

Fluid mechanics and energetics (FME)

Master in Mechanics



Duration
2 years



Component
Grenoble
INP, Institut
d'ingénierie et
de management
- UGA



**Language(s) of
instruction**
English

Presentation

The Fluid mechanics and energetics program is structured as follows:

- A foundation program (over 1st + 2nd years) of 45 ECTS - including 2 x 3 ECTS in a modern language
- A specific modules (45 ECTS)
- A 5-month internship (30 ECTS) in a research laboratory

The program is open to international students. All teaching is in English.

The main aim of this program is to train managers with solid scientific and technical skills in fluid mechanics and transfers (thermal, chemical) from theoretical, numerical and experimental perspectives.

International education : Internationally-oriented programmes

Admission

Access conditions

The master's degree in Fluid mechanics and energetics is a highly competitive academic program (duration: one year, master 2nd year level). Applicants selection is done on

the basis of prior academic and/or scientific achievement as documented by academic transcripts, a cover letter, references, and standardized test scores. Students from countries where English language is not the primary language are required to provide TOEFL test scores. To get master degree, admitted students must obtain the certified level B2.

For students with a foreign degree, their registration is definitely authorised by the Committee for Academic Accreditation at Grenoble university (CVA). Several meetings are organised several times a year (february - june) to select applications from abroad.

You are strongly encouraged to apply as soon as possible. The selection of applicants is based on the following criteria :

- Administrative rules mentioned above
- One year master study (science or engineering), in the following fields : fluid mechanics, chemical engineering, physics or applied mathematics as well provided they already demonstrated a significant level in fluid mechanics.

Candidature / Application

Before you complete and send the application form by e-mail, you must absolutely subscribe to the website of Campus France, providing all necessary documents. To this purpose, click on the following links :

- <http://www.campusfrance.org/>

- <http://www.campusfrance.org/fria1004/lm/master.html>
Data to mention possibly for selecting FME master in the proposed list : master research Sciences, technology, health in Mechanics, Energetics and engineering mechanical specialty of fluids and energetics

- Application before may 13th
- Apply [online](#)

Fees

Tuition fees 2019-2020 : 243 €

Prerequisites

- English language: B1 level
- TOEFL: computer-based: 140
- IBT: 60
- Paper-based : 457
- TOEFL institution code is 6050, Department : Ense3
- TOEIC : 550
- IELTS: 4.5

And after

Targeted trades

This research program is mainly intended for students wishing to prepare for doctoral studies in fluid mechanics and transfers (thermal, chemical), either in France or abroad, with a view to pursuing a career as teacher-researcher in a university, researcher in a large public organisation (CNRS, CEA etc), or R&D engineer within a company in the energy or transport sectors etc.

Useful info

Contacts

Program director

Samuel Siedel

✉ samuel.siedel@simap.grenoble-inp.fr

Program administration

Catherine Chirouze

✉ Catherine.Chirouze@grenoble-inp.fr

Course location(s) - City

📍 Grenoble

Campus

🏠 Grenoble - University campus

Know more

Master website

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

Program

Master in Applied mechanics 1st year

Semester 7

	Nature	CM	TD	TP	Crédits
UE Solid mechanics	Teaching Unit (UE)	11,5h	13h		3 credits
UE Fluid mechanics	Teaching Unit (UE)	18h	6h		3 credits
UE Research project 1	Teaching Unit (UE)			30h	6 credits
UE Experimental techniques and methods 1	Teaching Unit (UE)				3 credits
UE Numerical methods in solid and fluid mechanics 1	Teaching Unit (UE)			12h	3 credits
UE Image and signal processing	Teaching Unit (UE)			12h	3 credits
UE English	Teaching Unit (UE)				3 credits
UE French as a foreign language (FLE)	Teaching Unit (UE)				3 credits
UE Basic geomechanics	Teaching Unit (UE)				3 credits
UE Mechanics of material	Teaching Unit (UE)				3 credits
UE Reinforced concrete	Teaching Unit (UE)				3 credits
UE Physics of granular media	Teaching Unit (UE)				3 credits
UE Multiphysical couplings (THCM)	Teaching Unit (UE)				3 credits
UE Convection in industrial and geophysical flows	Teaching Unit (UE)	18h	8h		3 credits
UE Instabilities and turbulence	Teaching Unit (UE)	14h	6h	8h	3 credits

UE Wave in fluids	Teaching Unit (UE)	16h	8h	3 credits
UE Introduction of geophysical fluids dynamics	Teaching Unit (UE)	15h	15h	3 credits

Semestre 8

	Nature	CM	TD	TP	Crédits
UE Research project 2	Teaching Unit (UE)			60h	12 credits
UE Experimental techniques and methods 2	Teaching Unit (UE)	4h		20h	3 credits
UE Numerical methods in solid and fluid mechanics 2	Teaching Unit (UE)	4h		20h	3 credits
UE English	Teaching Unit (UE)				3 credits
UE French as a foreign language (FLE)	Teaching Unit (UE)				3 credits
UE Basic geomechanics	Teaching Unit (UE)				3 credits
UE Mechanics of material	Teaching Unit (UE)				3 credits
UE Reinforced concrete	Teaching Unit (UE)				3 credits
UE Physics of granular media	Teaching Unit (UE)				3 credits
UE Multiphysical couplings (THCM)	Teaching Unit (UE)				3 credits
UE Instabilities and turbulence	Teaching Unit (UE)	14h	6h	8h	3 credits
UE Wave in fluids	Teaching Unit (UE)	16h	8h		3 credits
UE Environmental flows	Teaching Unit (UE)	15h	12h	3h	3 credits
UE Introduction of geophysical fluids dynamics	Teaching Unit (UE)	15h	15h		3 credits

Master 2nd year

Semester 9

Semester 10