

# Bachelor's degree in Civil Engineering Technologies (taught in English)

New social, environmental and economic models and scenarios pose significant challenges that make it necessary to adapt current structures and systems such as mobility management, transport and logistics systems, large infrastructure management, water supply, energy sources, waste reduction and environmental protection.

The world is changing and it needs professionals who are able to provide innovative and creative solutions from a global perspective using the knowledge of the twenty-first century. Civil engineering is an essential part of this development towards the societies of the future. It contributes to the improvement of people's quality of life, environmental protection and economic growth.

The bachelor's degree, which is taught at the Barcelona School of Civil Engineering, produces graduates who have a multifaceted, versatile approach and a solid grounding in basic sciences. The bachelor's degree in Civil Engineering Technologies will provide you with a solid grounding in both science and engineering tools and technologies that will fully prepare you for the master's degree in Civil Engineering.

In the final year of the bachelor's degree you will be able to choose the optional subjects that most interest you and acquire skills as current and sought-after by companies as those involved in big data, smart cities, modelling and entrepreneurship.

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## GENERAL DETAILS

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### 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

English

### Fees and grants

Approximate fees per academic year: €1,660 (€2,490 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\).](#)

### Location

[Barcelona School of Civil Engineering \(ETSECCPB\)](#)

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## ADMISSION

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### Places

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### 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.](#)

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## PROFESSIONAL OPPORTUNITIES

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### Professional opportunities

The bachelor's degree is the first part of the training to qualify as a civil engineer, after you have completed the

master's degree in Civil Engineering. As a graduate, you will be able to join project engineering companies, consultancy firms, construction companies, R&D departments and also the financial and service sectors.

- Planning, management and use of infrastructure in the public administration or private bodies (posts: head of area, head of service, specialist).
- Management and/or execution at construction companies (posts: manager, general manager, technical manager, director of studies, production specialist, quality control specialist).
- Management at contractors (posts: manager, general manager, financial specialist).
- Project engineering and consulting and site and project management for public works (posts: manager, general manager, head of department, specialist).
- Research on topics related to infrastructure (post: researcher).
- Freelance work or entrepreneurship.

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## ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS

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### 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)

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## CURRICULUM

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Subjects	ECTS credits	Type
<b>FIRST COURSE</b>		
Algebra and Geometry	6	Compulsory
Calculus	6	Compulsory
Construction Materials	6	Compulsory
Economy, Business and Legislation	6	Compulsory
Geology	6	Compulsory
Materials Chemistry	6	Compulsory
Mathematics	6	Compulsory
Metric Geometry and Representation Systems	6	Compulsory
Physics	6	Compulsory
Rational Mechanics	6	Compulsory
<b>SECOND COURSE</b>		
Communication Techniques	6	Compulsory
Differential Geometry and Vector Calculus	6	Compulsory
Environmental Engineering	6	Compulsory
Geomatics and Geoinformation	6	Compulsory
Hydraulics and Hydrology	6	Compulsory
Mathematical Models of Physics	6	Compulsory

<b>Subjects</b>	<b>ECTS credits</b>	<b>Type</b>
Mobility and Transport Networks	6	Compulsory
Probability and Statistics	6	Compulsory
Strength of Materials and Structures	6	Compulsory
Town Planning	6	Compulsory
<b>THIRD COURSE</b>		
Construction and Electrical Engineering Procedures	6	Compulsory
Geotechnical and Geological Engineering	6	Compulsory
Hydrology and Hydraulic Works	6	Compulsory
Maritime and Port Engineering	6	Compulsory
Numerical Modeling	6	Compulsory
Roads and Railways	6	Compulsory
Soil Mechanics	6	Compulsory
Structural Technology I	6	Compulsory
Structural Technology II	6	Compulsory
Structure Analysis	6	Compulsory
<b>FOURTH COURSE</b>		
Digital Twins and Augmented Reality	6	Optional
Entrepreneurship and Innovation	6	Optional
Instrumentation and Remote Sensing	6	Optional
Machine Learning and Data Science	6	Optional
Programming for Science and Engineering	6	Optional
Projects and Business Organization	6	Compulsory
Risk Assessment for Natural Hazards	6	Optional
Software Tools for Civil Engineering	6	Optional
Sustainability, Social and Environmental Impact	6	Optional
Urban Mobility and Decision Support	6	Optional
Bachelor's Thesis	12	Project