COURSE SYLLABUS

1. Program information

1.1. Institution	Petroleum – Gas University of Ploiești
1.2. Faculty	Petroleum Technology and Petrochemistry
1.3. Department	Petroleum Processing Engineering and Environmental Protection
1.4. Field of study	Chemical Engineering
1.5. Study cycle	Master
1.6. Study program	Chemical Engineering for Refineries and Petrochemistry

2. Course information

2.1. Course title	Professional practice 2		
2.2. Course coordinator			
2.3. Laboratory / seminar coordinator	Prof. Dragoș Ciuparu		
2.4. Project coordinator			
2.5. Year of study	1		
2.6. Semester *	2		
2.7. Evaluation type	V		
2.8. Course type - formative category **	DSI	2.9. Type of subject matter ***	C

* the semester number is in accordance with the curriculum;

** fundamental = DF; domain = DD; speciality = DS; complementary = DC; thoroughgoing = DA; synthesis = DSI.

*** compulsory = C; optional = O; elective = E

3. Total estimated time (teaching hours per semester)

3.1. Number of hours per week	3	of which: 3.2. course		3.3. Seminars/laboratories	3	3.4. Project	
3.5. Total hours from curriculum	42	of which: 3.5. course		3.6. Seminars/laboratories	42	3.7. Project	

3.8. Time distribution	hours
Study of textbook, course support, bibliography and notes	4
Further reading in the library, on online platforms and fieldwork	18
Preparing seminars / laboratories, homework, portfolios and essays	7
Tutoring	
Examinations	1
Other activities	

3.7. Total hours of individual study	30
3.8. Total hours per semester	72
3.9. Number of credits	4

4. Prerequisites (where applicable)

4.1. of curriculum	➢ Transfer phenomena and specific equipment or equivalent
4.2. of skills	➢ General chemical engineering design skills; ➢ General IT skills;

5. Requirements (where applicable)

5.1. of course	➢
5.2. of seminars/laboratory	➢ Room with computers connected to the internet; ➢ Microsoft Excel ➢ Computer licenses for chemical process modelling and simulation software: ProII, Aspen Engineering or similar, Mathcad, Mathematica, Matllab, etc.

6. Specific competences

Professional competences	➢ Description, analysis and advanced utilization of engineering concepts and fundamental theories in petroleum refining; ➢ Modeling, simulation and design of chemical processes.
Cross-curricular competences	➢ Documentation, information and scientific literature research; ➢ Advanced knowledge of computer, internet and specific chemical engineering software;

7. Course objectives (based on the competence grid)

7.1. General objective	➢ Students are able to apply in practice general engineering knowledge and tools.
7.2. Specific objectives	➢ Learn how to get informed from reliable sources with respect to an industrial process; ➢ Learn how to use engineering computational methods applied to a real industrial case; ➢ Learn how to use computer and software tools for engineering computations applied to a chemical process; ➢ Learn how to analyse the economics of chemical processes.

8. Contents

8.1. Course	Time	Teaching methods	Comments
Bibliography			
8.2. Seminar / laboratory	Time	Teaching methods	Comments
1. Modelling and simulation of transfer phenomena	12	Coordinated individual study	
2. Modelling and simulation of chemical reactions and reactors	8	Coordinated individual study	
3. Industrial process and plant design;	10	Coordinated individual study	

4. Economic analysis, estimation of capital expenditure and operation expenditure;	12	Coordinated individual study	
Bibliography Kirch-Othmer Encyclopedia of Chemical Technology, Web of Knowledge, Scopus, Compendex Engineering Library, Science Direct, Springer			
8.3. Project	Time	Teaching methods	Comments
Bibliography			

9. Correlation of the course contents with the demands of the epistemic community representatives, professional associations and representative employers in the field of the program

- The course syllabus was developed in cooperation with representatives of engineering companies in Ploiești and Bucharest that have hired graduates of similar master programs.

10. Evaluation

Activity	10.1. Evaluation criteria	10.2. Evaluation methods	10.3. Percentage of final grade
10.4. Course			
10.5. Seminar / laboratory	Capacity to apply in practice the general chemical engineering knowledge	Practical	50%
	Capacity to use software tools in practice	Practical	25%
	Capacity to get informed and select reliable information	Practical	25%
10.6. Project			
10.7. Minimum performance standard			
➢ Students are capable to elaborate an original report regarding an industrial case study, using IT tools for chemical engineering computations and assessing the process economics .			