

60655 - Master's Dissertation

Syllabus Information

Academic year: 2024/25

Subject: 60655 - Master's Dissertation

Faculty / School: 100 - Facultad de Ciencias

Degree: 540 - Master's in Industrial Chemistry

ECTS: 9.0

Year: 1

Semester: Annual

Subject type: Master Final Project

Module:

1. General information

The main objective of the master's final Project (MFP) is the integration of the competencies acquired by the student throughout the master's program. To do so, the student will have to adequately manage time, search for and handle bibliographic information related to the topic of work. They will also have to perform measurements, operations or experimental protocols as well as handle equipment and instrumentation necessary for data acquisition.

These approaches and targets are aligned with the following Sustainable Development Goals: SDG 6: Clean Water and Sanitation; SDG 7: Affordable and Clean Energy; SDG 8: Decent Work and Economic Growth; SDG 9: Industry, Innovation and Infrastructure; SDG 12: Responsible Production and Consumption.

2. Learning results

The master's final project allows the integration of the competencies and skills acquired throughout the course.

Presenting the report of the work conducted helps the student to develop skills related to analysing and summarising information and drawing conclusions.

The subject lays the foundations for the student to later develop a research project, a doctoral thesis or join the R+D+i team in companies or institutions...

In addition, the skills acquired by the students are also valued outside the academic, public or private research environment. Such skills will help them to successfully develop their professional careers in consulting, business or commercial management, production, teaching, etc.

3. Syllabus

As a guideline, some of the possible lines of work to be developed are listed below:

-Proposals for new industrial processes as alternatives to existing ones

- due to their lower environmental impact.
- due to their lower energy requirements.
- due to their lower generation of waste that is difficult to treat and dispose of.
- due to their lower need for raw materials.

-Methods to minimize the environmental impact of industrial and energy production processes.

-Proposal of new industrial processes using renewable raw materials.

-Processing and revalue of industrial wastes.

-Representation of real industrial processes at laboratory scale (scale-down).

-New materials with specific applications.

-Design of new catalysts.

- Surface coatings for industrial applications.

- Determination of chemical-physical properties of interest to the industry.

- Assessment of the implementation of ISO certification standards.

- Validation of analytical methods used in the chemical industry

- Continuous and discontinuous analysers for process control in the chemical industry

- Chemical sensors for process control in the chemical industry

- Any other topic related to the development of chemistry in the industrial field.

4. Academic activities

The learning process designed for this subject is based on the development of the following activities:

Performance of the work. Work will be carried out in the facilities of the Faculty of Sciences or externally. It will be supervised by a director or directors.

Report. It must conform to the format and size approved by the Quality Assurance Committee of the Master's Degree in Industrial Chemistry.

Presentation and defence. Works shall be in accordance with the [Regulations of the Final Degree and Master's Degree Projects at the University of Zaragoza](#), the [Regulations for the preparation and management of the Final Degree and Master's Degree Projects at the Faculty of Sciences](#) and the [Specific Regulations for the Final Degree and Master's Degree Projects of the Master's Degree in Industrial Chemistry at the University of Zaragoza](#).

https://ciencias.unizar.es/sites/ciencias.unizar.es/files/users/fmlou/pdf/Asuntos_academicos/normativa_especifica.pdf

The MFP is a fundamental subject of the degree since it allows the integration and application of the knowledge acquired in the other subjects.

5. Assessment system

The final grade for the subject will be the result of:

Report of the activities carried out and results obtained. The board of examiners will assess both the formal aspects concerning the writing of the report (structure, correct wording, clarity, good definition of objectives, etc.) and the content of the report. In this sense, it will be taken into account whether the student has reached the adequate training through their knowledge of the subject matter. The mastery they have achieved in the techniques and methodologies used and the maturity of the discussion of the results obtained will also be assessed.

Exposition of the report supported by graphic and audiovisual means. The board of examiners will value the clarity, fluency and ability to summarise in the presentation.

Answer to the board's questions. The Tribunal will assess the clarity and correctness of the answers.

The MFP will be in accordance with the Regulations of the Final Degree and Master's Project at the University of Zaragoza and the Regulations for the writing and management of the Final Degree and Master's Project at the Faculty of Sciences.

The boards will be governed by the recommendations/criteria approved by the QAC of the degree.

6. Sustainable Development Goals

7 - Affordable and Clean Energy

9 - Industry, Innovation and Infrastructure

12 - Responsible Production and Consumption