UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Bachelor's degree in Civil Engineering

Civil engineers are professionals who have good analytical and decision-making skills, which allow them to find efficient and sustainable solutions to complex technological and engineering problems. They are graduates who are professionally qualified to plan, manage, construct and conserve civil engineering projects. On this bachelor's degree you will acquire a solid grounding and broad mastery of technical knowledge and work management skills.

Civil engineers are already contributing to meeting the UN's Sustainable Development Objectives, and civil engineering is a versatile area of knowledge that is present in a great number of spheres of action, many of them emerging and strategic, such as sustainable mobility, water supply, renewable energies and the energy transition, smart cities, just-in-time logistics, the circular economy and climate change.

GENERAL DETAILS

Duration
4 years

Study load
240 ECTS credits (including the bachelor's thesis). One credit is equivalent to a study load of 25-30 hours.

Delivery
Face-to-face

Language of instruction
Group taught 100% in English

Check the language of instruction for each subject (and timetable) in the course guide in the curriculum.

Information on language use in the classroom and students' language rights.

Fees and grants
Approximate fees per academic year: €1,107 (€2,553 for non-EU residents). Consult the public fees system based on income (grants and payment options).

Location
Barcelona School of Civil Engineering (ETSECCPB)

Official degree
Recorded in the Ministry of Education's degree register

ADMISSION

Places
160

Registration and enrolment
What are the requirements to enrol in a bachelor's degree course?

Legalisation of foreign documents
All documents issued in non-EU countries must be legalised and bear the corresponding apostille.

PROFESSIONAL OPPORTUNITIES

Professional opportunities
Civil engineers join companies dealing with infrastructure, water flows, energy, goods and people as specialists, managers, designers, consultants and builders; ports, airports, stations and logistics centres; companies and institutions that manage natural resources and recycling and that intervene in the public use of cities; and

consultancies and quality laboratories.

- Sustainable and safe mobility
- Universal right to water supply
- Renewable energies and the energy transition
- Mitigation of causes and effects of climate change
- Resilience to natural disasters
- Circular economy
- Smart cities
- Just-in-time logistics

For all of the above, civil engineering is entrusted with planning, conceiving, designing, building, maintaining, integrating and managing:

- Transport infrastructure for intelligent mobility
- Roads and channels that move water, energy, goods and people
- Ports, airports, stations and logistics centres
- Natural resource and waste recycling management systems
- Public spaces in cities

These areas of work can be approached from different perspectives, from a public or private body, from the point of view of a manager, a designer, a consultant or a builder. Other areas are teaching, research and innovation.

ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

Academic calendar

General academic calendar for bachelor's, master's and doctoral degrees courses

Academic regulations

Academic regulations for bachelor's degree courses at the UPC

Language certification and credit recognition

Queries about language courses and certification

Barcelona School of Civil Engineering (ETSECCPB)

CURRICULUM

Subjects	ECTS credits	Type
FIRST COURSE		
Applied Geology	6	Compulsory
Applied Physics	6	Compulsory
Business and Construction Legislation	6	Compulsory
Calculus	6	Compulsory
Chemistry of Materials	6	Compulsory
Graphic Expression	6	Compulsory
Linear Algebra	6	Compulsory
Mathematical Fundamentals	6	Compulsory
Mechanics I	6	Compulsory
Urbanism and Regional Systems	6	Compulsory
SECOND COURSE		
Construction Materials	6	Compulsory
Environmental Technology	6	Compulsory

Subjects	ECTS credits	Type
Geomatics	6	Compulsory
Hydraulics	6	Compulsory
Mechanics II	6	Compulsory
Numerical Methods in Engineering	6	Compulsory
Probability and Statistics	6	Compulsory
Representation Techniques	6	Compulsory
Strength of Materials	6	Compulsory
Vector Calculus and Differential Equation	6	Compulsory
THIRD COURSE		
Construction Management	6	Compulsory
Construction Methods and Electrical Engineering	6	Compulsory
Engineering Projects	6	Compulsory
Geotechnics	6	Compulsory
Project Management	6	Compulsory
Reinforced Concrete	6	Compulsory
Steel Structures	6	Compulsory
Structures	6	Compulsory
Surface and Groundwater Hydrology I	6	Compulsory
Transportation Infrastructures	6	Compulsory
Transportation Systems	6	Compulsory
FOURTH COURSE		
Administration, Urban Planning and Public Services	7.5	Optional
Building Construction and Prefabrication	7.5	Optional
Communication Techniques	4.5	Optional
Construction Management	4.5	Optional
Construction Management	4.5	Optional
Construction of Bridges and Other Structures	6	Optional
Construction of Transportation Infrastructure	6	Optional
Design and Analysis Tools in Hydraulic Engineering	4.5	Optional
Elements of Urban Sustainability	4.5	Optional
Environmental Impact on Maritime Works	4.5	Optional
Geotechnical Engineering	4.5	Compulsory
Geothecnical Constructions	4.5	Optional
Graphic Design and Numerical Analysis	4.5	Optional
History of Civil Engineering	4.5	Optional
Hydraulic Constructions	6	Optional
Infrastructure Preservation	4.5	Optional
Instrumentation and Remote Sensing	4.5	Optional

Subjects	ECTS credits	Type
Introduction to Structure Management	4.5	Optional
Machine Learning and Data Science	4.5	Optional
Maritime Constructions	4.5	Compulsory
Port Engineering	4.5	Optional
Prestressed Concrete	4.5	Optional
Sanitary Engineering	4.5	Optional
Structural Design	6	Optional
Surface and Groundwater Hydrology II	4.5	Optional
Sustainability, Social and Environmental Impact	4.5	Optional
Transportation Management	6	Optional
Urban Logistics and Transport Terminals	4.5	Optional
Water Supply	4.5	Optional
Bachelor's Thesis	12	Project