

# MASTER <sup>IN</sup> EARTH, PLANETARY, AND ENVIRONMENTAL SCIENCES

Faculty of Fundamental  
and Applied Sciences  
University of Nantes



- EARTH AND PLANETS
- ENVIRONMENTAL MAPPING AND MANAGEMENT
- MARINE ECOSYSTEMS AND BIOPRODUCTION
- AQUACULTURE, ENVIRONMENT AND SOCIETY

[www.univ-nantes.fr/sciences](http://www.univ-nantes.fr/sciences)



UNIVERSITÉ DE NANTES  
FACULTÉ DES SCIENCES  
ET DES TECHNIQUES

UNIVERSITE  
BRETAGNE  
LOIRE

Located in a rapidly growing metropolis, the Faculty of Fundamental and Applied Sciences at the University of Nantes has many assets to meet the often complex challenges of today's and tomorrow's world.

Our aim is to train young graduates who have acquired the knowledge and skills required to enter high-level scientific professions, whether in the fields of research, development, production or teaching.

Whatever your degree level (Bachelor, Master or PhD), you will be able, at various levels of performance, to :

- **master complex disciplinary and interdisciplinary knowledge ;**
- **apply a scientific approach, develop innovative ideas and manage a project ;**
- **be autonomous in your learning in varied contexts ;**
- **communicate clearly, accurately, openly and effectively ;**
- **work in a team and maintain lasting interpersonal relationships ;**
- **be active in the face of change and participate as a socially responsible actor.**

## YOUR BACKGROUND

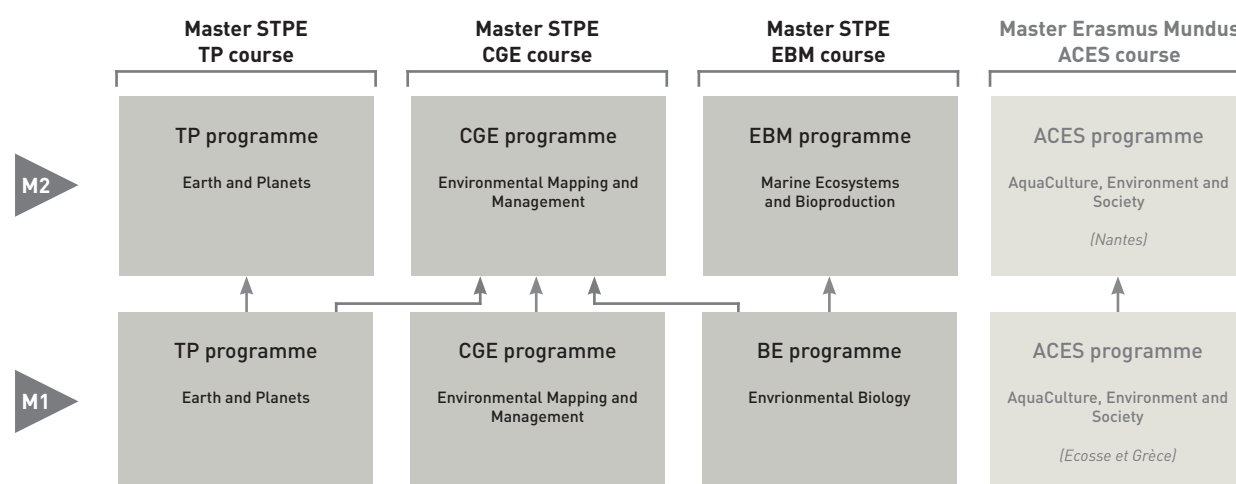
You would like to work as an engineer or a researcher in the fields of monitoring, management and valorization of the continental and marine environment; environmental biology; geology or planetology. You hold a Bachelor's Degree in Life, Earth, Planetary or Environmental Sciences; or you have another graduate degree (Mathematics, Physics, Chemistry, Biochemistry, etc.) but are motivated by these disciplines.

The Master in Earth, Planetary, and Environmental Sciences (STPE) proposes four programmes, whose range extends from planetology to the valorization of marine living resources: Earth and Planets (TP); Environmental Mapping and Management (CGE) ; Marine Ecosystems and Bioproduction (EBM); Aquaculture, Environment and Society (ACES).

This Master's degree is mainly based on the expertise of three research laboratories of the University of Nantes, associated in the Nantes-Atlantique Observatory of Universe Sciences OSUNA) : the Laboratory of Planetology and Geodynamics (LPG), the Sea-Molecules-Health (MMS) laboratory and the Littoral, Environment, Remote Sensing, and Geomatics (LETG) laboratory.

The Master is designed to offer you progressive specialization. In the first year (M1), you have the choice between three gateway streams : Earth and Planets (TP), Environmental Mapping and Management (CGE) or Environmental Biology (BE). You then pursue your training in one of the three programmes of M2: Earth and Planets (TP), Environmental Mapping and Management (CGE) or Marine Ecosystems and Bioproduction (EBM).

You also have the opportunity to apply for an Erasmus Mundus European programme: Aquaculture, Environment and Society (ACES), which is organized between three European universities: the University of the Highlands and Islands in Oban in Scotland (M1 Semester 1), the University of Heraklion in Crete (M1 Semester 2) and the University of Nantes (M2 Semester 1).



## YOUR PROFILE AFTER THE MASTER STPE :

### A RESEARCHER IN GEOLOGY AND PLANETOLOGY

The TP programme trains professionals capable of working, at an international level, in basic and applied research in geology and planetology. Additional skills in geomatics, remote sensing and quantitative data analysis will enable you to include the spatial and temporal dimensions of geological, geophysical and geochemical processes.

### A VERSATILE ENVIRONMENTAL OFFICER

The CGE programme trains professionals with a strong interdisciplinary vision of the environment, which includes its geological, biological, hydrological and anthropic components, in both the continental and marine sectors. This programme also has a strong component of data analysis methods and spatialization of information (geomatics, remote sensing). Depending on the gateway chosen in M1 and the options in M2, you can acquire a more specialized profile in geology, biology or geography. You will be able to join organizations carrying out the monitoring, management and development of the environment, either as an engineering officer or as a researcher(after a doctorate).

### AN EXPERT IN MARINE ECOSYSTEMS

The EBM programme trains professionals in the study of marine ecosystems and the valorization of marine organisms and substances with multidisciplinary knowledge. Additional skills in geomatics, remote sensing and quantitative data analysis will enable you to include the spatial and temporal dimensions of the distribution of resources and biological interactions between animal and plant species in the marine environment. You will be able to work in research (after a doctorate) as well as in agro-food and pharmaceutical production or the monitoring, management and valorization of the environment.

### A SPECIALIST IN SUSTAINABLE MARINE AQUACULTURE

The ACES international programme, taught in English, aims to train aquaculture professionals in the theoretical and practical knowledge required to develop a sustainable, competitive but environmentally friendly marine aquaculture. Lessons include the aquaculture of fish and bivalves, the exploitation of marine resources, and socio-economic interactions.

## YOUR SKILLS

(COMMON TO ALL MASTER GRADUATES)

- **You will explore with curiosity and critical thinking the various aspects of a scientific or technical problem in Earth, Planetary and Environmental Sciences, using existing knowledge, theories and know-how.**
- **You will plan, carry out, describe, analyze and interpret field observations, laboratory experiments and numerical or analogical modeling to answer scientific or technical questions in the Earth, Planetary and Environmental Sciences, qualitatively and quantitatively (sampling, measurement, statistics).**
- **You will combine qualitative and quantitative information, derived from the observation of natural systems, experimentation, modeling and consultation of scientific and technical literature, to ask and answer new questions in Earth, Planetary and Environmental Sciences.**
- **You will construct, formalize and express rigorously (using written, oral, graphic or mathematical language) questions, hypotheses, reasoning, models, observations, protocols, results, interpretations and conclusions in Earth, Planetary and Environmental Sciences.**
- **You will organize and join team projects to answer questions in Earth, Planetary and Environmental Sciences.**
- **You will include the notions of spatial variation, temporal evolution and interaction in natural and societal systems in the development, formalization and transmission of your reasoning.**

Depending on your course choice (TP, CGE, EBM or ACES), specialized subject skills will reinforce this foundation.

## WHY SHOULD YOU CHOOSE THIS MASTER ?

### INTERDISCIPLINARITY

The organization of the master and its courses allows you to specialize gradually and to obtain an interdisciplinary degree, much appreciated in the labor market.

The teaching team is a mixed group of research lecturers, research engineers and researchers from public and private organizations.

### PRACTICE-BASED TEACHING

Over the entire Master (M1 + M2), you will spend 7 months in professional placements. You will also participate in several (2 to 3) field studies, depending on your course options, and carry out a great deal of project work.

### EMPLOYMENT PROSPECTS

75% of graduates are employed after 18 months, and 90% are satisfied.

**A DETAILED DESCRIPTION IS AVAILABLE ON THE WEBSITE (PROGRAM, EVALUATION METHODS, ETC.) :**  
[www.univ-nantes.fr/sciences/masters](http://www.univ-nantes.fr/sciences/masters)

*Are you hesitating between several courses? Come and ask your questions on our Open Day.*



# YOUR OPPORTUNITIES AFTER THE MASTER STPE

## SECTORS

- Biology
- Ecology
- Aquaculture
- Earth Sciences
- Planetology

## POSITIONS

- **Engineer, geomatician, in charge of studies and projects** in environmental engineering and technical departments of public and private companies; administrations and local authorities involved in spatial planning, development and environmental monitoring (soil and water pollution, seismic risks, landslides, floods, environmental diagnosis, monitoring of fauna and flora, aquaculture).
- **Research engineer** in laboratories in geosciences, planetology, biology and geology of the environment or in the valorization of marine living resources.
- **Academic researcher** in laboratories in geosciences, planetology, biology and geology of the environment or in the valorization of marine living resources (after a PhD).

## WHY CHOOSE TO STUDY AT THE FACULTY OF FUNDAMENTAL AND APPLIED SCIENCES?

For the quality of its teaching, centered on learning, and its pedagogical support.

For the opportunities to continue your studies and prepare for a professional career.

For the advanced scientific research environment.

For a quality campus, with a dynamic associative, cultural and sports life.



## WOULD YOU LIKE TO KNOW MORE ?

### • ABOUT THE MASTER

[www.univ-nantes.fr/master-sciences-terre-planetes-envir](http://www.univ-nantes.fr/master-sciences-terre-planetes-envir)

Information about the entire Master STPE :

Olivier BOURGEOIS

[olivier.bourgeois@univ-nantes.fr](mailto:olivier.bourgeois@univ-nantes.fr)

Specific information on the ACES programme :

Laurent BARILLÉ and Peter BENINGER

[laurent.barille@univ-nantes.fr](mailto:laurent.barille@univ-nantes.fr)

[peter.beninger@univ-nantes.fr](mailto:peter.beninger@univ-nantes.fr)

[www.emm-aces.org](http://www.emm-aces.org)

### • ABOUT BLOCK RELEASE TRAINING

[www.univ-nantes.fr/focal](http://www.univ-nantes.fr/focal)

### • ABOUT ENROLLING

[www.univ-nantes.fr/sciences/inscriptions](http://www.univ-nantes.fr/sciences/inscriptions)

### • ABOUT FINANCING YOUR STUDIES AND HOUSING

[www.crous-nantes.fr](http://www.crous-nantes.fr)

### Faculty of Fundamental and Applied Sciences

2, rue de la Houssinière  
BP 92208  
44322 Nantes Cedex 3

Tél. : +33 (0)2 51 12 52 12

[www.univ-nantes.fr/sciences](http://www.univ-nantes.fr/sciences)



Faculté des Sciences et des Techniques - Université de Nantes



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