MSc IN MOLECULAR CHEMISTRY AND HOMOGENOUS CATALYSIS

Duration: one year, full-time; 60 ECTS credits

Language: Spanish

Program aims:

This master's program aims to train researchers in suitable skills for their integration in both the academic realm and R&D&i departments of chemical companies by equipping them with current knowledge in chemical synthesis and catalysis, and to provide extensive use of the most advanced techniques and software for structural characterization, monitoring of processes, theoretical molecular modelling, and information-retrieval tools from chemistry databases and bibliographic resources.

This master's degree provides advanced training in molecular design applied to the synthesis of new compounds with specific properties and to the development of new catalysts for chemical transformations in an efficient, clean, and selective way. This master's degree aims to:

- Provide an advanced, rigorous, and highly specialized foundation in chemical synthesis, catalysis, reactivity, and properties of new molecular substances.
- Provide advanced training in the main experimental and structural characterization techniques in molecular chemistry.
- Introduce students to scientific research and provide them with suitable competencies and knowledge required for their integration into research groups or RRDRi departments of chemical companies focusing on technological innovation.

Structure:

Students must enroll in the following modules:

Module	ECTS	Semester
60450 - Synthetic Strategies in Advanced Organic Chemistry[ELF]	6	S1
60451 - Molecular Design in Inorganic and Organometallic Chemistry[ELF]	6	S1
60452 - Catalysis[ELF]	6	S1
60453 - Structural Characterization Techniques[ELF]	6	S1
60465 – Master's Dissertation*[ELF]	24	YL

Students also must select 12 ECTS credits from the following list:

Module	ECTS	Semester
60454 - Fundamental Methodologies in Synthesis[ELF]	2	S1
60455 - Bibliographic Resources and Databases[ELF]	2	S1

60456 - Crystallography and Diffraction Techniques[ELF]	2	S2
60457 - Molecular Modelling[ELF]	2	S2
60458 - Advanced Structural Characterization Techniques[ELF]	4	S2
60459 - Asymmetric Catalysis[ELF]	2	S2
60460 - Supramolecular Chemistry[ELF]	2	S2
60461 - Chemistry of Advanced Materials[ELF]	2	S2
60462 - Chemistry at the Frontiers of Biology[ELF]	2	S2
60463 - Sustainable Chemistry and Catalysis[ELF]	2	S2
60464 - Interdisciplinary Seminars[ELF]	2	YL

*Master's Dissertation

Master's Dissertation (MD) is a 600- hour compulsory project on a topic in the degree's subject matter.