



The earth's
crust: evolution
shared by living
beings and the
mineral world

master of science (MSc) in biogeosciences

GENERAL OUTLINE

Objectives

The Master of Sciences in Biogeosciences is the result of the integration of two fields of natural sciences: biology and geology. It reflects the emergence of new fields of research in the many areas of contact between these two disciplines. Its main objective is to train students in new trans-thematic disciplines based on an integrated approach to both natural and anthropised environments.

Skills development and career prospects

University studies develop, in addition to specific academic skills, a great many transverse skills such as: oral and written communication, critical, analytical and summarising faculties, abilities in research, the learning and transmission of knowledge, independence and the ability to make judgements in the field of specialisation and overlapping areas.

This panoply of skills, combined with specialist knowledge acquired in the course of studies, is excellent preparation for a wide range of employment opportunities, notably in the following fields:

- Research and development in environmental sciences
- Federal and cantonal administrations
- Non governmental organisations
- Consulting firms
- Conservation and management of nature
- Conservation and management of soils
- Environmental health
- Geologic materials industry
- Academic careers

GENERAL INFORMATION

Organisers

Faculty of Geosciences and Environment of the University of Lausanne
Faculty of Science of the University of Neuchâtel

Degree awarded

Master of Science (MSc)
in Biogeosciences

ECTS credits

120

Duration

4 semesters

Teaching language

French

Enrolment

The candidate's application must be submitted to the Admissions Department before the final date:
www.unil.ch/immat

Contact

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EDUCATIONAL CONTENT

Description

The objective of this Master's degree is to train high-level scientists in the field of integrated natural sciences or Biogeosciences. It aims, through training based on the most modern techniques, to provide the essential knowledge and tools necessary for the discovery, understanding and management of natural environments in perpetual evolution on scales that are variable in time and space.

The degree course is organised as five blocks: four teaching blocks and one research block. The teaching activity is divided into three parts: one third of ex-cathedra courses, one third of practical work, and one third of field internships. The four teaching blocks are composed as follows:

- Block A teaches the basic knowledge required in relation to the discipline originally studied by each student. If the student has a Bachelor's degree in Biology, then the courses will focus on the complementary teaching of Geology, and vice versa for holders of a Bachelor degree in Geology.
- Block B teaches the analytical and technical basics of laboratory and field work, as well as the use of tools for spatial modelling and multivariate statistics.
- Block C provides the main training in Biogeosciences. After an introduction to the concepts relevant to Biogeosciences, the training focuses on the geobiosphere and ecosystems. This is followed by subjects related to surface biogeochemistry and the major elementary cycles, such as the carbon, phosphorus or iron cycles. The evolution of organic matter is approached from the standpoint of both biological sciences (the role of fauna, flora and microflora) and geochemistry (the fate and monitoring of organic matter through isotope methods, for example). A module dedicated to the critical zone underlines the importance of the interfaces between living beings and minerals. Virtual campus sessions and free-choice courses complete this block.
- Block D offers a choice of one of three specialised teaching options: «Soil and Vegetation», «Geobiosphere», or «Geomicrobiology».

Examinations

Subjects taught for the master's degree are divided into two series. Series 1 consists of core courses and specialised courses in the chosen orientation. A pass is obtained if the student earns a total of 60 credits. Series 2 consists of the master's degree work.

The examinations and master's degree work are successfully completed if the student obtains a mark of 4 or higher for each examination and the master's degree work.

Mobility

Subject to the prior agreement of the mobility Commission, students enrolled on a Master's cycle may study for one or two semesters in an institution recognised by UNIL or UNINE while continuing to be registered with the University of Lausanne.

SYLLABUS

1st–2nd semesters

Basic teaching courses

- Block A
- 6 ECTS credits**

Common trunk core courses

- Block B (11 ECTS credits)
 - Block C (31 ECTS credits)
- 42 ECTS credits**

Specialised courses (free choice)

- Block D
- 12 ECTS credits**

3rd–4th semesters

Block E: Research work (Master's dissertation)

60 ECTS credits

PRACTICAL INFORMATION

Admission requirements

Candidates must be holders of a Bachelor of Science in Geosciences and Environment, or of a Bachelor of Science in Biology. Another degree or academic title may be judged equivalent and give access to the master's degree course, with or without further conditions.

Other useful information

Web site of the Master of Science in Biogeosciences:
www.biogeosciences.ch
Web site of the Faculty of Geosciences and Environment:
www.unil.ch/gse

Final enrolment date

30 April

Candidates needing a visa to study in Switzerland: 28 February. This particular time limit is applicable to enrolment at the UNIL only.

Start of courses

mid-September

Part-time Master's degree

See Directive 3.12:
www.unil.ch/interne/page44629.html#3

Academic calendar

www.unil.ch/central/page4804.html

General information on studies, career prospects and guidance

Guidance and advisory service:
www.unil.ch/soc

Accommodation and financial assistance

Office for socio-cultural affairs:
www.unil.ch/sasc

International students

www.unil.ch/international

Study abroad possibilities

www.unil.ch/echanges

