



UNIVERSITY OF
PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

DEPARTMENT OF PHARMACY

SCHOOL OF HEALTH SCIENCES

UNIVERSITY OF PATRAS
SCHOOL OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
POSTGRADUATE PROGRAM: **NANOMEDICINES FOR DRUG DELIVERY- NANOMED (EMJMD)**

COURSE TITLE: PRACTICAL APPLICATIONS OF FORMULATIONS
CODE:HG4_NM3

NANOMEDICINES FOR DRUG DELIVERY- NANOMED (EMJMD)
COURSE OUTLINE

1. GENERAL

SCHOOL	HEALTH SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF PHARMACY		
PARTICIPATING INSTITUTIONS	-		
TITLE of POSTGRADUATE PROGRAM	NANOMEDICINES FOR DRUG DELIVERY- NANOMED (EMJMD)		
LEVEL	POSTGRADUATE		
COURSE CODE	HG4_NM3	SEMESTER	A'
COURSE TITLE	PRACTICAL APPLICATIONS OF FORMULATIONS		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS	CREDITS	
Practical Courses	6	9	
COURSE TYPE	Specialised knowledge (Pharmaceutical Technology, Manufacturing Drug Formulations, Methodologies, Practical Knowledge for experiment planning), Skills Development-		
PREREQUISITE COURSES	None		
LANGUAGE of INSTRUCTION and EXAMINATIONS	ENGLISH		
COURSE OFFERED to ERASMUS STUDENTS	THIS IS ALREADY AN EMJMD PROGRAM COURSE		
COURSSE (URL)	https://www.pharmacy.upatras.gr/images/DS/NanoMed/HG4_NM03.pdf		

2. LEARNING OUTCOMES

Learning Outcomes
<p>Upon successful course completion, students will acquire knowledge, skills and abilities related to level 7 of the European Qualifications Framework for Lifelong Learning.</p> <p>In particular, students will:</p> <ol style="list-style-type: none"> 1. understand the strategy for experiment design. 2. have been introduced to the techniques and methodologies for preparation and physicochemical characterization of dosage forms 3. have understood the basic approaches to prepare dosage forms. 4. have understood the basic approaches to evaluate the physicochemical properties of dosage forms 5. have understood the basic approaches to evaluate the quality of dosage forms, according to regulatory rules.

6. have familiarized themselves with the techniques of preparation, physicochemical property and quality control evaluation of dosage forms

General Competences

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Working independently
- Team Work
- Decision-making
- Working in an international environment
- Working in an interdisciplinary environment
- Production of free, creative and inductive thinking
- Adapting to new situations

3. SYLLABUS

LECTURES

Practical courses on the production, analysis and evaluation of Dosage Forms. For each practical course a lecture proceeds to remind the theory behind the practical application.

1. Introduction of Practical's and work load
2. Strategy of formulation of Oral Dosage forms (evaluation methods)
3. Strategy of formulation of suspensions (formulation tests and controls).
4. Strategy of formulation of emulsions (formulation tests and controls).
5. Strategy of formulation of solid Dosage forms (formulation tests and controls)
 - a. Tablets
 - b. Capsules
 - c. Suppositories
4. Strategy of formulation of injectable forms
5. Formulations tests, controls, dosage of API (ascorbic acid) by HPLC
6. Statistical analysis of the results to choose the optimal formulation.

Evaluation report
Oral presentation on practical results

PUBLIC PRESENTATIONS

Oral Presentation of Results of Practical's and Explanation/Critical Assessment of Results

5. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face to face														
USE of INFORMATION and COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • Use of ICT - e-class platform • Communication with students 														
TEACHING METHODS	<table> <thead> <tr> <th><i>Activity</i></th> <th><i>Semester Workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures / Practical courses</td> <td>85</td> </tr> <tr> <td>Result analysis</td> <td>20</td> </tr> <tr> <td>Preparation of Report</td> <td>25</td> </tr> <tr> <td>Oral Presentation (and preparation)</td> <td>10</td> </tr> <tr> <td>non-directed Self-Study</td> <td>85</td> </tr> <tr> <td>Course Total (25 hours of work-load per ECTS credit)</td> <td>225</td> </tr> </tbody> </table>	<i>Activity</i>	<i>Semester Workload</i>	Lectures / Practical courses	85	Result analysis	20	Preparation of Report	25	Oral Presentation (and preparation)	10	non-directed Self-Study	85	Course Total (25 hours of work-load per ECTS credit)	225
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STUDENT PERFORMANCE EVALUATION	<p>Language of Evaluation: English</p> <p>Report of Practical's Results –Explanation of Results</p> <ul style="list-style-type: none"> • (30% of final grade) <p>Public Presentation</p> <ul style="list-style-type: none"> • Oral Presentation and evaluation (70% of final grade) 														

6. RECOMMENDED BIBLIOGRAPHY

Suggested Bibliography:

1. Attwood, D., Florence, A. T. (2012). Physical Pharmacy. Germany: Pharmaceutical Press.
2. Jain, G., Krishen Khar, R., Ahmad, F. J. (2011). Theory and Practice of Physical Pharmacy - E-Book. India: Elsevier Health Sciences.
3. Aulton's Pharmaceutics: The Design and Manufacture of Medicines. (2013). United Kingdom: Churchill Livingstone/Elsevier.
4. Perrie, Y., Rades, T. (2012). Pharmaceutics: Drug Delivery and Targeting. United Kingdom: Pharmaceutical Press.
5. Jones, D. S. (2016). Pharmaceutics: Dosage Form and Design. United Kingdom: Pharmaceutical Press.

Related Academic Journals:

- Colloids and Surfaces A and B
- International J. Pharmaceutics
- Journal of Pharmaceutical Sciences
- European Journal of Pharmaceutical Sciences
- Eur. J. Pharmaceutics and Biopharmaceutics
- Pharmaceutics
- Pharmaceuticals