



Master of Science in Hydrogeology and Geothermics

Cutting-edge science and high quality teaching

Internationally recognized and accredited by the Swiss Confederation, the Centre for Hydrogeology and Geothermics (CHYN) has around 50 members of staff and is equipped with state-of-the-art facilities for cutting-edge science and high quality teaching.

CHYN's research themes focus on subsurface water and energy resources, with special emphasis on fundamental and applied aspects of operational hydrogeology, hydrodynamics, hydrochemistry, geochemistry, geothermics, geostatistics and mathematical modelling.

Specific strengths

Technical skills are an important part of the programme, whether relating to groundwater prospection and abstraction, or reservoir characterization and protection. There is particular emphasis on groundwater contamination processes and remediation issues, as well as the prospection and exploitation of geothermal resources at low, medium and high depths.

Degree awarded

Master of Science in Hydrogeology and Geothermics

Credits

120 ECTS, 4 semesters

Teaching languages

English and French

Conditions for admission

The MSc is open to anyone holding a Bachelor's degree in a) Earth Sciences or Geology (from a university), b) Civil or Environmental Engineering (from an ETH), or any degree equivalent to a) or b).

Application deadline

April 30 for the Autumn Semester (mid-September)

Start date: Autumn semester

Registration

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Information

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A unique training opportunity

Moving towards sustainable use of subsurface water and energy resources is a major challenge for our society, and for geoscientists in particular. This MSc degree, unique in Switzerland, offers a complete introduction to the current scientific approaches to address this challenge.

Designed by CHYN's dedicated staff, the programme delivers comprehensive hydrogeological training that covers the relevant physical, chemical, biological and thermal processes, as well as key field investigation techniques.

Intense teaching over three semesters provides students with core knowledge and specific skills in hydrogeology and geothermics. The fourth semester is devoted to an individual research project, to be carried out internally or in collaboration with external partners.

Careers

Hydrogeology and geothermics benefit from a favourable situation on the job market, both in Switzerland and internationally.

Graduates with a MSc in Hydrogeology/Geothermics are sought by groundwater engineering and consulting companies, by major water and energy suppliers, as well as by public administrations. Hydrogeologists are also frequently recruited by development and humanitarian organisations. For highly motivated candidates, this training also opens the way to a PhD thesis.

Contents of the study program

- Introduction to hydrogeology and geothermics
- Groundwater dynamics and transport processes
- Hydrochemistry and microbiology
- Rock mechanics and geotechnical engineering
- Alluvial, fissured and karst aquifers
- Hydrogeological and geophysical investigations
- Engineering and resource exploitation
- Resource management in various contexts
- Reservoir modelling and geostatistics
- Numerical simulation of hydrochemical, hydrothermal and geomechanical processes
- Fieldwork camps and excursions
- Individual MSc thesis research

For further information

www.unine.ch/master

www.unine.ch/chyn

www.unine.ch/sciences

