



Course Syllabus

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| Course Code | Course Title | ECTS Credits |
| PHAR-310E | Ανακάλυψη και Ανάπτυξη Φαρμάκων /Drug Discovery and Development | 4 |
| Prerequisites | Department | Semester |
| None | Life and Health Sciences | Fall/Spring |
| Type of Course | Field | Language of Instruction |
| Compulsory | Pharmacy | Greek/English |
| Level of Course | Lecturer(s) | Year of Study |
| 1 st Cycle | Dr Plioukas Michael | 3 |
| Mode of Delivery | Work Placement | Corequisites |
| Face-to-Face | N/A | N/A |

Course Objectives:

The course objectives are to introduce the various phases involved in drug discovery and development and to give an insight and understanding of the dynamics and interdisciplinary nature of the development process.

The aims of this module are to enable students to:

- Recognize the modern approaches for the identification of lead compounds and therapeutic targets.
- Describe the methods used in identifying natural products of potential pharmaceutical use
- Report the preclinical and clinical observations in relation to the identification of novel biological targets and potential therapeutic use
- Define the computational techniques in drug design
- Describe the development of a pharmaceutical compound

Learning Outcomes:

On successful completion of this course students should be able to demonstrate an understanding / knowledge of the following:

- the principal steps in drug discovery
- the complete development plan (pharmaceutical, non-clinical and clinical) according to the proposed therapeutic indication
- the pertinent issues involved in the undertaking of clinical research

- the management of drug safety issues pre-and post-marketing authorization
- development and review of product-related information to ensure adherence to ethical and legal provisions
- the principles of health economics and their application in the development and marketing of medicines
- the management of all lifecycle activities (regulatory and marketing) of a medicine

Course Content:

The process of drug discovery and development, from validation of a drug target, identification of a lead structure leading to development of a drug, encompasses various disciplines and elements. To promote the ability to understand and communicate across the different fields of the process the following topics will be covered during the course:

- Target identification, evaluation and identification of lead structures
- Medicinal Chemistry: Lead optimization and synthesis
- Pre-formulation
- Pharmaceutical Formulation, Production and Quality systems
- Clinical Trials

Learning Activities and Teaching Methods:

Lectures, class discussion

Assessment Methods:

Final exam, Midterm exam

Required Textbooks / Readings:

| Title | Author(s) | Publisher | Year | ISBN |
|--|--|-----------------------|-------------|-------------------|
| Drug Delivery: Principles and Applications | Binghe Wang, Longqin Hu, Teruna J. Siahaan | Wiley | 2016 | 978-1-118-83336-0 |
| Basic Principles of Drug Discovery and Development | Benjamin Blass | Elsevier | 2015 | 9780124115088 |
| Drug Discovery and Development | Humphrey P. Rang, Raymond Hill | Churchill Livingstone | 2012 | 9780702042997 |
| The Process of New Drug Discovery and Development | Charles G. Smith, James T. O'Donnell | CRC Press | 2008 | 978-0849327797 |