



UNIVERSITY OF  
**PATRAS**  
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY OF PATRAS  
SCHOOL OF HEALTH SCIENCES  
DEPARTMENT OF PHARMACY  
UNDERGRADUATE STUDIES' COURSES



COURSE DESCRIPTION: **PHYSICAL PHARMACY**  
COURSE CODE: **PHA-B24-NEW**

**PHYSICAL PHARMACY  
COURSE DESCRIPTION**

**1. GENERAL**

<b>SCHOOL</b>	HEALTH SCIENCES		
<b>SEPARTMENT</b>	PHARMACY		
<b>LEVEL OF COURSE</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	PHA-B24-NEW	<b>SEMESTER OF STUDIES</b>	4th
<b>COURSE TITLE</b>	PHYSICAL PHARMACY		
<b>INDEPENDENT TEACHING ACTIVITIES</b>		<b>TEACHING HOURS PER WEEK</b>	<b>ECTS CREDITS</b>
Lectures		4	8
Laboratory practice		3	
<b>COURSE TYPE</b>	Scientific Field course		
<b>PREREQUISITE COURSES:</b>	-		
<b>TEACHING AND ASSESSMENT LANGUAGE:</b>	Greek		
<b>THE COURSE IS OFFERED TO ERASMUS STUDENTS</b>	Yes [Instructed/Guided self study in english for Erasmus+ Students]		
<b>COURSE WEBPAGE (URL)</b>	<a href="http://www.pharmacy.upatras.gr/images/DS/PHA-B24-EN.pdf">http://www.pharmacy.upatras.gr/images/DS/PHA-B24-EN.pdf</a>		

**2. LEARNING OUTCOMES**

<b>Learning outcomes</b>
<p>Understanding of relationships of drugs physicochemical properties with their a) solubility in aqueous media and b) distribution in biological membranes.</p> <p>Application of techniques for improvement of drugs solubilization in aqueous media.</p> <p>Basic principles of surface and interfacial phenomena and their application in pharmaceutical and biological systems.</p> <p>Understanding of basic physicochemical properties of colloidal systems and coarse dispersions (suspensions, emulsions, microemulsions, hydrogels) and their applications as drugs carriers.</p> <p>Basic principles of Rheology and rheological properties of pharmaceutical formulations.</p>
<b>General Abilities</b>
<ul style="list-style-type: none"> <li>• Self-study</li> <li>• Group work</li> <li>• Analyze and synthesize data and information, using the necessary technologies</li> <li>• Work in interdisciplinary environment</li> </ul>

### 3. COURSE CONTENT

1. Solubility and distribution of drugs
2. Complexation and protein binding with drugs
3. Interfacial Phenomena
4. Colloidal Systems
5. Rheology
6. Coarse Dispersions

### 4. TEACHING AND LEARNING METHODS - ASSESSMENT

<b>TEACHING METHOD</b>	In class and laboratory on hands training	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</b>	Support of learning process through the online platform e-class. Software for data acquisition during laboratory experiments and software for processing of experimental data.	
<b>TEACHING ORGANIZATION</b>	<b>Teaching Method</b>	<b>Semester Workload</b>
	Theoretical courses	52
	Practical Lab exercises	18
	Group lab reports and presentations	84
	Independent study	46
	<b>Total number of hours for the Course (25 hours of work-load per ECTS credit)</b>	<b>200</b>
<b>STUDENT ASSESSMENT</b>	<ol style="list-style-type: none"> <li>1. Written final examination (70%) including <ul style="list-style-type: none"> <li>• Questions of brief development</li> <li>• Judgment questions</li> <li>• Problems solving</li> </ul> </li> <li>2. Laboratory exercises (30%) including <ul style="list-style-type: none"> <li>• Examination on laboratory practices</li> <li>• Presentation of group work for each laboratory exercise (processing of experimental data – evaluation of final results)</li> <li>• Written exam</li> </ul> </li> </ol>	

### 5. RECOMMENDED LITERATURE

**Suggested Books:**

1. George Ktistis, Lessons of Physical Pharmacy, Publisher ZITI, 4th edition, 2007
2. Alexander T. Florence & David Attwood, Physicochemical Principles of Pharmacy, Pharmaceutical Press, 6th edition, 2015
3. Patrick J. Sinko, Martin's Physical Pharmacy and Pharmaceutical Sciences, Lippincott Williams & Wilkins, 6th edition, 2011