



UNIVERSITY OF NICOSIA

ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

Course Code PHAR-241	Course Title Pharmaceutical Chemistry II/Φαρμακευτική Χημεία II	Credits (ECTS) 5
Department Life & Health Sciences	Semester Spring	Prerequisites PHAR150,151
Type of Course Required	Field Pharmacy	Language of Instruction Greek/English
Level of Course 1 st Cycle	Year of Study 2 nd year	Lecturer Christos Petrou/ Maria Leigh
Mode of Delivery face-to-face	Work Placement N/A	Co-requisites None

Objectives of the Course:

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The aim of this course is to teach the students the pharmacology of the vast group of drugs acting on the endocrine, cardiovascular GI and immune system, antibiotic drugs, and antifungal drugs from many points of view: Nomenclature, syntheses, properties, purity control, molecular mode of action, therapeutic uses, fate in the organism, structure-activity relationships.

Learning Outcomes:

After completion of the course students are expected to:

- Know the biological properties that give the therapeutic potential to this group of drugs;
- understand the pharmacology (synthesis and the structure-activity relationships) of drugs acting on the endocrine, cardiovascular GI and immune system as well as the antibiotic drugs, and antifungal drugs
- Know their physical and chemical properties
- Know the biological properties that give the therapeutic potential to this group of drugs;
- Know the structural changes (i.e. metabolism) and fate of this group of molecules in the organism, the duration of action, the possibility of biotransformation or biotoxication;
- Reach conclusions on the relationships between action and structural and physicochemical characteristics;

Course Contents:

Classification and examination of chemical, biological and therapeutic perspectives

of hormones (exocrine, andocrine) and in general of drugs of the endocrine system. Synthetic analogues-compounds that inhibit or mimic hormonal action. Design, synthesis, structure-activity relationships. Mechanism of action and metabolism. Synthetic analogs of hormones.

Synthetic strategy, specifying structure analysis, molecular mechanism of action, structure-activity relationships, selectivity, activity and fate in the body for the following groups of drugs: antibacterials, antifungals, antivirals, diuretics, agonists histamine (H1 and H2), histamine antagonists (H1 and H2), drugs in the treatment of rheumatoid arthritis (DMADs), anti- gout drugs, Angiotensin Converting enzyme inhibitors, Angiotensin antagonists, calcium channel blockers, b agonists and antagonists. Male and female hormones, thyroid hormones

Introduction to Peptide Hormone synthesis *Indicative Laboratory work:*

Exercise 1: Synthesis of paracetamol;

Exercise 2: Synthesis of aspirin

Exercise 3: Identification drugs with Thin Layer Chromatography;

Exercise 4: Identification of unknown drug by infrared spectroscopy.

Exercise 5: Sulfanilamide Synthesis

Learning Activities and Teaching Methods:

Lectures, class discussion, assignments, laboratory

Assessment Methods:

Final Examination, Course work

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
T. Lemke	Foyes Principles in Medicinal Chemistry	Wolters Klowver	T. Lemke	
Graham Patrick	An Introduction to Medicinal Chemistry	Oxford University Press	Graham Patrick	

G.R. Chatwal; M. Arora	Pharmaceutical Chemistry, 2 Organic Medicinal Chemistry	Himalaya Publishers		EBOOK
Nadendla, Rama Rao	Principles of Organic Medicinal Chemistry	New Age International		EBOOK