The double master’s degree in Mining Engineering and Geotechnical Engineering is a joint programme of the Manresa School of Engineering (EPSEM) and the Barcelona School of Civil Engineering (ETSECCPB). Both schools are internationally recognised and their wide-ranging research activity has strong ties to the industrial fabric. The EPSEM and the ETSECCPB belong to the Universitat Politècnica de Catalunya · BarcelonaTech (UPC), a renowned public institution of research and higher education in the fields of engineering, architecture, sciences and technology. With 50 years of history and more than 30,000 students, the UPC has the greatest concentration of research and technological innovation in southern Europe. It is the best Spanish university in Civil and Structural Engineering, according to the 2021 QS World University Rankings by Subject.

Training the engineers of the future

Para más información:
camins.upc.edu
manresa.upc.edu
### MASTER’S DEGREE IN MINING ENGINEERING AND GEOTECHNICAL ENGINEERING (Double degree)

The double master’s degree in Mining Engineering and Geotechnical Engineering provides specialised training in sustainable approaches to locating, extracting and processing minerals and energy resources, as well as in geotechnical engineering, water resource management, the assessment and prediction of seismic risk, the use of explosives and land management.

### Aimed at

The double master’s degree in Mining Engineering and Geotechnical Engineering has 15 places for holders of the following entrance qualifications:

- Bachelor’s degree in Mining Engineering.
- Bachelor’s degree in Energy and Mining Resource Engineering and university qualifications that qualify for practice as a mining engineer or technical mining engineer.
- Bachelor’s degree in Civil Engineering, Civil Engineering Technologies, Construction Engineering, Geological Engineering, Environmental Engineering or equivalent.
- Bachelor’s degree in Environmental Sciences, Geological Sciences or equivalent.
- Bachelor’s degree in Forest Engineering, Agricultural Engineering, Food Engineering or equivalent.

### Professional opportunities

Graduates may work in technical and managerial positions in private companies and public bodies in the sectors of mining, construction, civil works, the environment and spatial management, as well as in technological companies and consulting firms in these areas, thanks to the wide range of knowledge gained on the double master’s degree. They may also join work teams as managers or specialists in areas and activities related to geotechnical engineering; management and planning of geotechnical works and water resources; assessment and reduction of seismic, geological and hydrogeological risk; planning and management of waste storage solutions; and consulting in civil, geotechnical, geological and earthquake engineering. You will also have access to several doctoral programmes, which will allow you to further your career in research.

### Teaching

Two semesters are taught face-to-face at each school, with different pathways depending on where you start studying. Subjects in the common subject area of the master’s Degree in Mining Engineering are taught at the EPSEM (Manresa Campus) and subjects in the common subject area of the master’s Degree in Geotechnical Engineering are taught at the ETSECCPB (North Campus, Barcelona). Classes are taught in Spanish, Catalan and English.

### Internationalisation

The programme offers international mobility at universities renowned for mining and geotechnical engineering.

### Work placement

The double master’s degree offers work placements that complement your academic training.

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### Curriculum

This information may be subject to change. Up-to-date information is available at upc.edu

#### Pathway if you start the degree at the EPSEM

**First year**
- **First semester**
  - Mining Economics
  - Mining Machinery
  - Geological Resource Modelling and Estimation
  - Geological Resource Modelling
  - Geological and Energy Resource Management
  - Land and Underground Space Management

**Second year**
- **First semester**
  - Modeling of Flow and Transport in Porous Media
  - Soil Mechanics
  - Rock Mechanics
  - Seismology (compulsory specialisation subject)
  - 3 compulsory specialisation subjects* 15 credits

**Second semester**
- **3 optional subjects**
  - Joint Master’s Thesis 45 credits

#### Pathway if you start the degree at the ETSECCPB

**First year**
- **First semester**
  - Mining Economics
  - Mining Machinery
  - Geological Resource Modelling and Estimation
  - Geological Resource Modelling
  - Geological and Energy Resource Management
  - Land and Underground Space Management

**Second year**
- **First semester**
  - Mining Economics 5 credits
  - Mining Machinery 5 credits
  - Geological Resource Modelling and Estimation 5 credits
  - Soil Mechanics 5 credits
  - Rock Mechanics 5 credits
  - Seismology (compulsory specialisation subject) 5 credits

**Second semester**
- **1 compulsory specialisation subject**
  - Joint Master’s Thesis 45 credits

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** Optional subjects of the master’s degree in Geotechnical Engineering:
- Mass Transfer in the Ground
- Interaction between Groundwater, Civil Works and the Environment
- Earthquake Risk Assessment
- Seismic Design
- Geotechnical Characterisation
- Coupled Processes in Soil and Rocks

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**Credits**
- 150 ECTS credits
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