UNIVERSITÀ DEGLI STUDI FIRENZE

United Nations Educational, Scientific and Cultural Organization

UNESCO Transdisciplinary Chair Human Development and Culture of Peace University of Florence

GEOENGINEERING

second cycle degree

UNESCO Chair on Prevention and Sustainable Management of Geo-Hydrological Hazards

ENROLMENT

To be admitted to Geoengineering, a first cycle or a single cycle degree awarded by an Italian or a foreign University is required. In addition, applying students have to meet general educational requirements and possess adequate personal education background.

CONTACTS

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SCUOLA DI INGEGNERIA | UNIVERSITÀ DEGLI STUDI DI FIRENZE

Geoengineering is an international and interdisciplinary master devoted to train specialist technicians/practitioners in the activities of monitoring, design and management of systems and structures for geohydrological risk reduction with particular reference to floods, landslides, subsidence, sinkholes and in general to slope and basin scale dynamics.

An international MSc Program supported by the UNESCO Chair

PROGRAMME

The teaching program provides fundamental tools for quantitative analysis of engineering systems in the context of geological processes, their time evolution and their modeling, especially for application purposes, prevention, protection of society and environment from hydrogeological risk.
The programme is implemented through a two-year study plan (120 ECTS) in accordance with the learning objectives in different sectors, i.e. structural mechanics, geotechnics, hydrology and hydraulics, geology and engineering geology, all integrated through advanced numerical methods, statistics and geomatics.

WHAT YOU LEARN

In Geoengineering you are trained in an interdisciplinary environment, learning how to analyze and manage complex environmental conditions, geo-hydrological processes and problems.
As a Geoengineering student, you'll develop in-depth scientific knowledge and technical skills to design, plan, and manage complex and innovative systems, processes and services on a territorial scale. Methods and techniques for territorial investigation, environmental monitoring, analysis and data integration at different territorial scales will be key intermediate learning goals.

FIRST YEAR

- Fluvial hydraulics
- Structural mechanics & engineering
- Geology
- Engineering geology
- Engineering geomorphology
- Computational methods

SECOND YEAR

- Watershed hydrology
- Geomatics
- Earthquake geotechnical engineering
- Slope stability
- Watershed management /Soil conservation
- Elective courses
- Stage - Traineeship - Final examination

WHAT YOU WILL DO

With a degree in Geoengineering you will be a top-skills expert in the prevention, mitigation and management of geo-hydrological hazards and risks, with particular reference to floods, landslides, subsidence, sinkholes and earthquakes. Due to the interdisciplinary and international character of the study course, the Geoengineer graduated in Firenze will be attractive in both enterprises and public agencies operating across a wide range of engineering fields, from hydraulics to geotechnics and applied geology.

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