GEOLOGY

Programme type	Master's studies (university)
Field of study	Geology
Study area	Physical Sciences
Degree	Master in Physical Sciences
Duration	2 years (4 semesters)
Workload	120 ECTS credits
Language of instruction	English
Location	Vilnius, Lithuania
Starting date	1st of September

PROGRAMME DESCRIPTION

The objective

Programme is designed to prepare the highly qualified universal Geologists professionals, whose intellectual and practical skills match to the requirements of modern Geosciences and knowledge-based technologies. The graduates will be able: to demonstrate and apply a comprehensive geological knowledge and understanding and effectively apply it in scientific investigations and practical activities; to analyze critically and systematically evaluate information and data; to develop and implement the research innovations in areas related to the Geosciences in complex environmental research and various economic development areas; independently solve the geological problems in the context of modern science achievements; compete in the national and international labor market.

The aims of the programme are:

- Pursue advanced study and original research in one or more areas of geology, hydrogeology and engineering geology.
- Eliminate deficiencies in their geological, hydrogeological and engineering geological education.
- Prepare for employment in the geological sciences or enrolment in a doctoral program.

Career opportunities

The graduate from the Programme is equipped with knowledge of essential principles of interactions between different geological processes and geological study objects, is able to evaluate the consequences of geological processes in the changing geo-environment. The Graduate of the Programme is able to pursue a career at enterprises, research, and state institutions dealing with scientific and practical geological activities and investigations, exploration of natural resources, environmental research, regulation, exploitation and protection of underground resources, territorial planning; to continue studies of higher (Doctoral) level in Geology and the other natural sciences in Lithuania and abroad. The acquired knowledge, cognitive, practical and transitional skills provide sufficient background for further studies for of scientific specialization, in the sphere of business, management and other.

KEY LEARNING OUTCOMES

- To acquire knowledge and understanding in the different fields and levels of Geology, Hydrogeology and Engineering Geology.
- To acquire/strengthen cognitive skills to recognize the regularities the evolution of geological environment and geological processes, their interface with human activity; define and determine geological problems and implement a strategy for solving problems in Earth sciences
- To acquire/strengthen practical skills, abilities which are required to successful practical activity and application of acquired knowledge in seeking of practical objectives, i.e. to be able to formulate research aim, objectives and hypotheses, to create and apply methodology, to use research skills in laboratory and communication.
- To acquire/strengthen transferable skills including but not limiting to ability for abstract and analytical thinking, ability to plan and manage time and to take initiative, ability to find necessary information and to evaluate it critically and adequately, ability to apply knowledge in practical situations and to design research projects, ability to work in a team, to initiate discussion and to present joint results.

COURSE INFORMATION

The programme has the following structure:

Course Type	1st Semester	2nd Semester	3rd Semester	4th Semester
Compulsory Courses	Research work project (10 ECTS)	**Specialization of Geology** Rock investigation methods (10 ECTS)	**Specialization of Geology** Theoretical and applied stratigraphy (5 ECTS)	Research work project (10 ECTS)
		Sequence stratigraphy (5 ECTS)	Integrated interpretation of geophysical data for oil and gas geology (5 ECTS)	Master Thesis (20 ECTS)
		Practice in scientific research (10 ECTS)	Quaternary interglacial environments (5 ECTS)	
		Specialization of Hydrogeology and engineering geology Geotechnical design (5 ECTS)	Research work project (10 ECTS)	
		Regional hydrogeology (5 ECTS)	**Specialization of Hydrogeology and engineering geology** Environmental Protection of the Baltic Sea Basin (5 ECTS)	

		Hydrogeological modelling (5 ECTS)	Slope stability (5 ECTS)	
		Practice in scientific research (10 ECTS)	Geotechnics of Baltic States (5 ECTS)	
			Research work project (10 ECTS)	
Elective Courses	Applied petrology (5 ECTS)	Petroleum geology (5 ECTS)	Paleontological methods (5 ECTS)	
	Geodynamics and sedimentary basin analysis (5 ECTS)	Special laboratory hydrogeochemical research (5 ECTS)	Methodology in engineering geology investigations (5 ECTS)	
	Glacial geology (5 ECTS)			
	Engineering geology of urban areas (5 ECTS)			
	Rock mechanics (5 ECTS)			
	Hydrosphere cycles and zonalities investigations (5 ECTS)			

GRADUATION REQUIREMENTS

After successful completion of all Master level courses and defence of Master thesis, each student will receive a Master of Geology qualification degree.

EXAMINATION AND ASSESSMENT REGULATIONS

The main form of assessment is an examination. Every course unit is concluded with either a written or written-oral examination or pass/fail assessment. Student's knowledge and general performance during the examination are assessed by using the grading scale from 1 (very poor) to 10 (excellent).

ADMISSION REQUIREMENTS AND SELECTION CRITERIA

Bachelor's degree or its equivalent in study areas such as Geology, Physical Sciences, Engineering and Technological Sciences, Life Sciences, Social Sciences in History and Archeology;
English language proficiency – the level not lower than B2 (following the Common European Framework of Reference for Languages (CEFR).

Academic contact	Admission contact
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