

**COURSE DATA****Data Subject**

|                      |                      |
|----------------------|----------------------|
| <b>Code</b>          | 46561                |
| <b>Name</b>          | External internships |
| <b>Cycle</b>         | Master's degree      |
| <b>ECTS Credits</b>  | 12.0                 |
| <b>Academic year</b> | 2024 - 2025          |

**Study (s)**

| <b>Degree</b>                                  | <b>Center</b>         | <b>Acad. year</b> | <b>Period</b> |
|--|-----------------------|-------------------|---------------|
| 2261 - Master's Degree in Chemical Engineering | School of Engineering | 2                 | Annual        |

**Subject-matter**

| <b>Degree</b>                                  | <b>Subject-matter</b>     | <b>Character</b>  |
|--|---------------------------|-------------------|
| 2261 - Master's Degree in Chemical Engineering | 10 - External internships | External Practice |

**Coordination**

| <b>Name</b>             | <b>Department</b>          |
|-------------------------|----------------------------|
| MARTINEZ SORIA, VICENTE | 245 - Chemical Engineering |

**SUMMARY**

The University of Valencia considered the external practices as an important and necessary methodology in learning and preparing students, while linking with society. The external practice aims to strengthen the training of university students in the operational areas of Institutions or Companies for professionals with a real insight into the problems and their interrelation, preparing future incorporation into productive work or research. The University may establish agreements with institutions or companies, practical cooperation programs in which arrange their participation in specialized training and practical training required for students

Monitoring and development of the practices will be held according to the regulation of the University of Valencia, taking his foundation ADEIT as a manager tool that organizes, coordinates and arranges them.



Related to the professional activity of chemical engineering companies, government agencies or research activities will take place.

Given the large variety of possible activities, the contents vary according to the organization and the work done on it. This matter will deepen at least some powers of the management module and production optimization and sustainability (CE7-CE11).

The commitment under this subject is: work in the organism where the practice is carried out 230 hours; meetings with university tutor 10 hours; conducting a sufficiently detailed report 60 hours.

## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

## COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

### 2261 - Master's Degree in Chemical Engineering

- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Be able 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 changes its composition, state or energy content, these changes being characteristic of the chemical industry and of other related sectors such as pharmacology, biotechnology, materials science, energy, food or the environment.
- Be able to analyse and synthesise for the continued progress of products, processes, systems and services while applying criteria of safety, affordability, quality and environmental management.



- Integrate knowledge and handle the complexity of formulating judgments and decisions, based on incomplete or limited information, which take account of the social and ethical responsibilities of professional practice.
- Communicate and discuss proposals and conclusions in specialised and non-specialised multilingual forums, in a clear and unambiguous manner.
- Adapt to changes and be able to apply new and advanced technologies and other relevant developments with initiative and entrepreneurship.
- Have skills for independent learning in order to maintain and enhance the specific competences of chemical engineering which enable continuous professional development.
- Be able to access information tools in different areas of knowledge and use them properly.
- Be able to assess the need to complete their technical, scientific, language, computer, literary, ethical, social and human education, and to organise their own learning with a high degree of autonomy.
- Be able to defend criteria with rigor and arguments and to present them properly and accurately.
- Be able to take responsibility for their own professional development and specialisation in one or more fields of study.
- Lead and organise companies and production and service systems by applying knowledge and skills of industrial organisation, business strategy, planning and logistics, mercantile and labour regulations, and financial and cost accounting.
- Lead and manage the organisation of work and human resources by applying criteria of industrial safety, quality management, risk prevention, sustainability and environmental management.
- Manage research, development and technological innovation taking into account the transfer of technology and the property and patent rights.
- Manage and perform verification and control of facilities, processes and products, as well as certifications, audits, inspections, tests and reports.
- Adapt to structural changes in society caused by economic, energy or natural factors or phenomena in order to solve resulting problems and provide technological solutions with a high commitment to sustainability.

**LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

Applying the knowledge and skills acquired in a professional environment.

Being able to integrate into a working environment and teamwork.

To be able to communicate scientific-technological aspects through written reports and / or argued discussions in specialized forums



## DESCRIPTION OF CONTENTS

### 1. Externships

The contents of the course will be different depending on the specific practice that is to be carried out.

The following activities are generic and it can be performed during external practices:

Design, simulation, planning, scheduling and optimization of industrial processes

Production and control of chemical processes

Exploitation and industrialization of natural resources

Technologies prevention and correction of pollution

Environmental Laboratory

WWTP: Wastewater Treatment Plants

Aspects of legal, economic and financial Engineering

Quality control, hygiene and safety

Transformation, arbitration, expertise, pricing, application and manufacturing of chemical products.

## WORKLOAD

| ACTIVITY   | Hours         | % To be attended |
|--|---------------|------------------|
| Internship                                       |               | 100              |
| Internship                                       | 230,00        | 100              |
| Seguimiento y tutorización de Prácticas externas | 10,00         | 100              |
| Development of individual work                   | 60,00         | 0                |
| <b>TOTAL</b>                                     | <b>300,00</b> |                  |

## TEACHING METHODOLOGY

Work carried out in companies or research centers and developed on facilities, processes, systems and / or industrial services related to the professional activity of chemical engineer. These tasks are carried out under the supervision of a tutor in the company, and subsequently be an academic tutor (tutorials).

The student will perform a stay on the premises of the company or center, and he/she will integrate into the designated workplace.

One memory work developed, where the results will be presented, will be developed. This activity does not have to be carried out in the workplace.

## EVALUATION



The evaluation will be based on:

1) Report of the student tutor of the company or institution where internships are developed. This report will be based on the most relevant aspects related to the degree of compliance with practice, training aspects and skills acquired by the student. (40%).

2) Evaluation of practical activities from the preparation of papers / reports and interview / oral presentation (60%):

- The final report of the activities in the company, which objectively determine the difficulty of the tasks and the relation to matters of degree. Contain at least the following:

- Relationship of practical training with studies
  - Providing the student at the center of practice
  - New knowledge and skills acquired
  - Relationship with center personnel practices and working methods
- Interview with student tutor practices in academy.

The recognition of this subject by crediting a work or professional experience of at least 6 months (or 960 hours) in the development of activities related to the profession of Chemical Engineer can be requested. In this case, recognized credits have no qualification, and they will not compute for average qualification of the student of this Master.