



Grenoble  
ENSE<sup>3</sup>



# INTERNATIONAL MASTER OF SCIENCE IN HYDRAULIC ENGINEERING

This master program is intended to prepare students for hydraulic engineering activities. These include design, running and maintenance of dams, hydroelectric facilities and hydraulic engineering works, flood and water resources management, hydrological forecast, design of water schemes, water treatment, drainage and sewer in urban areas. We give high level education based on thorough scientific and technological knowledge.

<http://master-hydraulic.grenoble-inp.fr>

## Welcome to Grenoble INP Ense<sup>3</sup>

Owing to its outstanding scientific environment and its pioneering activities related to hydroelectricity, Grenoble has always been at the forefront of the development of new technologies in the field of energy and water management.

Taking full advantage of this background, the Ense<sup>3</sup> school trains high-level engineers, masters and doctors able to take up the challenges associated with the world new energy order, with the worldwide increasing demand of water, both in quantity and quality, and with the sustainable development and country planning.

Our school combines technical and scientific skills in the fields of electrical, mechanical, hydraulic, civil and environmental engineering in order to address the full energy chain (production, distribution, usages, trading) as well as the full water cycle (harnessing, storage, supply, treatment).

## Overview and career opportunities

The water resources of the planet must be managed more efficiently each day and in a sustainable way.

This program aims at training specialists for both public and private sectors capable of addressing today's and future issues and needs in hydraulic and civil engineering, hydraulic works and infrastructures, hydrology, and water resources management.

The program draws on theoretical, experimental, technological and numerical methods. The training is supported by a staff from associated research laboratories and practitioners from industrial partners.

The career prospects for graduates are very good as the whole program is designed to provide industry oriented training in a scientific environment. Graduates may join industry or may like to pursue PhD programs in one of the associated research laboratories (3SR, LEGI, LTHE,...) or join other universities all over the world.

## Master thesis

During the last semester, the students prepare their Master thesis. The internship takes place from the beginning of February to the end of June either in an industrial firm or in a research laboratory, in France or abroad.

Laboratories : 3 SR, LEGI, LTHE, ..

Companies : EDF, GDF Suez, Veolia



# PROGRAM CONTENT

## MASTER 1<sup>ST</sup> YEAR

### Semester 1 - 30 ECTS\*

French culture and language  
Solid Mechanics  
Hydrology and process  
Hydraulics  
Infrastructures  
Applied structural analysis



### Semester 2 - 30 ECTS\*

French culture and language  
Project management  
Advanced hydraulics  
Advanced infrastructures  
Training period

## MASTER 2<sup>ND</sup> YEAR

### Semester 3 - 30 ECTS\*

Compulsory modules  
River hydraulics and flood risk  
Applied hydraulics and infrastructures  
Structural design

#### Mandatory modules (1 among 2)

Urban hydrology and water quality or  
Natural hazards and structures

### Semester 4 - 30 ECTS\*

Master thesis

\* ECTS - European Credits Transfer System : The ECTS guarantees the mutual academic recognition of studies carried out abroad.

## Admission requirements

Selection is made on the basis of prior academic and/or scientific achievement as documented by academic transcripts, a cover letter, references, and standardized test scores.

- You can apply at the 1st year of the master if you have a Bachelor degree in either Science (BSc) or Engineering (BEng) including courses in hydraulic, mechanical and civil Engineering

- You can apply directly at the 2nd year of the master if you have a Master degree or a 4 years of higher education level

Students from countries where English language is not the primary language are required to provide TOEFL or other equivalent test scores.

**Application deadline:** before May 15th each year  
for the following september start

Download application form on our website

**Tuition fees :** Please visit our website : <http://master-hydraulic.grenoble-inp.fr>  
Grants are available and training period in companies are paid.

## STUDENT LIFE

Students will also participate to the lively Grenoble student life. A whole variety of activities are offered by clubs and societies that allow students to take part in activities of their interests sports, sport fans (leading centre for mountain sports), into charity work (ISF/Engineers without borders) or international relations (BEST Board of European Students of Technology), leisure activities (comics, astrology) or music.



**ECOLE NATIONALE SUPERIEURE  
DE L'ENERGIE, L'EAU ET L'ENVIRONNEMENT**

Domaine Universitaire  
11, rue des Mathématiques  
BP 46  
38402 St Martin d'Hères cedex  
France

[international.ense3@grenoble-inp.fr](mailto:international.ense3@grenoble-inp.fr)

Grenoble is a town with a large student population (60 000, around one tenth of the population), young and relaxed, cosmopolitan, with a healthy cultural and sporting life.

At 3 hours from Paris by train, at the foot of the Alps and world famous ski resorts, Grenoble is a town in which you can feel the influence of Italy and the Mediterranean sea.



<http://master-hydraulic.grenoble-inp.fr>