MASTER’S DEGREE IN GEOTECHNICAL AND EARTHQUAKE ENGINEERING

ESCOLA DE CAMINS
Barcelona School of Civil Engineering

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

International Campus of Excellence
MASTER’S DEGREE IN GEOTECHNICAL AND EARTHQUAKE ENGINEERING

On the master’s degree in Geotechnical and Earthquake Engineering you will train as a specialist in geotechnical engineering, water resource management and the assessment and prediction of seismic risk. The aim is to train professionals and academics in the fields of geotechnical engineering, hydrogeology, geophysics and earthquake engineering.

The course responds to a growing demand for experts in infrastructure construction, management of water resources and behaviour of soil pollutants. Graduates may also seek employment as specialists in geophysics and earthquake engineering who have the ability to assess, predict and reduce seismic risk.

Areas of knowledge

Geotechnical Engineering
Groundwater Hydrology
Earthquake Engineering and Geophysics
Languages
Face-to-face teaching is in Spanish or Catalan, although some subjects may be taught in English.

International recognition
The master’s degree is well known internationally and many of its students come from abroad. Its lecturers are active internationally, with visible effects on the academic programme. Every year, distinguished guest lecturers give classes on the master’s degree.

Research
Researchers from the Department of Geotechnical Engineering and Geo-Sciences, who are in charge of teaching the master’s degree, have gained international recognition in the form of distinctions and prizes. Two doctoral programmes that have been awarded Pathway to Excellence awards—the doctoral degree in Geotechnical Engineering and the doctoral degree in Earthquake Engineering and Structural Dynamics—are taught at the Department. They are essential to applied research in the fields of hydrogeology, geotechnics, geological engineering and earthquake engineering. Advanced optional subjects complement a wide range of courses, from the foundations of the discipline to the application of engineering practices. They allow students to master multidisciplinary content that will be useful to them in their future careers.

Master’s thesis
Optional subjects involve a piece of work on a specific topic that has a research component or offers the application of new techniques in the field of geotechnical or earthquake engineering. Technical projects must be of a professional standard and are designed to prepare students for professional practice by encouraging them to plan and perform quality work based on the knowledge and skills acquired throughout the course, incorporating engineering standards, realistic constraints and economic and environmental considerations. In the case of a project with a research component, students are generally integrated into teams of researchers from the Department that are working on some of the research projects in which lecturers are involved. In some cases, the work can be done abroad as part of an international project or in collaboration with a company.

Specific requirements
The master’s degree is aimed at holders of bachelor’s degrees or pre-EHEA degrees in engineering, technical engineering, architecture and technical architecture. A good grounding in physics and mathematics is strongly recommended. The professional track of the master’s degree also welcomes applications from candidates with degrees in civil engineering, geology, geological engineering, physics and architecture, in addition to students who have successfully completed the International Groundwater Hydrology Course (CIHS).

www.camins.upc.edu/estudis

Which subjects will you choose?

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<thead>
<tr>
<th>COMMON COMPULSORY SUBJECTS</th>
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<tr>
<td>Continuum Mechanics (S1)</td>
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<td>Modelling in Geotechnical Engineering (S1)</td>
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<tr>
<th>Specialisation in Geotechnical Engineering</th>
<th>Specialisation in Groundwater Hydrology</th>
<th>Specialisation in Earthquake Engineering and Geophysics</th>
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<tr>
<td>Compulsory specialisation subjects</td>
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<td>Geology Applied to Engineering (S2)</td>
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<td>Soil Mechanics (A)</td>
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<td>Soil Mechanics (A)</td>
<td>Basic Groundwater Hydrology (S1)</td>
<td>Seismology and Earthquake Engineering (A)</td>
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<td>Foundations (S1)</td>
<td>Modelling of Flow and Transport in Porous Media (S1)</td>
<td>Dynamics of Soils and Foundations (S2)</td>
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<td>Dynamics of Soils and Foundations (S2)</td>
<td>Interaction of Groundwater and Civil Works (S2)</td>
<td>Evaluation of Seismic Hazards (S1)</td>
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<td>Optional specialisation subjects</td>
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Master’s Thesis

Consult the curriculum on the master’s degree website: www.camins.upc.edu/estudis
Acquire multidisciplinary training and in-depth knowledge of geotechnical and earthquake engineering and water resource management.

You can carry out the master’s thesis on an innovative and creative subject in one of the areas of knowledge.

Your talent, leading your future

Further information:
www.camins.upc.edu/estudis
area.academica@upc.edu
www.upc.edu/sri/students