



(A) GENERAL DATA

Title	Master's Programme in Geology
Degree	Geologist
Type	Degree program
Level	Master level
Accreditation number	FNYF/168-3/2016
Faculty	Faculty of Science
Institute	Institute of Geography and Earth Sciences
Center	Center of Earth Sciences
Department(s)	Department of Physical and Applied Geology
Language	English
Duration	4 semester
ECTS credits	120
Place	ELTE Lágymányos Campus
Minimum number of new students¹	6
Maximum number of new students	12

¹ If the number of admitted students does not reach threshold the program may be cancelled.



(B) PROGRAM CONTENT

Short description:

The curriculum is designed to provide advanced training in geology, applicable to geological problem solving. Our graduates have a solid foundation of knowledge in the different core disciplines of geology sciences (mineralogy, petrology, geochemistry, and paleontology), complemented with advanced skills through specialized studies in selected areas. The field component includes a three-week geological mapping field school. The program also has an emphasis on practical courses related to mineral exploration, petroleum geology, hydrogeology and environmental geology. The specialization in petroleum geology and/or hydrogeology provides in-depth training for future specialists in these fields. The degree program prepares both for continuing studies after admission to a doctoral program and work as a geologist primarily in the petroleum industry, in hydrogeology, or in related jobs in the public sector.

Strength of program:

The Geology MSc program is taught by highly qualified faculty members of the four departments (Physical and Applied Geology, Mineralogy, Petrology and Geochemistry, and Paleontology). The program director is a member of the Hungarian Academy of Sciences, six professors hold the doctoral degree of the Academy, other teaching faculty members hold PhD degrees. Three research units, specialized in topics of geology and paleontology, are funded by the Hungarian Academy of Sciences, and hosted by Institute of Geography and Earth Sciences. A highly diverse research portfolio of our staff is focused on (but not restricted to) the geology of Hungary, the Pannonian Basin and the neighboring areas, its hydrocarbon and groundwater systems, mineral resources, as well as basic research in mineralogy, geochemistry, sedimentology, stratigraphy and paleontology. Results of this research are regularly published in leading international journals, and MSc student thesis projects are often integrated into these larger projects.



(C) STRUCTURE

This degree program consists of four semesters. Of the total of 120 credits required, 30 credits are earned for courses in general geological subjects, 30 credits for advanced courses in petroleum and hydrogeology, 30 credits for courses in other geological disciplines, and 30 credits for directed studies towards a thesis. The degree is awarded after completion of a project-based thesis and a successful final examination. The current list of courses is available at <http://www.geology.elte.hu/index.php/hallgatoknak/msc/courses-in-english>.

Compulsory courses

[Rock forming minerals](#)

[Paleobiology](#)

[Petrographic analysis](#)

[Construction of geological maps and sections](#)

[Geological mapping field school](#)

[Geological mapping field school report](#)

[Paleontological analyses](#)

[Integrated stratigraphic analysis](#)

[Structural geology](#)

[Sedimentology](#)

[Geology of Hungary and the surrounding regions](#)

[Introduction to geochemical analytical techniques](#)

[Rock-water interactions in the rock record](#)

[Geomathematics](#)

[Quaternary geology](#)

[Directed studies–Thesis project 1](#)

[Directed studies–Thesis project 2](#)

Core elective courses for the specialization - Geology and Paleontology

[Applied micropaleontology](#)



[Applied micropaleontology practical](#)

[Biostratigraphy](#)

[Paleobiology in sauropsid reptiles](#)

[Paleobiogeography](#)

[Characteristic fossil assemblages of the Carpathian region](#)

[Characteristic fossil assemblages of the Carpathian region \(practical\)](#)

[Natural hazards](#)

[Subsurface geological mapping](#)

[Diagenesis](#)

[Facies analysis of clastic rocks](#)

[Correlation of cores, well logs and seismic data](#)

[Regional geology of the world](#)

[Digital techniques in seismic and well-log interpretation](#)

[Geochronological methods](#)

[Geodynamics of the Pannonian Basin](#)

[Seismic interpretation](#)

[Major events in Earth history](#)

[Facies analysis of clastic rocks](#)

Core elective courses for the specialization - Hydrogeology, Petroleum Geology and Environmental Geology

[Hydrogeology](#)

[Data processing and analysis in hydrogeology](#)

[Organic geochemistry](#)

[Hydrocarbon exploration, production, field development](#)

[Subsurface geological mapping](#)

[Correlation of cores, well logs and seismic data](#)

[Seismic interpretation](#)

[Geodynamics of the Pannonian Basin](#)



[Digital techniques in seismic and well-log interpretation](#)

[Basin analysis and petroleum systems](#)

[Groundwater flow in drainage basins](#)

[Groundwater flow in drainage basins practical](#)

[Field practice in hydrogeology](#)

[Petroleum hydrogeology](#)

[Petroleum hydrogeology practical](#)

[Environmental isotopes](#)

[Facies analysis of clastic rocks](#)

[Facies analysis of carbonates](#)

[Diagenesis](#)

[Facies analysis of clastic rocks](#)

**Core elective courses for the specialization - Mineralogy, Petrology,
Geochemistry, Mineral Resources and Archeometry**

[Isotope geochronology](#)

[Environmental isotope geochemistry](#)

[Environmental geochemistry](#)

[Magmatism in extensional basins](#)

[Practical micromineralogy](#)

[Archeometry of stone tools, ceramics and metals](#)

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[Examination of geological field samples](#)

[Petrography and petrogenesis of igneous and metamorphic rocks](#)

[Volcanology](#)

[Sedimentary mineral resources](#)

[Mineral exploration](#)

[Applied crystal chemistry for geologists](#)

[Instrumental analytical techniques in geology 1](#)



[Instrumental analytical techniques in geology 2](#)

[Instrumental analytical techniques in geology 2 \(advanced\)](#)

[Instrumental analytical techniques in geology 2 \(basic\)](#)

[Field studies of magmatic and metamorphic minerals, rocks and mineral deposits](#)

[Mineral deposits 1 \(magmatic, metamorphic, hydrothermal\)](#)

[Mineral deposits 1 \(magmatic, metamorphic, hydrothermal\) practical](#)

[Fluid inclusion studies](#)

Optional elective courses

[Environmental history](#)

[Mesozoic foraminifera studies](#)

[Paleontology of the Mollusca](#)

[Modern carbonate sedimentary environments](#)

[Complex geophysical and geological interpretation practical](#)

[Oceanography \(Marine Sciences\)](#)

[English for geoscientists](#)

[Unconformity-related phenomena](#)

[Hypogenic caves in Hungary](#)

[Hypogenic caves in Hungary field practical](#)

[Geology of North America](#)

[Limnology](#)

[Karst hydrogeology](#)

[Well logging](#)

[Well-log interpretation practical](#)

[Thermodynamics in geochemistry](#)

[Medical geochemistry](#)

[Nuclear analytical methods and their application in Earth sciences and archeometry 1](#)

[Nuclear analytical methods and their application in Earth sciences and archeometry 2](#)



[Igneous petrogenesis](#)

[Metamorphic petrology and petrogenesis](#)

[Advanced petrography](#)

[Geochemical calculations](#)

[Petrology of the Earth's interior](#)

[Geology of bauxites](#)

[Hydrothermal systems: mineralogy and geochemistry](#)

[Soil mineralogy](#)

[Clay minerals and their transformation processes](#)

[Structural spectroscopies in geology](#)

[Structural spectroscopies in geology](#)

[X-ray diffraction in geology](#)

[X-ray diffraction in geology](#)

[Electron optical methods in geology](#)

[Practical transmission electron microscopy](#)



(D) CAREER

Career opportunities:

Our graduates are best trained to seek employment in the petroleum industry, with groundwater and geothermal companies, or in the public sector, including universities, geological surveys, and research institutions. Their broad-based geological knowledge will prepare them to work in teams together with geophysicists and other geoscientists. As all courses are offered in English, prospective employers include those located in the graduate's home country as well as global, multinational companies.

Job examples:

Petroleum exploration: Our graduates find project geologist positions in the G & G (Geology & Geophysics) sector of the upstream segment of oil companies.

Hydrogeology: Our graduates find jobs in the industry to explore and manage groundwater resources.

Natural resources administration: Our graduates can fill positions in national geological surveys and other government offices responsible for management of natural resources.

Geoscience research: Our graduates can apply to PhD schools at research universities and continue their education towards successful careers in academic research in Earth sciences.



(E) ADMISSIONS FOR THE ACADEMIC YEAR 2017/2018

TUITION AND OTHER FEES

	EU/EEA students	non-EU/EEA students
Tuition fee/semester	4190 (EUR)*	4190 (EUR)*
Application fee	160 (EUR)	160 (EUR)
Registration fee	60 (EUR)	60 (EUR)

* It is possible to apply for scholarship to reduce tuition fee.

Offered for the academic year 2017/2018?	YES
Deadline for applications – September intake	30 April 2017
Is there a February intake?	NO

Admission requirements – Language requirements:

Applicants should have an appropriate command of English, demonstrated either by IELTS score 5.0 or higher, TOEFL ITP score 500 or higher, or TOEFL IBT score 80 or higher.

Admission requirements – Documents to submit with application:

- ✓ Bachelor-level degree
- ✓ Transcript of records
- ✓ CV
- ✓ Motivation letter
- ✓ Letter of recommendation
- ✓ Application form
- ✓ Copy of the main pages of the passport (needs to be valid)
- ✓ Passport photo
- ✓ Copy of application fee transfer
- ✓ Other: certificate of English language skills



Application procedure:

Applicants should fill in the online application form of Eötvös Loránd University at <https://registration.elte.hu>. Then they should send the required application documents, including proof of the application fee payment, to the international coordinator of the faculty by email.

Procedure of the entrance examination:

Proper application packages will be forwarded to the program coordinator. In lieu of an entrance exam, applicants whose previous studies meet the entry requirements will be interviewed over Skype.



(F) CONTACT

Program leader

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International program coordinator

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