

## SYLLABUS

### 1. Information regarding the programme

1.1 Higher education institution	Babes-Bolyai University Cluj-Napoca
1.2 Faculty	Chemistry and Chemical Engineering
1.3 Department	Chemical Engineering
1.4 Field of study	Chemical Engineering
1.5 Study cycle	Master
1.6 Study programme / Qualification	Advanced Chemical Process Engineering

### 2. Information regarding the discipline

2.1 Name of the discipline		Ingineria produselor farmaceutice - CMX7342					
2.2 Course coordinator		Conf. dr. ing. Vasile Miclaus					
2.3 Seminar coordinator		Conf. dr. ing. Vasile Miclaus					
2.4. Year of study	II	2.5 Semester	4	2.6. Type of evaluation	C	2.7 Type of discipline	Compulsory

### 3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1
3.4 Total hours in the curriculum	42	Of which: 3.5 course	28	3.6 seminar/laboratory	14
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					33
Additional documentation (in libraries, on electronic platforms, field documentation)					30
Preparation for seminars/labs, homework, papers, portfolios and essays					38
Tutorship					4
Evaluations					3
Other activities: .....					-
3.7 Total individual study hours	108				
3.8 Total hours per semester	150				
3.9 Number of ECTS credits	6				

### 4. Prerequisites (if necessary)

4.1. curriculum	• Not necessary
4.2. competencies	• Not necessary

### 5. Conditions (if necessary)

5.1. for the course	• Not necessary
5.2. for the seminar /lab activities	• Not necessary

## 6. Specific competencies acquired

<b>Professional competencies</b>	<ul style="list-style-type: none"> <li>• Use of creative expertise, methods and concepts for analysis and synthesis of new chemical processes.</li> <li>• Use of integrated chemical analysis and synthesis for process development and production of innovative products.</li> <li>• Application of performance evaluation of new modern facilities to improve the decision making processes for the synthesis.</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>• Realization of tasks according to the demands in required terms, with the respect of the ethical professional norms</li> <li>• Solving the tasks according to the general objectives established in the work group</li> <li>• Permanent information and documentation in the field.</li> </ul>

## 7. Objectives of the discipline (outcome of the acquired competencies)

<b>7.1 General objective of the discipline</b>	Pharmaceutical agents based on organic molecules which have been synthesised and modified to provide medicinal products on a large scale
<b>7.2 Specific objective of the discipline</b>	Review of pharmaceutical industry and available drugs, retro-synthetic analyse of active compounds, industrial organic synthesis for pharmaceutical agents. Provide success in research and development laboratories, make contribution to basic understanding of industrial organic synthesis

## 8. Content

<b>8.1 Course</b>	<b>Teaching methods</b>	<b>Remarks</b>
1. The features of pharmaceutical industry	Interactive lecture	
2. Pharmaceutical agents and therapeutically area	Interactive lecture	
3. Chemiotherapies	Interactive lecture	
4. Antiinfectives I	Interactive lecture	
5. Antiinfectives II	Interactive lecture	
6. Neuropharmaceuticals I	Interactive lecture	
7. Neuropharmaceuticals II	Interactive lecture	
8. Cardiovascular drugs	Interactive lecture	
9. Antiinflammatory-Antireumatic drugs	Interactive lecture	
10. Gastrointestinal drugs	Interactive lecture	
11. Endocrine and metabolic drugs	Interactive lecture	
12. Related technologies	Interactive lecture	
13. Pharmaceutical dosage forms	Interactive lecture	
14. Drug testing	Interactive lecture	
<b>Bibliography</b>		
1. C.Oniscu: Chimia si tehnologia medicamentelor. Ed. Tehnica , Bucuresti 1988		
2. C. Daescu: Chimia si tehnologia medicamentelor. Ed. Did. Ped., Bucuresti 1994		
3. E. Cioranescu, Medicamente de sinteza.		
4. D. Lednicer, L.A. Mitscher, Organic chemistry of drug synthesis, Wiley New 1980.		
5. Pharmaceuticals J. L. McGuire, Wiley- VCH Weinheim, 2000		
<b>8.2 Seminar / laboratory</b>	<b>Teaching methods</b>	<b>Remarks</b>
1. The features of pharmaceutical industry	Problems Discussions	
2. Pharmaceutical agents and therapeutically area	Problems Discussions	

3. Endocrine and metabolic drugs	Problems Discussions	
4. Neuropharmaceuticals	Problems Discussions	
5. Antiinflammatory-Antireumatic drugs	Problems Discussions	
6. Related technologies	Problems Discussions	
7. Pharmaceutical dosage forms	Problems Discussions	
<b>Bibliography</b> <ol style="list-style-type: none"> <li>1. C. Oniscu: Chimia si tehnologia medicamentelor. Ed. Tehnica, Bucuresti 1988</li> <li>2. C. Daescu: Chimia si tehnologia medicamentelor. Ed. Did. Ped., Bucuresti 1994</li> <li>3. E. Cioranescu, Medicamente de sinteza.</li> <li>4. D. Lednicer, L.A. Mitscher, Organic chemistry of drug synthesis, Wiley New 1980.</li> <li>5. Pharmaceuticals J. L. McGuire, Wiley- VCH Weinheim, 2000</li> </ol>		

**9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program**

- To the establishing of formative content of the course and laboratory work have been participated teaching personal from chemistry and chemical engineering departments from our faculty and from other universities.

**10. Evaluation**

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	The ability to establish and to choose the models proper to the studied properties of materials, applying the correct research methods.	colloquium	80
10.5 Seminar/lab activities	Capacity to analyze the models in real applications.		
	The activity during the work and the quality of reports.		20
10.6 Minimum performance standards			
➤ 6 (six) in lab and examination according to the standard.			

Date

20.05.2013

Signature of course coordinator

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Signature of seminar coordinator

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Date of approval

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Signature of the head of department

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