

BSc IN CHEMISTRY

Duration: four years, full-time; 60 ECTS credits per year

Language: Spanish

Program aims:

The bachelor's degree in chemistry at the University of Zaragoza aims to provide the future chemist with solid interdisciplinary scientific training, including the ability to solve problems and promote pragmatism, as well as the flexibility to meet the demands that the profession requires. To do so, the student must have the materials and human resources that have led to the University of Zaragoza's teaching and research staff in chemistry being recognized nationally and internationally as first-rate. Students in this degree program learn the composition, structure, properties, and reactivity of matter, together with the theoretical fundamentals that equip them to be able to apply this knowledge to the scientific, technological, and cultural development of society.

Structure:

Year 1. In the first year, students must enroll in the following modules:

Module	ECTS	Semester
27200 - General Chemistry	15	YL
27201 - Introduction to the Chemistry	9	YL
27202 - Mathematics	12	YL
27203 - Physics	12	YL
27204 - Biology	6	S1
27205 - Geology	6	S2

S1: Semester 1. Mid-September to mid-January S2: Semester 2. Beginning-February to end-May YL: Year-long. Mid-September to end-May

^{ELF}: English-language-friendly module (see first page)

Year 2. In the second year, students must enroll in the following modules:

Module	ECTS	Semester
27206 - Analytical Chemistry	9	YL
27207 - Physical Chemistry I	10	YL
27208 - Inorganic Chemistry	9	YL
27209 - Organic Chemistry I ^{ELF}	9	YL
27210 - Chemistry Laboratory	12	YL
27211 - Statistics and IT ^{ELF}	6	S1

In this second year, students also must select one module from:

Module	ECTS	Semester
27224 - History of Science^{ELF}	6	S2
27225 - Introduction to Management	6	S2

Year 3. In the third year, students must enroll in the following modules:

Module	ECTS	Semester
27212 - Analytical Chemistry II^{ELF}	12	YL
27213 - Physical Chemistry II^{ELF}	11	YL
27214 - Inorganic Chemistry II^{ELF}	12	YL
27215 - Organic Chemistry II	12	YL
27216 - Fundamentals of Chemical	6	S1
27217 - Biochemistry^{ELF}	7	S2

Year 4. In the fourth year, students must enroll in the following modules:

Module	ECTS	Semester
27218 - Materials Science^{ELF}	7	YL
27219 - Structure Determination^{ELF}	6	S1
27220 - Laboratory Methods and Quality Control^{ELF}	6	S1
27221 - Spectroscopy and Molecular Properties^{ELF}	6	S1
27222 - Chemical Industry: Processes, Hygiene, and	6	S2
27223 – Undergraduate Dissertation ^{*ELF}	9	YL

In this fourth year, students also must select four modules from the list of optional modules:

Module	ECTS	Semester
27226 - Environmental and Toxics Analysis^{ELF}	5	S2
27227 - Non-Destructive Analysis of Solid Materials	5	**
27228 - Fast-Response Analytical Methods^{ELF}	5	S2
27229 - Environmental Physical Chemistry and Photochemistry	5	**
27230 - Introduction to Molecular Modeling^{ELF}	5	S2
27231 - Nuclear Chemistry: Physicochemical Properties of Drugs and Radiopharmacy	5	S2
27232 - Homogeneous Catalysis^{ELF}	5	S2
27233 - Environmental Inorganic Chemistry	5	**
27234 - Organometallic Chemistry^{ELF}	5	S2

27235 - Organic Chemistry Insights ^{ELF}	5	S2
27236 - Characterization and Instrumental Techniques for Organic Chemistry	5	**
27237 - Industrial Organic Chemistry ^{ELF}	5	S2
27238 - Industrial Biochemistry and Microbiology	5	**
27239 - Environmental Technology ^{ELF}	5	S2
27240 - Biological Activity of Chemical Compounds ^{ELF}	5	S2
27241 – Internship	5	S2

Not all optional modules are available every year. A list of the available modules for the following year (starting in September) is published in June. The modules with ** in the Semester column are not being offered in 2021/2022.

***Undergraduate Dissertation**

Undergraduate Dissertation (UD) is a 225-hour project undertaken during the fourth year. The student is supervised by a professor who defines the project's objectives and guides him/her along the way. Students must write a report and deliver a public presentation on it.