



1. General information

Course: PROFESSIONAL TRAINING

Type: PRACTICUM-RELATED COURSE

Degree: 2336 - MASTER DEGREE PROGRAM IN CHEMICAL ENGINEERING

Center: 1 - FACULTY OF SCIENCE AND CHEMICAL TECHNOLOGY

Year: 2

Main language: Spanish

Use of additional
languages:

Web site:

Code: 310747

ECTS credits: 6

Academic year: 2021-22

Group(s): 20

Duration: First semester

Second language: English

English Friendly: Y

Bilingual: N

| Lecturer: CARMEN MARIA FERNANDEZ MARCHANTE - Group(s): 20 | | | | |
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| Lecturer: JUAN FRANCISCO RODRIGUEZ ROMERO - Group(s): 20 | | | | |
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| Lecturer: PAULA SANCHEZ PAREDES - Group(s): 20 | | | | |
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2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

Not established

4. Degree competences achieved in this course

Course competences

| Code | Description |
|------|--|
| CB07 | To be able to apply acquired knowledge and problem-solving skills in new or unknown environments within broader (or multidisciplinary) contexts related to their area of study |
| CB08 | To be able to integrate knowledge and deal with the complexity of making judgements on the basis of incomplete or limited information, including reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements |
| CB09 | To be able to communicate their findings, and the ultimate knowledge and reasons behind them, to specialist and non-specialist audiences in a clear and unambiguous manner |
| CB10 | To possess the learning skills to continue studying in a largely self-directed or autonomous manner. |
| E01 | To apply knowledge of mathematics, physics, chemistry, biology and other natural sciences, obtained through study, experience, and practice, with critical reasoning to establish economically viable solutions to technical problems. |
| E02 | To design products, processes, systems and services of the chemical industry, as well as the optimization of others already developed, taking as technological base the diverse areas of the chemical engineering, comprehensive of processes and transport phenomena, separation processes and engineering of the chemical, nuclear, electrochemical and biochemical reactions. |
| E03 | To conceptualize engineering models, apply innovative methods in problem solving and appropriate software applications, for the design, simulation, optimization and control of processes and systems. |
| | To have the ability to solve problems that are unknown, incompletely defined, and have competing specifications, considering the |

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| E04 | possible solution methods, including the most innovative ones, selecting the most appropriate one, and being able to correct the implementation, evaluating the different design solutions. |
| E05 | To direct and supervise all types of installations, processes, systems and services of the different industrial areas related to chemical engineering. |
| E06 | Design, build and implement methods, processes and facilities for the integrated management of supplies and waste, solid, liquid and gaseous, in industries, with the capacity to evaluate their impacts and risks. |
| G01 | To have adequate knowledge to apply the scientific method and the principles of engineering and economics, to formulate and solve complex problems in processes, equipment, facilities and services, in which matter undergoes changes in its composition, state or energy content, characteristic of the chemical industry and other related sectors including the pharmaceutical, biotechnological, materials, energy, food or environmental sectors. |
| G02 | To conceive, project, calculate and design processes, equipment, industrial facilities and services, in the field of chemical engineering and related industrial sectors, in terms of quality, safety, economy, rational and efficient use of natural resources and environmental conservation. |
| G03 | To direct and manage technically and economically projects, installations, plants, companies and technology centres in the field of chemical engineering and related industrial sectors. |
| G06 | To have the capacity of analysis and synthesis for the continuous progress of products, processes, systems and services using criteria of safety, economic viability, quality and environmental management. |
| G07 | To integrate knowledge and deal with the complexity of making judgments and decisions, based on incomplete or limited information, including reflections on the social and ethical responsibilities of professional practice |
| G08 | To lead and define multidisciplinary teams capable of solving technical changes and management needs in national and international contexts |
| G09 | To communicate and discuss proposals and conclusions in multilingual forums, specialized and non-specialized, in a clear and unambiguous way |
| G10 | To adapt to changes, being able to apply new and advanced technologies and other relevant developments, with initiative and entrepreneurial spirit |
| G11 | To possess the skills of autonomous learning in order to maintain and improve the competences of chemical engineering that allow the continuous development of the profession |
| MC1 | To have acquired advanced knowledge and demonstrated an understanding of the theoretical and practical aspects and of the working methodology in the field of Chemical Engineering with a depth that reaches the forefront of knowledge |
| MC2 | To be able, through arguments or procedures developed and supported by themselves, to apply their knowledge, understanding and problem-solving skills in complex or professional and specialized work environments that require the use of creative or innovative ideas |
| MC3 | To have the ability to collect and interpret data and information on which to base their conclusions including, where necessary and relevant, reflection on social, scientific or ethical issues in the field of chemical engineering |
| MC4 | To be able to deal with complex situations or those that require the development of new solutions in the academic, work or professional field of study of Chemical Engineering |
| MC5 | To know how to communicate to all types of audiences (specialized or not) in a clear and precise way, knowledge, methodologies, ideas, problems and solutions in the field of the study of Chemical Engineering |
| MC6 | To be able to identify their own training needs in the field of study of Chemical Engineering and work or professional environment and to organize their own learning with a high degree of autonomy in all kinds of contexts (structured or unstructured). |

5. Objectives or Learning Outcomes

Course learning outcomes

Description

To acquire the capacity for the ethical exercise of the profession, and to become socially aware of its reports and the impact of its decisions

To know some of the main professional activities in the chemical industry sector.

To know the real applications of chemical engineering in process engineering, energy and environment.

To have the ability to work as a team, responsibility in performance and responsible management and leadership strategies

To have the skills for practical work, being able to develop it in coordination with other professionals

To acquire training in the way the professional works in organisations (companies, institutions, laboratories, etc.) where the profession can potentially be exercised.

6. Units / Contents

No units added

7. Activities, Units/Modules and Methodology

| Training Activity | Methodology | Related Competences (only degrees before RD 822/2021) | ECTS | Hours | As | Com | Description |
|--|---------------------------|---|----------|------------|----|-----|-------------|
| Class Attendance (practical) [ON-SITE] | Other Methodologies | CB07 CB08 CB09 CB10 E01 E02 E03 E04 E05 E06 G01 G02 G03 G06 G07 G08 G09 G10 G11 MC1 MC2 MC3 MC4 MC5 MC6 | 4.8 | 120 | Y | Y | |
| Individual tutoring sessions [ON-SITE] | Guided or supervised work | CB07 CB08 CB09 CB10 E01 E02 E03 E04 E05 E06 G01 G02 G03 G06 G07 G08 G09 G10 G11 MC1 MC2 MC3 MC4 MC5 MC6 | 1.12 | 28 | Y | Y | |
| Final test [ON-SITE] | Assessment tests | CB07 CB08 CB09 CB10 E01 E02 E03 E04 E05 E06 G01 G02 G03 G06 G07 G08 G09 G10 G11 MC1 MC2 MC3 MC4 MC5 MC6 | 0.08 | 2 | Y | Y | |
| Total: | | | 6 | 150 | | | |

