



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

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POSTGRADUATE PROGRAM: **DRUG DESIGN AND DEVELOPMENT**

COURSE TITLE: **PRECISION THERAPEUTICS**
CODE: **DPHA_C03**

**PRECISION THERAPEUTICS
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_C03	SEMESTER	B'
COURSE TITLE	PRECISION THERAPEUTICS		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
Courses	3	5	
COURSE TYPE	General Knowledge and Scientific field: Genetics, Genomics, Pharmacogenomics, Personalized Therapy. Development of Skills in critical evaluation and synthesis of experimental (and other) data.		
PREREQUISITE COURSES	-		
LANGUAGE of INSTRUCTION and EXAMINATIONS	Greek. However, a large part of lecture material, scientific articles and final exam questions is in english.		
COURSE OFFERED to ERASMUS STUDENTS	Yes		
COURSE (URL)	http://www.pharmacy.upatras.gr/images/DS/DPHA_C03_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 concepts such as pharmacogenomics and personalized therapy. 2. will know those therapeutic interventions which can be the object of individualization in all related medical specialties 3. have a global view of therapeutic interventions that are approved by regulatory agencies such as the FDA and the European Medicines Agency

4. understand concepts such as population pharmacogenomics, companion diagnostics and the role of pharmacogenomics in drug development and the pharmaceutical industry
5. will gain a better understanding of those interventions at a social, ethical and legal as well as economic level, which are required to be carried out in order to integrate personalized treatment into clinical practice.

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

1. Basic principles of targeted therapy/diagnosis
2. Pharmacokinetic and pharmacodynamic drug interactions. Modification of medication based on accompanying diseases and conditions, gender, age
3. Liquid Biopsy in Clinical Practice. Analytical platforms and liquid biopsy. Circulating cancer cells, miRNAs and lncRNAs, exosomes
4. Biomarkers in precision medicine. Drugs specifically administered based on genetic analysis/evaluation of the molecular target
5. Application of Pharmacogenomics in clinical practice
6. Precision approaches with novel nano-systems for targeted drug delivery/targeting
7. Economic, social and ethical dimensions of precision medicine approaches
8. Toxicogenomics

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face to face Physical presence of students/teachers in a lecture hall (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
	Presentations based on processing assigned material	30
	Analysis of scientific literature	56
	Course Total (25 hours of work-load per ECTS credit)	125
STUDENT PERFORMANCE EVALUATION	<p>Language of Evaluation: Greek / English</p> <p>Written exam comprising questions requiring short or extensive explanations, multiple questions and problem solving.</p> <ul style="list-style-type: none"> • The exam and answers are given in Greek, but the initial material of the problems may be in English (50% of the total grade) • Evaluation of individual presentations (50% of the total grade) 	

5. RECOMMENDED BIBLIOGRAPHY

Books

1. Pharmacogenomics and Proteomics (Greke edition, Parisianou Publications)
2. Molecular Diagnostics (Greek edition, Parisianou Publications)

Related Academic Journals:

Clinical Pharmacology and Therapeutics (Wiley)
 The Pharmacogenomics Journal (Springer-Nature)
 Pharmacogenomics (Future Medicine)