Bachelor's degree in Geoinformation and Geomatics Engineering

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 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

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 Building Construction (EPSEB)

Official degree

Recorded in the Ministry of Education's degree register

ADMISSION

Places

50

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

- 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.

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 Building Construction (EPSEB)

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		
Digital Cartography	6	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
Geographic Information Systems	6	Compulsory

Subjects	ECTS credits	Type
GIS Databases	6	Compulsory
Global Satellite Positioning Systems	6	Compulsory
Physical Geodesy	4.5	Compulsory
FIFTH SEMESTER		
Design and Implementation of Geoservices	6	Compulsory
Digital Image Processing	6	Compulsory
Digital Photogrammetry	7.5	Compulsory
Network Design, Observation and Adjustment	6	Compulsory
Remote Sensing	4.5	Compulsory
SIXTH SEMESTER		
3D Data Processing	4.5	Compulsory
Environmental Engineering	4.5	Compulsory
Smart Cities	4.5	Compulsory
Spatial Databases	4.5	Compulsory
Surveying in Civil Engineering	6	Compulsory
Urbanism and Regional Planning	6	Compulsory
SEVENTH SEMESTER		
Big Data for Geoservices	6	Compulsory
Cadastre	6	Compulsory
Geomatics Projects	6	Compulsory
Non-Conventional Surveys	6	Compulsory
Spatial Data Infrastructure	6	Compulsory
EIGHTH SEMESTER		
Expert Reports	4.5	Optional
Geoinformation Sensors and Capture Systems	4.5	Optional
Gis Project Design and Management	4.5	Optional
High-Precision Processing of Gnss Data	4.5	Optional
Hydrographic and Underground Surveying	4.5	Optional
Programming for Geoinformation Applications	4.5	Optional
Remote Sensing Project	4.5	Optional
Terrestrial and Uav Photogrammetry	4.5	Optional
Bachelor's Thesis	12	Project