

# Environmental fluid mechanics 2nd year

Master in Mechanics



**Target level**  
Baccalaureate  
+5



**ECTS**  
60 credits



**Duration**  
1 year



**Component**  
UFR PhITEM  
(physique,  
ingénierie, terre,  
environnement,  
mécanique)



**Language(s) of instruction**  
English

## Presentation

The Environmental fluid mechanics program is structured as follows :

- A foundation program (over 1st + 2nd years) of 51 ECTS - including 2 x 3 ECTS in a modern language
- Specific modules (39 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 environmental fluid mechanics (lakes, rivers, ocean, atmosphere etc) from theoretical, numerical and experimental perspectives.

For more information : <http://master-efm.legi.grenoble-inp.fr>

**International education** : Internationally-oriented programmes

## International dimension

### Study abroad as an exchange student

As part of this track, you have the opportunity to study for a semester or a year at a UGA partner University abroad.

The International Relations Officers of your faculty will be able to provide you with more information.

More information on : <https://international.univ-grenoble-alpes.fr/partir-a-l-international/partir-etudier-a-l-etranger-dans-le-cadre-d-un-programme-d-echanges/>

## Admission

### Access conditions

- **For the first year** : holders of a general scientific degree with a specialisation in mechanics, or equivalent diploma
- **For the second year** : students who have completed the first year of a compatible programme or one of equivalent level

For candidates whose country of residence is not included in the "Studies in France" portal (PEF) scheme, the calendar for the eCandidat application campaigns is available [here](#)

Public continuing education : You are in charge of continuing education :

- if you resume your studies after 2 years of interruption of studies

- or if you followed a formation under the regime formation continues one of the 2 preceding years
  - or if you are an employee, job seeker, self-employed
- If you do not have the diploma required to integrate the training, you can undertake a [🔗](#) validation of personal and professional achievements (VAPP)

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## Candidature / Application

Would you like to apply and register ? Be aware that the procedure differs depending on the diploma, the degree obtained, or the place of residence for foreign students. Let us guide you simply by following this [🔗](#) link

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## Fees

Tuition fees 2022-2023 : 243 €+100€ CVEC

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## And after

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### Targeted trades

This research program offers two main career opportunities :

- Doctoral studies in environmental fluid mechanics, either in France or abroad, with a view to pursuing a career as teacher-researcher in a university, or researcher in a large public organisation (CNRS, CEA etc)
- Engineer within a company or organisation in the environment or energy sectors

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## Useful info

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## Contacts

### Program director

Chantal Staquet

✉ Chantal.Staquet@grenoble-inp.fr

### Program administration

Registrar's Office for the Master in Mechanics

✉ phitem.master.mecanique@univ-grenoble-alpes.fr

### Program administration

Application

✉ phitem.candidature.etudiant@univ-grenoble-alpes.fr

### Continuing education manager

Laura DI RUZZA

✉ fc-phitem@univ-grenoble-alpes.fr

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## Course location(s) - City

📍 Grenoble

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## Campus

🏠 Grenoble - University campus

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## Know more

Master website

🔗 <http://master-efm.legi.grenoble-inp.fr/>

# Program

## Master 2nd year

### Semester 9

	Nature	CM	TD	TP	Crédits
UE Turbulence, diffusion and transport	Teaching Unit (UE)	42h			6 credits
UE Scientific computing	Teaching Unit (UE)		12h	9h	3 credits
UE English	Teaching Unit (UE)		24h		3 credits
UE Transversal teaching of choice	Teaching Unit (UE)				3 credits
UE French as a foreign language - Semester 9	Teaching Unit (UE)				3 credits
UE Signal and information processing in fluid mechanics	Teaching Unit (UE)				3 credits
UE Atmospheric boundary layer : from fundamentals to air quality 1	Teaching Unit (UE)	24h			3 credits
UE Atmospheric boundary layer : from fundamentals to air quality 2	Teaching Unit (UE)	24h			3 credits
UE Exchanges across air-water interface	Teaching Unit (UE)	24h			3 credits
UE Renewable marine energy	Teaching Unit (UE)	14h	12h		3 credits
UE Ocean dynamics	Teaching Unit (UE)	24h			3 credits
UE Wave dynamics	Teaching Unit (UE)	24h			3 credits
UE Sediment transport	Teaching Unit (UE)	24h			3 credits
UE Flow measurement science and technology	Teaching Unit (UE)	15h	8h		3 credits
UE Data assimilation	Teaching Unit (UE)	21h	9h		3 credits

UE Machine learning for environmental sciences

Teaching  
Unit (UE)

3 credits

UE in another program or specialisation

SUBJECT

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Stage (Internship)	Teaching Unit (UE)				30 credits