SOFIA UNIVERSITY ST. KLIMENY OHRIDSKI

FACULTY:

CURRICULUM

Approved by: .....

Approved by the Academic Council with Record of Proceedings
№ ...6... / ...25.03.2026г.

Professional Field:

Educational and Qualification Degree: „Master"

Area of Study: Earth Sciences

G	G	B	2	7	0	1	2	6

/Master's Degree Program: Applied Economic Geology

Form of Study: Full time
Length of Study (number of weeks*/-): 3 (three) Semesters, 45 weeks

Professional Qualification: Master of Applied Economic Geology

Qualification Description

Master's Degree Program: Applied Economic Geology

1. Aims and Educational Objectives

The Master's Program "Applied Economic Geology" is offered within the professional field 4.4. Earth Sciences and leads to the award of the Master's degree. The duration of the program is three semesters and comprises a total workload of 90 ECTS credits. Graduation is achieved through the preparation and public defense of a Master's thesis.
Admission is based on submitted documents. Applicants must hold a Bachelor's degree in Geology or in a closely related field within Earth Sciences. Applicants are required to demonstrate good command of English, sufficient for full participation in the academic process, as the program is delivered entirely in English. The number of admitted students is determined in accordance with the officially approved capacity of the program and the decisions of the competent academic authorities.
The Master's Program in Applied Economic Geology has a strongly practice-oriented and professionally focused character. It is designed to prepare graduates for active participation in mineral exploration, investigation and preliminary resource evaluation within a real professional environment. The program is aligned with contemporary international practices in the mineral resources sector and aims to integrate academic knowledge with industry requirements.
Its primary objective is to develop practical skills for working with real geological data, analyzing results from field and laboratory investigations, and contributing to the assessment of the resource potential of specific exploration targets. The program fosters critical interpretation, evidence-based decision-making and the ability to operate effectively in an international professional context.

2. Description of the educational content (knowledge and skills required for a successful professional realization; general and theoretical background, specific areas of study, etc.)

The program combines theoretical modules with intensive practical training, including fieldwork, individual research assignments and project-based tasks developed from real case studies. A key component of the program is cooperation with exploration and mining companies, which enables part of the training to be conducted in an authentic working environment and provides access to real datasets from ongoing exploration activities.
Students gain practical experience in geological mapping, sampling procedures, drill-core documentation, preliminary data interpretation and the construction of working geological models. The Master's thesis may be based on a real exploration project or an applied industry case study and demonstrates the student's capacity to conduct independent, practice-oriented research.

3. Professional and general competences, specific competences

4. Graduates of the program acquire competences for participation in exploration programs, analysis of geological, geochemical and geophysical information, and effective teamwork in professional settings. They are prepared to apply contemporary methods for the investigation and preliminary evaluation of mineral deposits and to prepare professional documentation in accordance with internationally recognized practices.

5. The program develops adaptability to dynamic working conditions, communication skills in a multicultural environment and the capacity for professional engagement in an international context.

6. **Professional realization (according to the National Classification of Occupations in the Republic of Bulgaria /based on the International Standard Classification of Occupations (ISCO)/ and in reference to the place of the future specialists in the National Qualifications Framework for higher education and the European Qualifications Framework for higher education)**

The acquired qualification provides opportunities for employment in international and national exploration and mining companies, consulting firms and research institutions working in the field of mineral resources. The strong practical orientation of the program ensures readiness for immediate integration into exploration teams. The program also provides an academic foundation for further studies towards a doctoral degree in Earth Sciences.

B 2 7 0 1
Program code

Area of Study "Earth Sciences, Geology" / Master's Degree Programme "Applied Economic Geology"

admission winter semester of 2026-2027 academic year

№	Course Code	Course Title	Type- C, E, O	Semester	ECTS credits	Classes - total number					Classes per week	Assessment* - e, ca, ce, cont.
						Total	Lectures	Seminars	Practical Classes/ Observation	Self study		
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
Core Subjects												
1	C 1 0 1	Economic Geology and Mineral Exploration	C	1	4	120	30		30	60	2+2	ce
2	C 1 0 2	Exploration Geochemistry	C	1	4	120	30		30	60	2+2	ce
3	C 1 0 3	Exploration Geophysics	C	1	3	90	15		30	45	1+2	ce
4	C 1 0 4	GIS and Remote Sensing	C	1	4	120	15		45	60	1+3	ce
5	C 1 0 5	Geological Mapping in Exploration	C	2	5	150	15		45	90	1+3	ce
6	C 1 0 6	Core and trench Logging and Sampling	C	2	4	120	15		30	75	1+2	ce
7	C 1 0 7	3D modelling and evaluation of mineral resources	C	3	3	90	15		30	45	1+2	ce
8	C 1 0 8	Mining Economics and Project Evaluation	C	3	3	90	30		15	45	2+1	ce
Elective Courses – the chosen electives have to contribute to minimum 36 Credits												
1	E 2 0 1	Structural Geology of Mineral Deposits	E	1	5	150	15		45	90	1+3	ce
2	E 2 0 2	Applied Petrology	E	1	5	150	30		30	90	2+2	ce
3	E 2 0 3	Wall Rock Alteration	E	1	5	150	30		30	90	2+2	ce
4	E 2 0 4	Advanced analytical methods	E	1	5	150	15	15	30	90	1+3	ce

По решение на ФС съотношението аудиторна / извънаудиторна заетост на студентите е 1:1

форма на оценяване:
и-изпит, то-текуща оценка,
ки-комбинирано изпитване,
прод.- продължава в сл. семестър

5	E	2	0	5	Applied Sedimentology	E	2	5	150	30	30		90	2+2	ce
6	E	2	0	6	Sediment-hosted ore deposits	E	2	5	150	30		30	90	2+2	ce
7	E	2	0	7	Geology of porphyry and epithermal systems	E	2	5	150	30	15	15	90	2+2	ce
8	E	2	0	8	Applied Geostatistics	E	2	5	150	30		30	90	2+2	ce
9	E	2	0	9	Regional Metallogeny	E	2	5	150	30	15	15	90	2+2	ce
10	E	2	1	0	Sustainable mining and Environmental Management	E	3	3	90	30		15	45	2+1	ce
11	E	2	1	1	Critical Raw Materials	E	3	3	90	30		15	45	2+1	ce
12	E	2	1	2	Technogenic deposits and recycling	E	3	3	90	30		15	45	2+1	ce

Internships

№	code				Internship	Type- C, E, O	Semester	ECTS credits	weeks	hours	Assessment* - e, ca, ce, cont.
1	P	1	0	1	Geological Mapping in Mineral Exploration	C	2	3	2	84	ce
2	P	1	0	2	Mineral Exploration Methods	C	2	3	2	84	ce
3	P	1	0	3	Integrated Field Project in Economic geology	C	3	3	2	84	ce

Degree Completion

Form of degree completion	ECTS credits	First State Exam Session	Second State Exam Session
Defence of an Master's thesis	15	March	June

The curriculum has been approved by the Faculty Council, Record of Proceedings № № 2 from 17.02.2026

DEAN:.....
Prof. DSc Kliment Naidenov

По решение на ФС съотношението аудиторна / извънаудиторна заетост на студентите е 1:1

форма на оценяване:
и-изпит, то-текуща оценка,
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прод.- продължава в сл. семестър

Sofia University "St. Kliment Ohridski"

Curriculum Reference Statement

Area of Study "4.4.Earth Sciences" / Master's Degree Programme "Applied Economic Geology"
form of study full-time, length of study 3 (three) Semesters

Course hours, ECTS credits and number of grades per semester																																						
Type of courses	I			II			III			IV			V			VI			VII			VIII			IX			X			Общо		
	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades	course hours	ECTS credits	number of grades
compulsory courses	450	15	4	270	9	2	180	6	2																						900	30	8						
min. elective courses	450	15	3	450	15	3	180	6	2																						1080	36	8						
optional courses																															0	0	0						
internships				180	6	2	90	3	1																						270	9	3						
Total:	900	30	7	900	30	7	450	15	5																						2250	75	19						
																									Defence of Master's thesis						450	15	1						
																									Total						2700	90	20						
																									Auditorium hours						870								

Form of degree completion	ECTS credits	Study Hours	First State Exam session	Second State Exam Session
Defence of an Master's thesis	15	450	March	June

Acquired Professional Qualification Master of Applied Economic Geology

Record of Proceedings of the Faculty Council № № 2 from 17.02.2026

Dean:
Prof. DSc Kliment Naidenov