

# SYLLABUS

## 1. Information about the program

1.1 Higher education institution	Politehnica University Timisoara
1.2 Faculty <sup>1</sup> / Department <sup>2</sup>	Chemical Engineering, Biotechnologies and Environmental Protection / CAICAM
1.3 Field of study (name/code <sup>3</sup> )	Chemical Engineering / 10.30.50
1.4 Study cycle	License
1.5 Study program (name/code/qualification)	Chemical Engineering / 10.30.50.60 / engineer

## 2. Information about the discipline

2.1 Name of discipline/ formative category <sup>4</sup>	Engineering of inorganic products (Technological Project 1) / DS						
2.2 Coordinator (holder) of course activities	.						
2.3 Coordinator (holder) of applied activities <sup>5</sup>	Ș.I. dr.ing. Cosmin VANCEA						
2.4 Year of study <sup>6</sup>	III	2.5 Semester	6	2.6 Type of evaluation	P-E	2.7 Regime of discipline <sup>7</sup>	DI

## 3. Total estimated time – hours / semester: direct teaching activities (fully assisted or partly assisted) and individual training activities (unassisted)<sup>8</sup>

3.1 Number of fully assisted hours / week	1.5 of which:	3.2 course	0	3.3 seminar / laboratory / project	0/0/1.5
3.1* Total number of fully assisted hours / semester	21 of which:	3.2* course	0	3.3* seminar / laboratory / project	0/0/21
3.4 Number of hours partially assisted / week	of which:	3.5 training		3.6 hours for diploma project elaboration	
3.4* Total number of hours partially assisted / semester	of which:	3.5* training		3.6* hours for diploma project elaboration	
3.7 Number of hours of unassisted activities / week	2.07 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field hours of individual study after manual, course support, bibliography and notes training seminars / laboratories, homework and papers, portfolios and essays			
3.7* Number of hours of unassisted activities / semester	29 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field hours of individual study after manual, course support, bibliography and notes training seminars / laboratories, homework and papers, portfolios and essays			
3.8 Total hours / week <sup>9</sup>	3.57				
3.8* Total hours /semester	50				
3.9 Number of credits	2				

## 4. Prerequisites (where applicable)

4.1 Curriculum	•
4.2 Competencies	•

<sup>1</sup> The name of the faculty which manages the educational curriculum to which the discipline belongs

<sup>2</sup> The name of the department entrusted with the discipline, and to which the course coordinator/holder belongs.

<sup>3</sup> The code provided in HG - on the approval of the Nomenclature of fields and specializations / study programs, annually updated.

<sup>4</sup> Discipline falls under the educational curriculum in one of the following formative disciplines: Basic Discipline (DF), Domain Discipline (DD), Specialist Discipline (DS) or Complementary Discipline (DC).

<sup>5</sup> Application activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).

<sup>6</sup> Year of studies in which the discipline is provided in the curriculum.

<sup>7</sup> Discipline may have one of the following regimes: imposed discipline (DI) or compulsory discipline (DOb)-for the other fundamental fields of studies offered by UPT, optional discipline (DO) or optional discipline (Df).

<sup>8</sup> The number of hours in the headings 3.1 \*, 3.2 \*, ..., 3.8 \* is obtained by multiplying by 14 (weeks) the number of hours in headings 3.1, 3.2, ..., 3.8. The information in sections 3.1, 3.4 and 3.7 is the verification keys used by ARACIS as:  $(3.1) + (3.4) \geq 28$  hours / wk. and  $(3.8) \leq 40$  hours / wk.

<sup>9</sup> The total number of hours / week is obtained by summing up the number of hours in points 3.1, 3.4 and 3.7.

## 5. Conditions (where applicable)

5.1 of the course	•
5.2 to conduct practical activities	<ul style="list-style-type: none"> <li>• Students will attend lectures; the project is interactive, allowing students to ask questions related to the presentation content. Students will cover the indicated bibliography. The room is equipped with a projector, a whiteboard, and suitable computing technology.</li> </ul>

## 6. Specific competencies acquired through this discipline

Specific competencies	<ul style="list-style-type: none"> <li>• • Understanding and executing a material balance for a given technology</li> <li>• • Understanding and executing a thermal balance for a given technology</li> <li>• • Sizing the equipment related to the respective technology</li> <li>• • Selecting equipment from specific catalogs</li> </ul>
Professional competencies ascribed to the specific competencies	<ul style="list-style-type: none"> <li>• - Analyse production processes for improvement;</li> <li>• - Manage chemical testing procedures;</li> <li>• - Test materials;</li> <li>• - Write technical reports</li> <li>• -Performs chemical experiments</li> <li>• -Approve engineering design</li> <li>• -Assess environmental impact</li> </ul>

Transversal competencies ascribed to the specific competencies

- - Conduct quality control;
- - Apply scientific, technological and engineering knowledge;
- - Uses equipment, instruments or technological equipment accurately.

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## 7. Objectives of the discipline (based on the grid of specific competencies acquired - pct.6)

7.1 The general objective of the discipline	<ul style="list-style-type: none"> <li>• Acquiring fundamental concepts regarding the design and optimization of specific equipment used in the chemical industry</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li>• • Knowledge of the fundamental notions in the field of technological processes specific to chemical engineering</li> <li>• • Use of basic knowledge specific to chemical engineering for the design of equipment specific to chemical processes</li> <li>• • Solving some equipment dimensioning problems</li> <li>• • Fundamentals of optimizing the operation of machinery in the chemical industry</li> </ul>

## 8. Content <sup>10</sup>

8.1 Course	Number of hours	Teaching methods <sup>11</sup>

<sup>10</sup> It details all the didactic activities foreseen in the curriculum (lectures and seminar themes, the list of laboratory works, the content of the stages of project preparation, the theme of each practice stage). The titles of the laboratory work carried out on the stands shall be accompanied by the notation "(\*)".

<sup>11</sup> Presentation of the teaching methods will include the use of new technologies (e-mail, personalized web page, electronic resources etc.).



	sizing and optimization techniques for equipment		
<b>10.6</b> Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified <sup>17</sup> )			
<ul style="list-style-type: none"> <li>Elaboration of the project of a technological flow and aligning it with specific equipment for the chemical industry</li> </ul>			

**Date of completion**

**Course coordinator  
(signature)**

**Coordinator of applied activities  
(signature)**

S.I.habil. dr.ing. Cosmin VANCEA

**Head of Department  
(signature)**

**Date of approval in the Faculty Council <sup>18</sup>**

**Dean  
(signature)**

Conf.dr.ing. Andrea  
KELLENBERGER

S.L.dr.ing. Mircea DAN

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<sup>17</sup> It will not explain how the promotion mark is awarded.

<sup>18</sup> The endorsement is preceded by the discussion of the board's view of the study program on the discipline record.