



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY OF PATRAS
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DEPARTMENT OF PHARMACY
POSTGRADUATE PROGRAM: **DRUG DESIGN AND DEVELOPMENT**

COURSE TITLE: DESIGN AND DEVELOPMENT OF PHARMACEUTICAL PRODUCTS
CODE: DPHA_2

**DESIGN AND DEVELOPMENT OF PHARMACEUTICAL PRODUCTS
COURSE OUTLINE**

1. ΓΕΝΙΚΑ

SCHOOL	HEALTH SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF PHARMACY		
PARTICIPATING INSTITUTIONS	-		
TITLE of POSTGRADUATE PROGRAM	DRUG DESIGN AND DEVELOPMENT		
LEVEL	POSTGRADUATE		
COURSE CODE	DPHA-2	SEMESTER	A'
COURSE TITLE	DESIGN AND DEVELOPMENT OF PHARMACEUTICAL PRODUCTS		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
Courses	5	8	
COURSE TYPE	Basic Scientific Field		
PREREQUISITE COURSES	None		
LANGUAGE of INSTRUCTION and EXAMINATIONS	Greek		
COURSE OFFERED to ERASMUS STUDENTS	Yes		
COURSE (URL)	http://www.pharmacy.upatras.gr/images/DS/DPHA_2_EN.pdf		

2. LEARNING OUTCOMES

Learning Outcomes
<p>STUDENTS WILL:</p> <p>HAVE THE THEORITICAL KNOWLEDGE TO DESIGN AND DEVELOP A POTENTIAL SAFE, STABLE AND BIOAVAILABLE DOSAGE FORM FOR a SPECIFIC DRUG (SELECT ROUTE OF ADMINISTRATION, DOSAGE FORM TYPE, EXCIPIENTS, MANUFACTURE METHOD)</p> <p>UNDERSTAND THE IMPORTANCE OF PREFORMULATION STUDIES AND METHODS OF PHARMACEUTICAL PROCESSING, SUCH AS PARTICLE SIZE REDUCTION (SOLIDS), PARTICLE SIZE SEPARATION (SOLIDS), PARTICLE SIZE ANALYSIS, MIXING, DRYING, FILTRATION, STERILIZATION IN PHARMACEUTICAL INDUSTRY</p>

General Competences

- Self-study
- Work in interdisciplinary environment
- Search, analyze and combine data towards making useful conclusions
- Understand basic concepts of formulation development

3. SYLLABUS**LECTURES**

1. Pharmaceutical Technology: Basic Considerations and Special topics in the Design and Development of Pharmaceutical Products
2. Industrial Manufacturing - Special Topics
3. Case Study- Instructed Essay

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face-to-Face, Essays, Exercises Self-study										
USE of INFORMATION and COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • E-class platform 										
TEACHING METHODS	<table> <thead> <tr> <th><i>Activity</i></th> <th><i>Semester Workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>65</td> </tr> <tr> <td>Directed Exercises</td> <td>13</td> </tr> <tr> <td>Independent Study</td> <td>122</td> </tr> <tr> <td>Course Total (25 hours of work-load per ECTS credit)</td> <td>200</td> </tr> </tbody> </table>	<i>Activity</i>	<i>Semester Workload</i>	Lectures	65	Directed Exercises	13	Independent Study	122	Course Total (25 hours of work-load per ECTS credit)	200
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Directed Exercises	13										
Independent Study	122										
Course Total (25 hours of work-load per ECTS credit)	200										
STUDENT PERFORMANCE EVALUATION	<p>Language of Evaluation: Greek</p> <p>Written exams; MCQ; Essays and exercises</p> <p>Final Grade: performance in written exam on the theoretical courses (70%), performance in case study essay: 30%.</p>										

5. RECOMMENDED BIBLIOGRAPHY**Suggested Bibliography:**

- 1] Aulton, M. E., (Ed.). *Pharmaceutics: The Science of Dosage Form Design*. Churchill Livingstone, U.K., 1988.
- 2] Lachman, L et al., (Eds.). *The Theory and Practice of Industrial Pharmacy*. Lea and Febiger, Philadelphia, 1986.
- 3] Remington: *The Science and Practice of Pharmacy*, 19th edition, 1995, Mack Publishing Company, Easton Pennsylvania.
- 4] Lembeck, F. *Συνταγολογία (μετάφραση Ι. Σ. Παπαδόπουλου και Θ. Λουκά)*, 5η έκδοση, 1975, Εκδόσεις Παρισιάνος, Αθήνα.

- 5] Stoklosa, M. J. and Ansel, H. C. Pharmaceutical Calculations, 7th edition, 1980, Lea and Febiger, Philadelphia.
- 6] Aulton's Pharmaceutics. The Design and Manufacturing of Medicines. Edited by M.E. Aulton, Churchill Livingstone Elsevier, Third Edition, reprinted 2010
- 7] Biopharmaceutics and Clinical Pharmacokinetics. Fourth Edition. By Milo Gibaldi. Lea and Febiger: Malvern, PA, 1991.

Related specialized journals:

Journal of Pharmaceutical Sciences
International Journal of Pharmaceutics
Pharmaceutical research
European journal of Pharmaceutics and Biopharmaceutics
Journal of Pharmaceutical Sciences