Earth Sciences

Degree conferred
Bachelor of Science in Earth Sciences

Languages of study
Study in French and German

Commencement of studies
Commencement of studies only in the Autumn Semester (September)

Access to further studies
Master

For those who are interested in the structure and development of the earth, earth sciences is exactly the right subject to study. Students experience a virtual journey through time and space as they trace the development of the earth, the atmosphere and the oceans.
The bachelor programme places its main focus on the following questions: How did life develop, and under what environmental conditions (sedimentology, palaeontology and palaeoecology)? How do mountains and oceans form and disappear (tectonics)? What happens at the earth's interior (petrology, volcanology, geophysics)? Apart from these fundamental issues, there is also ample opportunity for practical applications, e.g. assessing building ground, processing raw materials or detecting natural hazards.
Earth sciences at the University of Fribourg places particular value on students acquiring personal experience of what they have learned. Accordingly, the study programme includes field trips and excursions (at home and abroad) and an introduction to the scientific use of technical instruments.

Profile of the study programme

A journey through time and space
Geology, and in the wider context earth sciences, is concerned with the structure, composition, and past and future development of the earth. Students of geology are transported on a fascinating journey through time and space. They trace the development of the earth, the atmosphere and the oceans, from the very beginnings 4 billion years ago to the present day. A key stop on this journey is the origin and evolution of life. Students follow processes which on the one hand take place on an atomic scale and on the other cause the formation of entire mountain ranges. Knowledge of the structure and the history of the earth provides students with the necessary tools to make predictions about the future development of our planet.

Fribourg profile
The study of earth sciences at our university covers a very broad spectrum. The bachelor programme introduces all the key areas of earth sciences. Focal points here are the development of life and environmental conditions on the earth (sedimentology, palaeontology and palaeoecology), the dynamics of the earth's surface, which cause the formation and disappearance of mountains and oceans (tectonics), and the dynamics of the earth's interior, which are responsible for volcanism and the occurrence of earthquakes (petrology, volcanology, geophysics). Apart from these fundamental aspects of earth sciences, the curriculum also provides plenty of opportunities for the practical application of geology, such as assessing building land (geology for engineers), locating and processing raw materials, or detecting natural hazards and initiating countermeasures. Special emphasis is placed on on-site work at the study-object, i.e. students put what they have learned in lectures into practice on field trips and excursions to nearby areas, as well as to more distant locations. Besides fieldwork, practical training also includes an introduction to the key analytical methods and instruments used in earth sciences. Earth sciences is closely linked to geography, and together they form the Department of Geosciences. This gives students unrestricted access to lectures in fields related to earth sciences such as glaciology or geomorphology in the geography subsidiary programme.

Academic and professional openings
A bachelor degree is the key to a master degree. A master degree in Earth Sciences opens the door to a wide range of employers. Some graduates work as geologists on construction sites, such as the new Gotthard base tunnel, or assess environmental risks at contaminated sites. Others are employed by companies active in the mining industry. You will find employment possibilities with federal and cantonal agencies as a specialist for environmental hazards. You will be able to evaluate the threats arising from earthquakes, landslides, rockfalls and floods and launch the appropriate countermeasures. If you feel drawn to research, you can continue your studies by pursuing a doctoral programme. With a Ph.D. you can continue your career in the academic world, or work in a research laboratory in industry.

Studies organisation

Structure of studies

150 ECTS credits + 30 ECTS credits in a minor study programme freely chosen, 6 semesters

Curriculum

http://studies.unifr.ch/go/mjkY5 *(French)*
http://studies.unifr.ch/go/0fTFn *(German)*

Admission

The following **Swiss school-leaving certificates** grant **admission to bachelor programmes** at the University of Fribourg:

- Swiss academic Maturity Certificate
- Federal vocational or specialised Baccalaureate + supplementary examination of the Swiss Maturity Commission (passerelle)

- Bachelor Degree from a Swiss university, from an accredited Swiss university of applied sciences (HES/FH) or from a Swiss university of teacher education (HEP/PH)

A **complete list of all further recognised Swiss school-leaving certificates** is to be found on the webpages of swissuniversities (*in French and German only*): https://studies.unifr.ch/go/fr-admission-swisscertificates; https://studies.unifr.ch/go/de-admission-swisscertificates
Foreign upper secondary school-leaving certificates are recognised only if they correspond substantially to the Swiss Maturity Certificate. They must qualify as general education. Foreign school-leaving certificates are considered to be general education if, among other things, the last three years of schooling include at least six general education subjects, independent from each other, in accordance with the following list:

1. Language of instruction (at the school)
2. Second language (a foreign language)
3. Mathematics
4. Natural sciences (biology or chemistry or physics)
5. Humanities and social sciences (geography or history or economics/law)
6. Elective (computer sciences or philosophy or an additional language or an additional subject from category 4 or 5)

The general **admission** requirements to the **bachelor programmes** at the University of Fribourg for holders of foreign school-leaving certificates as well as the **admission requirements for individual countries** are to be found on the webpages of swissuniversities: https://studies.unifr.ch/go/en-admission-countries
In addition, applicants with foreign school-leaving certificates must present **proof of sufficient language skills in French or German**.
All guidelines are available at *(only in French and German)*: https://studies.unifr.ch/go/adm-guidelines

The assessment of foreign school-leaving certificates is based on the «Recommendations for the Assessment of Foreign Upper Secondary School-Leaving Certificates» adopted by the Chamber of universities of swissuniversities on 21.11.2024 (https://studies.unifr.ch/go/swissuniversities24fr; https://studies.unifr.ch/go/swissuniversities24de). The admission requirements are valid for the respective academic year. The Rectorat of the University of Fribourg reserves the right to change these requirements at any time.

Alternatives

Also offered as a minor study programme (60/30 ECTS credits).

Contact

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