

>The University of Grenoble The University of Grenoble



The University of Grenoble offers courses in every field and is open to the outside world, with more than 25 international Master's programs.

Grenoble is one of the leading research centres in France hosting 60000 students, of which 7000 foreign.



>Living in Grenoble Living in Grenoble



Grenoble offers an outstanding environment for outdoor activities, culture, and night life. The city is surrounded by mountains where skiing, rock climbing, mountain biking, and paragliding are full parts of a citizen's life.

For all these reasons, students have ranked Grenoble among the top 2 most pleasant cities for studying in France.

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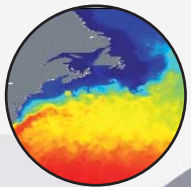
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www-meca.ujf-grenoble.fr/master-MEI/EFM

Master EFM Environmental Fluid Mechanics

Understanding
the fluid mechanics of natural media:
a key to discovering and deciding



> About the Master EFM

The Grenoble scientific community stands at the forefront in fluid mechanics, turbulence, and applications to the environment. The Master's program of Environmental Fluid Mechanics is backed by this expertise.



The Master's program offers lectures involving both the most recent theoretical knowledge in the field (e.g. Atmospheric boundary layers, Sediment transport, Turbulence) along with practical and important applications (e.g. air quality, water management, oceanic forecast systems).

PRE-REQUISITES

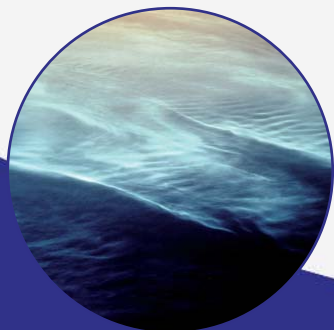
Bachelor in Physics, Mechanical Engineering, Earth Sciences or Applied Mathematics. A good knowledge of fluid mechanics is required.

MASTER'S PROGRAM

- First semester : lectures, tutorials and practical work (about 240 hours)
- Second semester : five month research internship in Grenoble or a laboratory of our foreign partners

OPPORTUNITIES FOR GRADUATES

- PhD thesis in Grenoble
- Joint PhD thesis between a Grenoble laboratory and a foreign laboratory
- PhD thesis in a foreign country
- A career in industry or in environmental agencies



> your Studies

EFM is a one-year program and all courses are given in English.

FIRST SEMESTER

The first semester is dedicated to lectures, tutorials and practical work.

Mandatory courses include Geophysical fluids dynamics and Turbulence.

Optional courses include more specialised topics such as Atmospheric boundary layers, Air-water exchange, Sediment transport or Advanced tools and methods in fluid mechanics.

SECOND SEMESTER

The second semester is dedicated to a 5-month research internship in a Grenoble laboratory or a laboratory of our foreign partners.



The skills acquired during the Master's program include:

- analysis and modelling of dynamical processes in turbulent flows of natural media
- analysis and modelling of coupled processes between turbulent flows and chemistry, biology or sediments
- performing and analysing measurements in air and water using advanced experimental techniques
- Implementation of advanced numerical methods to combine observations with models
- and, last but not least, read and write scientific English and (if the student has a B2 English level already) acquire the basis of another language

> Once you have graduated

Graduates of the Master's program can undertake a PhD thesis in fundamental or applied environmental fluid mechanics.

Applied PhD topics are renewable energies, air quality, thermal ventilation of buildings, biological or chemical pollution of waters (such as lakes, rivers, estuaries), sediment transport, to mention but a few examples.

Graduate students can also apply to companies and agencies dealing with management and optimisation of natural resources, air and water quality or renewable energies, for example.

An international Master's program

Seminars and video-conferences will be given by our foreign partners during the first semester to present their laboratory and the Master's subjects they propose.

All french students will perform the five month research internship in a foreign laboratory.

