SCIENCES, TECHNOLOGIES AND HEALTH

Hydraulics, Civil and Environmental Engineering 1st year

Master in Civil engineering

Target level
Baccalaureate +4

ECTS
60 credits

Duration
1 year

Component
Grenoble INP - Ense3 (Energie, eau, environnement), UGA

Language(s) of instruction
English

Presentation

Created in 2011, the international Master program in Hydraulics, Civil and Environmental Engineering at Grenoble INP-UGA is one of the most widely recognized programs in the fields of hydraulics, mechanical engineering and civil engineering, in connection with new environmental challenges. It enables students to acquire the scientific knowledge needed to develop projects to preserve, anticipate and manage water resources, while at the same time giving them the keys to designing civil engineering structures in connection with hydraulics and the natural risks exacerbated by climate change. This dual expertise in ‘hydrology’ and ‘structural design/analysis’ is what makes this Master's programme unique.

Skills

Environnemental engineering / Environmental hydraulics / Civil engineering / Infrastructure / Construction / Hydraulics / Dikes / Dams / Geomechanics / River hydraulics / Modellings / Computational hydraulics / Global water management challenges / Natural hazard / Environnemental sustainability / water engineering / Water traitement / Water management / Water pollution and sanitation / Urban hydrology and hydraulics

International education : Internationally-oriented programmes

International dimension

The Master's degree is a one-or two-year program that can be integrated into M1 or M2 depending on the student's most recent university degree (Bachelor's or Master's). 100% taught in English, it welcomes students from all over the world every year.
At the end of the course, half the students find a job in the industry as an engineer/manager, while the other half pursue their dissertation studies to obtain a doctorate.

Organisation

Knowledge check

- You will develop dual skills in ‘hydrology’ and ‘design of hydraulic structures’ and ‘soil reinforcement’.

- You will benefit from training in an international context at the heart of a leading engineering school.

- You will be part of a class on a human scale

- Your training will include lectures, tutorials, engineering projects, practical work, internships and specific support sessions on request.

- You have access to an exceptional research environment (UGA laboratories and partners) and unique experimental rooms.

- Grenoble and its region are pioneers in the field of hydroelectricity. Because of the school's geographical location, you will have the opportunity to discover major hydraulic infrastructures.

Admission

Access conditions

For the M1
To apply for the Master 1 you must have a bachelor's degree in civil engineering related to hydraulics, water treatment, geomechanics and/or environment.
Capacity: 18 places (200 applicants each year)

Candidature / Application

Applications can be made via the following website:

Application website

Recruitment campaign :
- Recruitment opening date: 15 October 2024
- Closing date: 15 May 2025
- Start date of the Master's degree in 2025: September 2025

Selection in two stages:
- application
- 30-minute interview by videoconference

Fees

Master in Hydraulic and Civil Engineering - Grenoble INP - Ense3, UGA (grenoble-inp.fr)

And after

Sector(s)

Thanks to its dual focus, the HCEE Master's degree enables students to work in ‘hydrology’ and/or ‘civil engineering’ oriented fields.

Targeted trades

The sectors concerned are project management (public or private), design offices, inspection offices and consultancy firms, water concessionaires and research in the fields of design of exceptional structures for which water flows are dimensioning factors.

It is also possible to pursue a doctoral thesis in the fields of civil engineering specializing in hydraulic structures, water and soil management.

Useful info

Contacts

Program director

Gaël COMBE

dir-master-hce.ense3@grenoble-inp.fr

Administrative contact

Secrétariat scolarité master HCEE

international.ense3@grenoble-inp.fr

Course location(s) - City

Grenoble

Campus

Grenoble - University campus

Grenoble - Scientific Polygon

Program

Organization

Expert teachers at Grenoble INP - Ense3 , UGA

Dr Gaël COMBE, Full Professor, is a researcher at 3SR-UGA. He is head of the HCEE Master's program. Experts in granular media, he teaches soil mechanics and the mechanics of continuous media.

Dr Éric BARTHELEMY, Full Professor, is a researcher at LEGI-UGA. Experts in the hydro-sedimentary mechanisms responsible for shoreline evolution, he teaches free-surface hydraulics.

Dr Isabella ZIN TOMASINO, Ass. Professor, is a researcher at IGE-UGA. Experts in hydrometeorology, she teaches water resources management.

Dr Frédéric DUFOUR, Full Professor, is a researcher at 3SR-UGA. Experts in the numerical modelling of civil engineering structures, he teaches the Finite Element Method.

Dr Rémi CHASSAGNE, Ass. Professor, is a researcher at LEGI-UGA. Experts in sediment transport, he teaches fluid mechanics.

Dr Ludovic MISSEMER. Lecturer, he teaches mechanics of structures and hydraulics.

Dr Louise CROCHEMORE, Ass. Professor, is a researcher at l'IGE-UGA. Head of the M2 HCEE program and experts in hydroclimatology, she teaches hydrological modelling and forecasting.

Dr Bruno CHAREYRE, Ass. Professor, is a researcher at 3SR – UGA. Experts in the modelling of hydromechanical couplings, he teaches solid mechanics and numerical methods.

Dr Fabrice EMERIAULT, Full Professor, is a researcher at 3SR-UGA. Experts in geotechnical structures, he teaches the design of geotechnical structures and the mechanical improvement of soils.

Dr Quentin ROUSSEAU, Ass. Professor, is a researcher at 3SR-UGA. Head of the M2 HCEE program and experts in theoretical mechanics, he teaches mechanics of structures.

Dr Philippe SECHET, Ass. Professor, is a researcher at LEGI-UGA. Experts in water remediation processes, he teaches water treatment and urban hydrology.

Julien CHAUCHAT, Ass. Professor, is a researcher at LEGI-UGA. Experts in sediment transport modelling, he teaches hydrology and associated numerical models.
3SR-UGA : Soils, Solids, Structures, Risks research unit.

LEGI-UGA : Geophysical and Industrial flows research unit

IGE-UGA : Institute of Geosciences and Environment

Specifics of the program

First-year course topics (M1 HCEE)

- Applied Structural Analysis
- Materials and Structures
- Continuum Mechanics and Finite Element Modelling
- Engineering Hydrology
- Pressurized Flow Hydraulics
- Open Channel Hydraulics
- Ground Hydraulics and Groundwater Works
- Soil and Rock Mechanics
- French Language
- Professional Skills Support
- Industrial or research project or team project + internship