



The bachelor's degree program in chemical engineering teaches students to use chemistry, physics, biology and mathematics to solve problems related to the production and manufacture of goods and materials. In addition to a strong foundation in the sciences, students gain problem-solving and analytical skills through practical sessions of laboratory, simulation and design and the ability to collaborate with faculty on research projects. Graduates of our program have the necessary skills to work in industry or in the public administration or to pursue graduate training.

Distribution of credits

Basic courses	Compulsory courses	Optional courses	Bachelor Thesis	Total ECTS Credits
60.00	127.50	40.50	12	240.00

First year*

Code	Course Name	Term	ECTS Credits
12268	Technical drawing	A	6
12264	Physics	A	6
12262	Mathematics I	A	9
12265	Chemistry	A	6
12263	Extension of physics	B	4.5
12269	Industrial Business and Economy	B	6
12260	Statistics	B	6
12267	Computer Science	B	6
12261	Mathematics II	B	6
12266	Physical chemistry	B	4.5
Total			60

Second year*

Code	Course Name	Term	ECTS Credits
12282	Fundamentals of Chemical Engineering	A	4.5
12275	Materials Science	A	4.5
12294	Laboratory in chemical analysis	A	6
12295	Computational Methods in Chemical Engineering	A	4.5
12293	Organic Chemistry	A	6
12276	Thermodynamics	A	4.5
12286	Chemical Kinetics and Catalysis	B	4.5
12290	Laboratory in chemical engineering I	B	4.5
12274	Fundamentals of Machines and Strength of Materials	B	6
12278	Fluid Mechanics	B	6
12277	Chemical Thermodynamics and Heat Transfer	B	4.5
12284	Mass transfer	B	4.5
Total			60

Third year* (Compulsory)

Code	Course Name	Term	ECTS Credits
12273	Advanced materials science	A	6
12291	Experimentation in chemical engineering II	A	4.5
12285	Separation operations	A	4.5
12287	Chemical reactors	A	4.5
	Optional Courses	A	13.5
12289	Process analysis and simulation	B	4.5
12271	Control and instrumentation of chemical processes I	B	4.5
12292	Experimentation in chemical engineering III	B	4.5
12281	Business organization and production systems	B	4.5
12283	Bioprocess technology	B	4.5
12279	Environmental Technology	B	4.5
		Total	60

Third year (Optional)

Code	Course Name	Term	ECTS Credits
12297	Industrial heat and refrigeration	A	4.5
12298	Fluid machines	A	4.5
	Language	A	4.5

Fourth year* (Compulsory)

Code	Course Name	Term	ECTS Credits
12272	Control and instrumentation of chemical processes II	A	4.5
12288	Industrial processes in chemical engineering	A	4.5
12280	Projects of chemical engineering	A	6
12270	Electric and electronic systems	A	6
	Optional Courses (to choose from the list below)	A/B	27
12330	Bachelor Thesis	B	12

Fourth year (Optional)

Code	Course Name	Term	ECTS Credits
12321	Design of equipment and industrial installations	A	4.5
12323	Design of chemical plants assisted by computer	A	4.5
12309	Energy sources	A	4.5
12313	Environment management	A	4.5
12315	Engineering of the electrochemical processes	A	4.5
12317	Engineering of polymers and biopolymers	A	4.5
12299	Integrated laboratory of Informatics	B	4.5
12304	Integrated laboratory of chemistry engineering	B	4.5
12305	Integrated laboratory of operations in food industry	B	4.5
12307	Integrated laboratory of polymers and biomaterials	B	4.5
12301	Integrated laboratory of engineering projects	B	4.5
12300	Integrated laboratory of chemistry	B	4.5
12326	Industrial buildings and architecture	B	4.5
12316	Operations and process and unitary processes in the food industry	B	4.5
12310	Optimization of power consumption	B	4.5
12318	Manufacture processes of the building materials	B	4.5
12325	Industrial safety	B	4.5
12311	Nuclear Chemical technology	B	4.5

*Language of tuition will be Spanish