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UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

Bachelor's degree in Geoinformation and Geomatics Engineering

BARCELONA SCHOOL OF BUILDING CONSTRUCTION (EPSEB)

The extensive application of ICTs in the field of geoinformation (or georeferenced spatial data) has created the need for professionals in this area of knowledge. The **bachelor's degree in Geoinformation and Geomatics Engineering** intends to respond to this need. It will train you for a career in fields such as geographic information systems, the use of geoinformation for mobile applications and big data processing, global positioning and navigation systems, smart cities, fleet management, photogrammetry (including the use of drones and UAVs), remote sensing, geodesy and surveying.

GENERAL DETAILS

Duration

4 academic 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

Admission mark 2025-2026 academic year

6,979

Language of instruction

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

Information on [language use in the classroom and students' language rights](#).

Fees and grants

Approximate fees per academic year: €1,061 (€1,800 for non-EU residents). [Consult the public fees system based on income \(grants and payment options\)](#).

Location

[Barcelona School of Building Construction \(EPSEB\)](#)

Official degree

[Recorded in the Ministry of Education's degree register](#)

ADMISSION

Places

50

Pre-enrolment code

31087

Places via a change of degree

5

Admission mark 2025-2026 academic year

6,979. [Admission mark](#)

Weighting. University entrance examinations (PAU)

[Weighting. University entrance examinations \(PAU\)](#)

Registration and enrolment

[What are the requirements to enrol in a bachelor's degree course?](#)

CFGS credit transfer

[Consult the university studies search engine of the Universities Channel of the Generalitat de Catalunya](#)

Legalisation of foreign documents

All documents issued in non-EU countries must be [legalised and bear the corresponding apostille](#).

CURRICULUM

Subjects	ECTS credits	Type
FIRST SEMESTER		
Algebra	6	Compulsory
Calculus	6	Compulsory
Computer-Assisted Design	6	Compulsory
Geographic Information and Cartography	6	Compulsory
Informatics	6	Compulsory
SECOND SEMESTER		
Electromagnetism and Optics	6	Compulsory
Geomorphology	6	Compulsory
Mathematical Methods	6	Compulsory
Mechanics	6	Compulsory
Surveying Instruments and Methods	6	Compulsory
THIRD SEMESTER		
Environmental Engineering	4.5	Compulsory
Fundamentals of Civil Engineering	4.5	Compulsory
Geometric Geodesy	6	Compulsory
Geophysics	4.5	Compulsory
Mathematical Cartography	4.5	Compulsory
Observation Adjustment in Geomatics	6	Compulsory
FOURTH SEMESTER		
Business Organisation and Management	6	Compulsory
Digital Cartography	6	Compulsory
Digital Image Processing	6	Compulsory
GIS Databases	6	Compulsory
Network Design, Observation and Adjustment	6	Compulsory
FIFTH SEMESTER		
Design and Implementation of Geoservices	6	Compulsory

Subjects	ECTS credits	Type
Digital Photogrammetry	7.5	Compulsory
Geographic Information Systems	6	Compulsory
Global Satellite Positioning Systems	6	Compulsory
Spatial Databases	4.5	Compulsory
SIXTH SEMESTER		
3D Data Processing	4.5	Compulsory
Physical Geodesy	4.5	Compulsory
Remote Sensing	6	Compulsory
Smart Cities	4.5	Compulsory
Surveying in Civil Engineering	6	Compulsory
Urbanism and Regional Planning	4.5	Compulsory
SEVENTH SEMESTER		
Big Data for Geoservices	6	Compulsory
Cadastral	6	Compulsory
Spatial Data Infrastructure	6	Compulsory
Advanced Gns Analysis	3	Optional
Advanced Remote Sensing	3	Optional
Close Range Photogrammetry	3	Optional
Expert Reports	3	Optional
GIS Project Design and Management	3	Optional
Gns Projects	3	Optional
Monitoring for Systems Analysis in Engineering	3	Optional
Photogrammetry with UAV Systems	3	Optional
Programming for Geoinformation Applications	3	Optional
Sar Applications for Territory Observation	3	Optional
EIGHTH SEMESTER		
Geomatics Projects	6	Compulsory
Non-Conventional Surveys	6	Compulsory
Bachelor's Thesis	12	Project
PROFESSIONAL OPPORTUNITIES		

Professional opportunities

- Companies providing terrestrial, aerial and satellite geoinformation solutions and value-added solutions based on big geodata and for mobile applications.
- Companies that design, deploy and manage geographic information systems (GISs).
- Construction and civil engineering companies and surveyors.
- Public bodies: cartographic and geographic institutes, city councils, technical departments of ministries, etc.
- The study of environmental variables and measurement of land and maritime resources for urban, rural and regional development planning.
- Data acquisition in the form of land, architectural and archaeological surveys, as well as layouts and measurements related to civil works and building construction.
- Management, planning, valuation, administration and assessment of urban and rural property.

QUALITY ACCREDITATION

Check the degree's main quality indicators in the University Studies in Catalonia portal of the Catalan University Quality Assurance Agency. Find information on topics such as degree evaluation results, student satisfaction and graduate employment data.

[Further information](#)

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](#)

December 2025. [UPC](#). Universitat Politècnica de Catalunya · BarcelonaTech