



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY OF PATRAS
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DEPARTMENT OF PHARMACY
UNDERGRADUATE STUDIES' COURSES



COURSE DESCRIPTION: **PHARMACOLOGY I**
COURSE CODE: **PHA-C13-NEW**

**PHARMACOLOGY I
COURSE DESCRIPTION**

1. GENERAL

SCHOOL	HEALTH SCIENCES		
SEPARTMENT	PHARMACY		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	PHA-C13-NEW	SEMESTER OF STUDIES	5th
COURSE TITLE	PHARMACOLOGY I		
INDEPENDENT TEACHING ACTIVITIES	TEACHING HOURS PER WEEK	ECTS CREDITS	
Lectures	4	6	
Laboratory work	2		
COURSE TYPE	Scientific Field course		
PREREQUISITE COURSES:	-		
TEACHING AND ASSESSMENT LANGUAGE:	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes [Instructed/Guided self study in english for Erasmus+ Students]		
COURSE WEBPAGE (URL)	http://www.pharmacy.upatras.gr/images/DS/PHA-C13-EN.pdf		

2. LEARNING OUTCOMES

Learning Outcomes
<p>In general, this class ambitions to facilitate the acquisition of knowledge, skills and capabilities at the level 6 of the European Framework of Skills of Lifelong Learning. In particular, upon completion, it aims to provide students with the following:</p> <ol style="list-style-type: none"> 1. Acquire a demonstrable knowledge and understanding of the knowledge area of Pharmacology and of Drug Action in humans, supported by supported by the use of textbooks of advanced level and by additional data derived from recent developments at the forefront of this field. 2. Understand the chemical cellular and physiological functional basis of therapeutic activity as well as of side effects 3. Be able to use the understanding and knowledge acquired in a manner showing a professional approach, based on analytical and synthetic inductive use of the data provided, in combination with other areas of knowledge to which they are exposed during their studies (e.g. Physiology, Biochemistry) 4. Be able to synthesize and communicate information and advice on problems related to the use and activity of drugs 5. Be able to approach complex novel problems related to pathophysiological situations and propose the right therapeutic (pharmacological) treatment and use of drugs 6. Students are expected to develop the skills and knowledge needed to continue in more advanced studies with a high degree of autonomy

General Abilities

Search, analyze and synthesize data and information, using the appropriate technology tools
 Adapt to new situations
 Decision- making
 Independent work
 Group work
 Work in an international environment
 Work in an inter-disciplinary environment
 Develop critical thought towards others and themselves
 Development of free, creative and inductive thinking

3. COURSE CONTENT

Lectures:

Introduction/General knowledge:

- Introduction to Pharmacology
- Basic Principles of Pharmacology
- Routes of drug administration
- Pharmacokinetics: Absorbance, distribution, metabolism and extraction of drugs
- Pharmacodynamics: Mechanisms of drug action, synergy, antagonism, dose-effect relationship, therapeutic index
- Parameters influencing the activity of drugs
- Drug-drug interactions
- Undesirable and side effects – Toxicity – Drug development

Special Chapters:

- Signaling and function of Autonomic NS receptors
- Adrenergic agonists
- Adrenergic antagonists
- Cholinergic agonists
- Cholinergic antagonists
- Opioid analgesics and opioid antagonists
- Introduction to CNS drugs
- Treatment of Alzheimer's disease
- Treatment of Parkinson's
- Drugs for the treatment of multiple sclerosis
- Drugs for the treatment of epilepsy and seizures
- Drugs for the treatment of anxiety and sleep disorder
- Drugs for the treatment of depression
- Neuroleptic-Antipsychotic drugs
- Drugs used as adjunct agents in surgery
- Gaseous and intravenous general therapeutics
- Topical anesthetics
- CNS excitatory molecules – Substances of abuse

Emphasis is given to:

Characteristics of each drug class, targeting of pathophysiological conditions, mechanism(s) of action at the cell/molecular level, major therapeutic indications, particular pharmacokinetic characteristics, frequent and/or dangerous side effects, major contraindications and high-risk drug-drug interactions

Laboratory training (via video and computer software-based simulations):

1. Comprehension/Consolidation of notions related to receptor theory (Agonists, Antagonists, drug dose-response curves, calculation of EC50, Potency and Effectiveness)
2. Clinical picture and pharmacological treatment of Parkinson's and Alzheimer's diseases – Video demonstration of the action of opioid agonists and antagonists
3. Pharmacological approaches in the treatment of seizures, myasthenia and hyperthyroid toxicity

4. TEACHING AND LEARNING METHODS - ASSESSMENT

Teaching method	Face-to-face												
Use of information and communication technologies	Use of E-class platform to communicate with students and manage their tasks Use of PCs in teaching												
Teaching organization	<table border="1"> <thead> <tr> <th><i>Teaching Method</i></th> <th><i>Semester Workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>52</td> </tr> <tr> <td>Laboratory work</td> <td>6</td> </tr> <tr> <td>Unsupervised study</td> <td>92</td> </tr> <tr> <td colspan="2">Total number of hours for the Course (25 hours of work-load per ECTS credit)</td> </tr> <tr> <td></td> <td>150</td> </tr> </tbody> </table>	<i>Teaching Method</i>	<i>Semester Workload</i>	Lectures	52	Laboratory work	6	Unsupervised study	92	Total number of hours for the Course (25 hours of work-load per ECTS credit)			150
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STUDENT ASSESSMENT	<p>Evaluation done in greek</p> <p>In laboratory work: Pass/fail on report, to be able to take part in final written exam</p> <p>Written exam: Multiple choice questions, pairing Qs, and Qs requiring brief reasoning and justification, 100% of the final grade</p>												

5. RECOMMENDED LITERATURE

Suggested Books (greek translation):

1. (Pharmacology) Φαρμακολογία, K. Whalen, R. A. HARVEY, 2015, Εκδ. Παρισιάνου
2. (Pharmacology), RANG, DALE, RITTER, MOORE, 2014, Εκδ. Παρισιάνου
3. (Basic and clinical Pharmacology) Βασική και Κλινική Φαρμακολογία, Katzung B., 2009, Εκδ. ΠΧ Πασχαλίδης
4. Goodman & Gillman's Η Φαρμακολογική Βάση της Θεραπευτικής (the pharmacological basis of therapeutics), 2015, Εκδ. ΠΧ Πασχαλίδης

Suggested Scientific Journals

Annual Review of Pharmacology and Toxicology
Nature Reviews Drug Discovery
British Journal of Pharmacology
Journal of Pharmacology and Experimental Therapeutics

Suggested sites

<http://www.guidetopharmacology.org/>
<https://www.fda.gov/Drugs/InformationOnDrugs/ucm075234.htm>
<https://www.galinos.gr/>
<http://www.eof.gr/web/guest/publications>