

Academic Year/course: 2021/22

60464 - Interdisciplinary seminars

Syllabus Information

Academic Year: 2021/22

Subject: 60464 - Seminarios interdisciplinares

Faculty / School: 100 - Facultad de Ciencias

Degree: 543 - Master's in Molecular Chemistry and Homogeneous Catalysis

ECTS: 2.0

Year: 1

Semester: Annual

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

Successful cases in different scientific and technologic topics will be presented to illustrate first-hand how planning, organization and elaboration of research is addressed, and how scientific conclusions are drawn and argued.

The course aims at developing students' criterion to identify frontier research and optimize their scientific and industrial practices.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDG) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that acquisition of the subject's learning results provides training and competence to contribute to a certain extent to their achievement. Goal 4: Quality education, Goal 7: Affordable and clean energy, Goal 9: Industry, innovation and infrastructure.

1.2. Context and importance of this course in the degree

The course is part of the optional module *Horizons in Molecular Chemistry and Catalysis*. It is an annual course with a workload of 2 ECTS.

The course contextualizes the knowledge and skills acquired in other subjects, placing them in actual cases that illustrate their implementation and relativize their usefulness.

1.3. Recommendations to take this course

Mastery of basic concepts in chemistry (bond, structure, thermodynamics and kinetics) is required.

Before each seminar, it is recommended to acquaint oneself with the topic from the complementary information and bibliography that will be distributed via the Master's website (<http://masterqmqmch.unizar.es>) and the University's web tool (<https://moodle2.unizar.es/add>).

2. Learning goals

2.1. Competences

Assimilating and evaluating scientific results.

Identifying the frontiers of research in molecular chemistry and catalysis.

Preparing reports, presentations and scientific articles in a clear and effective way.

Managing the scientific vocabulary and specific terminology of chemistry and catalysis.

2.2. Learning goals

To place scientific research and applications in a context: background, objectives, hypothesis, etc.

Identify strengths and weaknesses in scientific works.

Recognize scientific and technological advances in molecular chemistry and catalysis.

Give views and ask questions about R&D results.

2.3. Importance of learning goals

The course demonstrates the usefulness and scope of the body of knowledge and skills acquired along the Master's. The course illustrates different perspectives of research and industrial practice, also showing that perspective is often multidisciplinary. The student becomes aware of the existence of an international scientific community to which he/she belongs.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The continuous assessment of the course is based on the following activities, with the indicated weighting:

1. Attendance and participation in seminars (50%).
2. Preparation of a short (1 page) report for each of the seminars; providing a context for the research topics, a description of the objectives, hypothesis and methodological aspects, and assessing the main scientific and/or technological results (50%).

For those students who have not passed such an evaluation or wish to improve their marks, a global examination will be conducted in the June or September call. This examination will consist of a written exam on theoretical issues akin to the topics of the seminars. The number of official examination calls per registration and their use will be subjected to the statements of the *Regulation of Permanence in Master Studies* and *Regulation of the Learning Assessment* (<https://ciencias.unizar.es/normativas-asuntos-academicos>). The latest document will also regulate the general design and scoring criteria of the assessment activities, as well as the exam schedules and timetable for the post-examination review.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The course's coordinator will be responsible for selecting and programming the seminars. After confirming the date and place of each seminar, the process will be as follows:

- Via e-mail, the Master's website (<http://masterqmch.unizar.es>) and the University's virtual platform (<https://moodle2.unizar.es/add>), the coordinator will make available to the students all details of the seminar: Lecturer, title, summary and recommended bibliography, as well as any other pertinent information.
- Seminar (face-to-face).
- Preparation of the seminar report.
- Tutorials.

4.2. Learning tasks

Seminars.

Based on the seminars reports, the coordinator will provide either face-to-face or online tutoring, individually or in small groups, to explain and/or correct weaknesses.

Teaching and assessment activities will be carried out in the classroom with all students onsite unless, due to the health situation, the provisions issued by the competent authorities and the University of Zaragoza arrange to carry them out by telematics means or in a reduced rotating capacity. If the mobility situation during the academic year does not allow a sufficient offer of seminars, the coordinator will provide a selection of prerecorded conferences accessible online to correct this circumstance.

4.3. Syllabus

The course will be completed after attending at least 8 seminars and preparing the corresponding short reports. The topics and other details of the seminars are not available yet, but will be communicated sufficiently in advance via e-mail, the Master's website (<http://masterqmch.unizar.es>) and the University's virtual platform (<https://moodle2.unizar.es/add>).

4.4. Course planning and calendar

The seminars will be scheduled on an approximately monthly basis. Seminars dates will be communicated to students in advance. The course will benefit, at least in part, from the conference series organized by the Faculty of Sciences and the ISQCH. In order to avoid overlapping with other lectures, and whenever logistical constraints of the lecturers permit it, the seminars will take place in the time slot set by the Faculty of Sciences for such activities.

The short reports should preferably be submitted within the week following the seminars.

If necessary, the dates for the final exams will be posted on the website of the Faculty of Science: <https://ciencias.unizar.es/calendario-y-horarios>.