MASTER'S DEGREE IN EARTH AND PLANETARY SCIENCE, ENVIRONMENT

UNIVERSITÉ PSL

Made possible by a collaboration between Ecole Normale Supérieure–PSL, MINES ParisTech–PSL, Observatoire de Paris–PSL, EPHE–PSL and ESPCI ParisTech–PSL, the Master's degree in Earth and Planetary Science, Environment from Université PSL offers state-of-the-art training in the fields of earth science, meteorology, oceanography, climate science and biogeoscience, as well as their applications for environmental science both on Earth and in space. The curriculum offers fundamental knowledge about how matter and energy are exchanged and interface between those containers. In addition, it addresses critical societal challenges ranging from natural hazards (earthquakes, flooding, cyclones, space weather) to climate change, resources (water, energy, minerals) and pollution of our soil, water and atmosphere.

MAIN ASSETS

— **An innovative approach** built around a comprehensive perspective on "Planet Earth" (solid earth, ocean/atmosphere, space environment, interfaces).

— **A "learn by doing" approach to research,** with two lengthy laboratory internships, one in each year of the program, in France and abroad.

— **Unprecedented collaboration between some of the most prestigious institutions in France** in the area of planetary science.

— **Immersion in an advanced international research environment,** working closely with major laboratories and scientific innovation, notably through the program's **affiliation with PSL's graduate program in Earth Science and Biodiversity**.

— **Individualized training** that draws on a wide range of optional courses, allowing students to define their own disciplinary focus in conjunction with their mentor.

— **A flexible format** in which courses can be staggered over the entire two-year period, as at most of the world's top-tier universities.

— **A curriculum that includes both a scientific and** social component and is attentive to weighty topics such as climate change, mitigation of natural risks, sustainable natural resources and the energy transition.

— **An international study environment,** with some courses taught in English.

CAREER OPPORTUNITIES

— Doctoral dissertation leading to a career in research and higher education.

— A career with large companies or major government institutions.

English track

PSL UNIVERSITÉ PARIS

CURRICULUM

Master's Year 1 (M1; 60 ECTS)

One academic track is available: Planetary Science

Required core curriculum modules
— Radiation and Remote Sensing
— Inverse Methods
— Digital Methods
— Geostatistics

Optional courses
Students choose five to seven modules, including at least one per discipline:
— Ocean and Atmospheric Science (7 modules)
— Interfaces (11 modules)
— Solid-Earth Science (9 modules)
— Society (6 modules)

Two research internships
— Fall internship
— Research internship outside France (5 months)

Master's Year 2 (M2; 60 ECTS)

One academic track is available: Planetary Science

Required core curriculum modules
— Statistical Methodology for Large Datasets
— Practicum in Geophysical Modeling
— Nonlinear Dynamic Systems
— Digital Geosciences Project

Optional courses
Students choose five to seven modules:
— Ocean and Atmospheric Science (7 modules)
— Interfaces (11 modules)
— Solid-Earth Science (9 modules)
— Society (6 modules)

Two research internships
— Fall field internship in France
— Laboratory research internship (five months in France or abroad)

LEARNING OUTCOMES

The Master's degree provides students with the quantitative and disciplinary foundation they need in order to assume an active role in future geoscientific research and contribute to industrial innovation and R&D. It is designed to promote open-minded intellectual development and an interdisciplinary approach, and includes numerous activities in the field as well as multiple research internships. The training offers the necessary grounding in the earth sciences and provides participants with the disciplinary knowledge to pursue very high-level research in their chosen specialization or investigate the fields of the future in industry. It produces students with the ability to tackle weighty topics in all their complexity, including climate change, mitigation of natural risks, sustainable natural resources and the energy transition.

SUPERVISION

Throughout their course of study, students will be individually tutored by a researcher from one of our partner institutions, who will help them design their own learning path. Classes are taught in person, with a major research component. The course offerings include a wide range of optional courses outside the core curriculum; as a result, students can design their own thematic or disciplinary focus by choosing electives after discussion with, and with the approval of, their mentor.

ADMISSION

Prerequisites
Master's Year 1: A Bachelor's degree in earth science, physics or chemistry or 180 ECTS credits from a scientific curriculum of Bachelor's degree or equivalent level, including students from engineering schools.
Master's Year 2: Master's Year 1 or the equivalent in the disciplines cited above.
Selection process
Based on an application and interview.

DIPLOMA DELIVERED

National Master's degree conferred by Université PSL and prepared at ENS–PSL.

TEACHING LOCATIONS

Classes are held in the heart of Paris on the campuses of École Normale Supérieure–PSL and the PSL schools involved in the Master's program.

More information
psl.eu/en/education/masters-degree-planetary-science

Contact
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DIPLÔME NATIONAL DE MASTER CONTRÔLÉ PAR L'ÉTAT

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