- Βιοχημεία, Stryer
- Βιοπληροφορική, Μπάγκος Παντελεήμων, ΚΑΛΛΙΠΟΣ

Related Academic Journals:

Cell, Nature, Nature Biotechnology, Bioinformatics, Journal of Molecular Biology, PLoS One, PloS One Biotechnology,