



Course Syllabus

Course Code	Course Title	ECTS Credits
IMPH-260	Drug Discovery and Development/ Ανακάλυψη και Ανάπτυξη Φαρμάκων	3
Prerequisites	Department	Semester
None	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 Styliana Miralai	2 nd
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
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Drug Delivery: Principles and Applications	Binghe Wang, Longqin Hu, Teruna J. Siahaan	Wiley	2016	978-1-118-83336-0
The Process of New Drug Discovery and Development	Charles G. Smith, James T. O'Donnell	CRC Press	2008	978-0849327797

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Basic Principles of Drug Discovery and Development	Benjamin Blass	Elsevier	2015	9780124115088
Drugs: From Discovery to Approval	Rick Ng	Wiley-Blackwell	2015	9781118907276
Global New Drug Development	Jan A. Rosier, Mark A. Martens, Josse R. Thomas	John Wiley & Sons, Ltd	2014	9781118414880
Drug Discovery and Development	Humphrey P. Rang, Raymond Hill	Churchill Livingstone	2012	9780702042997