Curriculum
The Universities of Bern and Fribourg offer an MSc degree in Earth Sciences. One of the following five special qualifications within this programme may be chosen:

- Earth and Life Evolution
- Earth Materials
- Environmental & Resource Geochemistry
- Geology
- Pure and Applied Quaternary Science

All MSc candidates complete a course module entitled Dynamic Alps, which serves as a common basis for all the specialities. Each speciality consists of a set of mandatory courses, a set of elective courses and a thesis project. Thesis work is spread over all 4 semesters of the degree programme and the topic of the thesis lies within the chosen specialty.

Special qualifications

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Description</th>
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<tbody>
<tr>
<td>Earth and Life Evolution</td>
<td>The evolution of the geosphere and that of the biosphere – linked by a common theme: the processes and the unique history that have produced our life-sustaining planet.</td>
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<tr>
<td>Earth Materials</td>
<td>Selected topics in mineralogy and petrology, both pure and applied aspects, e.g. properties and uses of clay minerals, zeolites in nature and industry, stability of minerals.</td>
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<tr>
<td>Environmental &amp; Resource Geochemistry</td>
<td>Processes of rock–water interaction relevant to groundwater quality, remediation of contaminated sites, deep geological disposal of radioactive and toxic wastes, genesis and exploration of mineral resources, and development of secondary resources.</td>
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<tr>
<td>Geology</td>
<td>Structures and deformation of the lithosphere and of rocks, including the metamorphic and tectonic development of orogens, interaction between Earth internal and surface processes.</td>
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<tr>
<td>Pure and Applied Quaternary Science</td>
<td>Surface processes in orogens and in their forelands, glaciology, paleoclimate research, dating, humans as geological agents, engineering geology.</td>
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</tbody>
</table>

Weighting of modules

<table>
<thead>
<tr>
<th>Modul A</th>
<th>Modul B</th>
<th>Modul C</th>
<th>Modul D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st semester</td>
<td>2nd semester</td>
<td>3rd semester</td>
<td>4th semester</td>
</tr>
<tr>
<td>Mandatory Courses</td>
<td>Specialty Courses</td>
<td>Elective Courses</td>
<td>Research Thesis</td>
</tr>
<tr>
<td>6 EC</td>
<td>30 EC</td>
<td>24 EC</td>
<td>60 EC</td>
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</tbody>
</table>

Eligibility and Fees

Students with a university-level BSc in Earth Sciences are eligible for the MSc degree. Students with a BSc in a related field (e.g. physical geography, physics, chemistry, biology) may also be eligible, depending on the specific curriculum covered in their BSc coursework.

Fees (for the entire MSc course)
- Bern: CHF 3236.-
- Fribourg: CHF 2620.- for Swiss students,
- 3220.- for foreign students

BeFri is the acronym for the cooperative research and teaching network between the Universities of Bern and Fribourg. All lectures given in English.
Your new career?

Environmental and resource geochemistry has become a large sector of professional activity for Earth Science graduates. Industry, government bodies and research institutes throughout the world require scientific experts in fields such as groundwater quality, geological disposal of toxic or radioactive wastes, clean-up of polluted industrial or mining sites, assessment of and exploration for mineral and energy resources, development of alternative resources from recycled industrial and construction waste, and prediction of the long-term stability of cement in contact with groundwater.

Key understanding

Problems and solutions in environmental and resource geochemistry are best approached with an understanding of “water-rock interaction” — a recognized field of excellence at the Institute of Geological Sciences, University of Bern.

Curriculum highlights

- New field observation and sampling techniques
- Hands-on analytical work
- Insight through geochemical modelling
- Real-time experiments in water-rock interaction
- Solid theoretical foundation
- Direct contact with active environmental projects
- Critical problem-evaluation and data interpretation
- Industry-relevant case studies

Professional training

A 120 ECTS MSc curriculum has been designed to provide both the breadth and the depth of understanding demanded by employers in this sector. Equal weight is given to coursework and to parallel thesis research, leading to a high level of professional know-how.

Information

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More information: www.geo.unibe.ch/master or e-mail: master@geo.unibe.ch