CATALOGUE OF PROGRAMS AND COURSES

TAUGHT AT THE UNIVERSITY OF MINING AND GEOLOGY

"ST. IVAN RILSKI"

2025/2026

COURSES THAT CAN BE TAUGHT IN FOREIGN LANGUAGE

EQF Level 7 "Master'"

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload		Overall hours	Credits (ECTS)	Language of instruction	Course leader
					Lectures per week	Exercises / Seminars per week				
1	Autumn	1152157	Geoarchaeology	E	1	1	60	5	ENG	Prof. Dr. Pristavova
1	Autumn	1152158	Gemmology	E	2	3	75	6	ENG	Assist Prof. Dr. L. Mihailov
1	Autumn	1152180	Gem testing and grading	CA	2	2	56	5	ENG RUS	Assist. Prof. Dr. L. Mihailov
1	Autumn	1322179	Microcontrolers	E	3	4	105	8	ENG, RUS	Assoc. Prof. Dr. Y. Gorbounov
1	Autumn	1112227	Organic petrology	E	2	2	60	5	ENG	Assoc. Prof. Alexandar Zdravkov
1	Autumn	1112135	Organic geochemistry	E	2	2	60	5	ENG	Assoc. Prof. Dr. Alexandar Zdravkov, Assist. Prof. Dr. G Meracheva
1	Spring	1112129	Mining geology	CA	2	2	60	5	ENG	Assoc. Prof. Dr. Stanislav Stoykov
1	Spring	1242134	Chemical and physicochemical methods for liquid waste management	E	3	2	75	6	ENG, RUS	Prof. M. Dr. Panayotova
1	Spring	1162157	Oil and gas storage	E	2	2	60/56	5	ENG, RUS	Assoc. Prof. Dr. Lachezar Georgiev
2	Autumn	1162137	Design of gas supply systems	E	3	3/4	75/98	8	ENG, RUS	Assoc. Prof. Dr. Martin Minkov Boyadzhiev
1	Spring	1132227	Biotechnologies for green energy generation		3	3	90	7		Assist. Prof. Dr. Polina Velichkova

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload	Overall hours	Credits (ECTS)	Language of instruction	Course leader	Year*
1	Autumn	1142125	Engineering Geophysics	E	3	3	90	7	ENG	Assoc. Prof. Dr. Maya Tomova
1	Autumn	1142124	Methods of Solving Ill-Conditioned Problems in Geophysics	E	3	3	90	7	ENG	Assist. Prof. Dr. Christian Tsankov
1	Spring	1142127	Exploration Geophysics	E	3	3	90	7	ENG	Assoc. Prof. Dr. Maya Tomova
1	Spring	1142130	Earth Magnetism and Geoelectrical Fields	E	3	3	90	7	ENG	Assist. Prof. Dr. Christian Tsankov
1	Spring	1142131	Gravimetry	E	2	3	75	5	ENG	Assist. Prof. Dr. Christian Tsankov
1	Spring	1142128	Petroleum Geophysics	E	3	3	90	7	ENG	Assoc. Prof. Dr. Maya Tomova
1	Autumn	1122242	Application of GIS in landscape research	CA	1	4	75	6	ENG	Assoc. Prof. Dr. Valentina Nikolova
1	Autumn	1122141	GIS documenting and management of protected areas	E	2	3	75	6	ENG	Assoc. Prof. Dr. Dimitar Sachkov
1	Autumn	1122116	Geodynamic processes and phenomena	E	2	3	75	6	ENG	Assoc. Prof. Dr. Ivan Dimitrov
2	Spring	1211158	Mine Aerology	E	2	2	60	3	ENG, German	Assist. Prof. Dr. Nadezhda Kostadinova, Assoc. Prof. Zahari Dinchev
2	Autumn/ Spring	1252119	Global Navigation Satellite Systems (GNSS)	E	2	3	75	5	ENG	Assoc. Prof. Dr. Asparuh Kamburov
1	Autumn/ Spring	1252114	Server and Cloud GIS	E	2	2	60	4	ENG	Assoc. Prof. Dr. Asparuh Kamburov
2	Spring	1252108	Geodesy and mine surveying in underground mining	E	3	3	90	6	ENG	Prof. Dr. Stanislav Topalov, Assoc. Prof. Dr. Milena Begnovska Dr. Sergey Mihalev
2	Autumn	1212175	Risks by Environmental Spread of Industrial Harmful Substances	CA	1	2	45	3	ENG, German	Assist. Prof. Dr. Nadezhda Kostadinova
1	Autumn	1212163	Industrial Hygiene and Occupational Diseases	E	3	2	75	6	ENG, German	Assoc. Prof. Dr. Blagovesta Vladkova Assist. Prof. Dr. Nadezhda Kostadinova
2	Autumn	1212177	Ergonomics	E	2	1		4	ENG, German	Assist. Prof. Nadezhda Kostadinova
1	Autumn	1212161	Industrial Safety - Process and Plant Safety	E	4	2	90	7	ENG, German	Assoc. Prof. Blagovesta Vladkova Assist. Prof. Dr Nadezhda Kostadinova
2	Spring	1212173	Industrial Risk Management	E	2	3	75	7	ENG, German	Assoc. Prof. Blagovesta Vladkova Assist. Prof. Dr. Nadezhda Kostadinova

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload	Overall hours	Credits (ECTS)	Language of	Course leader	Year*
1	Autumn	1262239	Organizational Behavior	E	2	1	45	4	RUS	Assoc. Prof. Dr. Maria Fartunova
1	Spring	1262141	Sociology of Management	E	3	1	60	5	RUS	Assoc. Prof. Dr. Maria Fartunova
1	Spring	1262127	Innovation and investment management	CA	2	2	60	5	RUS ENG	Assoc. Prof. D.Sc. Veselin Mitev
1	Spring	1162171	Wärme- und Stoffübertragung= Heat and mass transfer	E	2	2	60	5	GER ENG	Assoc. Prof. Dr. E. Kraichev
2	Spring	1212132	Mathematical Modeling of Technological Processes	E	30	30	60	5	ENG	Assoc. Prof. Dr. S. Asenovski
2	Autumn	1212135	Quality Control of the Production of Opencast Mines and Quarries	E	3	3	72*	6	ENG	Assoc. Prof. Dr. S. Asenovski
2	Spring	1232161	Pure Blasting Chemical Compounds and Raw Materials for the Production of Blasting Materials	E	2	3	42	7	ENGRUS	Prof. DSc Valery Mitkov
1	Autumn	1232160	Principles in the Theory of the Blasting Phenomenon and Blasting Principles in the Theory of the Blasting Phenomenon and Blasting Agents	E	3	3	45	7	ENG RUS	Prof. DSc Valery Mitkov
1	Spring	1272152	Blasting Operations Safety	E	2	2	60	5	ENG RUS	Assoc. Prof. Dr. M. Berner
1	Spring	1272129	Blasting Operation Technologies	E	2	2	60	5	ENG RUS	Assoc. Prof. Dr. M. Berner
1	Spring	1272153	Design of Blasting Operations	E	2	2	60	5	ENG RUS	Assoc. Prof. Dr. M. Berner
2	Autumn	1272156	Blasting works in underground conditions	E	2	2	60	5	ENG RUS	Assoc. Prof. Dr. M. Berner
2	Autumn	1272157	Blasting works in urban conditions	E	1	5	72	6	ENG RUS	Assoc. Prof. Dr. M. Berner
2	Autumn	1232104	Geotechnics	E	3	3	84	5	ENG	Ch. Assist. Dr. Veselin Balev
1	Spring	1322185	Intelligent control systems	E	2	3	75	6	ENG	Assoc. Prof. Dr. Mila Ilieva
1	Spring	1331102	Calculus	E	2	3	75	6	ENG	Prof. Dr. Zlatinka Kovacheva
1	Spring	1322152	Explosion-proof equipment and explosion protection systems	E	2	2	60	5	RUS	Prof. Dr. Kiril Dzhustrov
1/2	Autumn	122132	Diploma thesis preparation and defense	Geoinformatics				15	ENG	Assoc. Prof. Dr. Ivan Dimitrov

* According to the curriculum of the University of Mining and geology; ENG = English; RUS = Russian; E = Exam; CA = Continuous assessment

EQF Level 6 "Bachelor'"

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload		Overall hours	Credits (ECTS)	Language of instruction	Course leader
					Lectures per week	Exercises / Seminars per week				
1	Spring	1211122	Technology of mining	E	2	2	56	5	ENG	Assoc. Prof. Dr. S.Assenovski
3	Spring	211112	Draining and pit slope stability	E	2	2	56	4	FR RUS	Assoc. Prof. Dr. Evgeniya Aleksandrova
3	Spring	171173	Methods and technologies for production of biogas	E	1		28	5	ENG	Assoc. Prof. Dr. Angelov
4	Spring	1241115	Chemical Methods in Mineral Processing and Recycling	E	3	4	70	8	ENG	Prof. Dr. M. Panayotova
2	Spring	1241121	Analytical Chemistry	E	2	3	70	8	ENG	Assoc. Prof. Dr. Mintcheva
2	Spring	1241124	Hydrochemistry	E	2	3	56	6	ENG RUS	Prof. Dr. M. Panayotova, Assist Prof. Dr A. Chanachev
3	Spring	291107	Instrumental methods for gas analysis	E	2	2	42	6	ENG	Assoc. Prof. Dr. Mintcheva
2	Autumn	1241122	Organic Chemistry	E	2	4	84	8	ENG	Assist. Prof. Dr. Gicheva, Assist Prof. Dr A. Chanachev
2	Autumn	1241123	Physical Chemistry	E	2	3	70	8	ENG RUS	Prof. Dr. M. Panayotova, Assist Prof. Dr A. Chanachev
4	Autumn	281106	Protective metal coatings	E	2	2	42	6	RUS ENG	Prof. Dr. Panayotova
4	Spring	281108	Corrosion and corrosion protection in construction work	E	3 (10 weeks semester)	4 (10 weeks semester)	70	6	ENG RUS	Prof. Dr. M. Panayotova
1	Autumn	1241120	General Chemistry	E	2	2	56	6	ENG RUS. GER	Assoc. Prof. Dr. Mintcheva; Assist Prof. Dr A. Chanachev
3	Autumn	331117	Microprocessors	E	2	2	56	5	ENG, RUS	Assoc. Prof. Dr. Y. Gorbounov

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload		Overall hours	Credits (ECTS)	Language of instruction	Course leader
					Lectures per week	Exercises / Seminars per week				
2	Spring	1321125	Digital Design	E	2	3	70	6	ENG, RUS	Assoc. Prof. Dr. Y. Gorbounov
2	Spring	1321122	Fundamentals of Automations	E	2	2	56	5	RUS	Chief Assist. Prof. Dr. V. Dzharov
2	Autumn	1321139	Electrical materials	E	2	2	56	6	ENG	Assoc. Prof. Dr. T. Hristova
2	Spring	1321113	Electrical engineering	E	2	2	56	5	ENG	Assoc. Prof. Dr. T. Hristova
3	Spring	111105	Coal geology	E	3	3	84	7	ENG	Assoc. Prof. Dr. Alexandar Zdravkov
3	Autumn	111102	Fundamentals of geochemistry	E	3	2	70	6	ENG	Assoc. Prof. Dr. Stanislav Stoykov
3	Autumn	111141	Geochemistry	E	2	3	70	6	ENG	Assoc. Prof. Dr. Stanislav Stoykov
4	Autumn	111131	Industrial Types Deposits of Mineral Resources	E	2	2	56	6	ENG	Assoc. Prof. Dr. Stanislav Stoykov
3	Autumn	111117	Geology and Exploration of Mineral Deposits	E	2	2	56	5	ENG	Assoc. Prof. Dr. Stanislav Stoykov
3	Spring	111104	Geology of mineral deposits	E	3	3	84	7	ENG	Assoc. Prof. Dr. Stanislav Stoykov
4	Autumn	111108	Deposits of industrial minerals and rocks	E	3	3	84	7	ENG	Assoc. Prof. Dr. Stanislav Stoykov
4	Spring	111144	3D Geological Modelling	CA	0	4	406	3	ENG	Assoc. Prof. Dr. Kalin Ruskov
2	Spring	1111103	Fundamentals of geostatistics	E	2	2	56	6	ENG	Assoc. Prof. Dr. Kalin Ruskov
3	Spring	112121	Geographic information systems - GIS	CA	1	2	42	4	ENG	Prof. Dr. Kamen Popov
1	Spring	1261106	Economics	E	3	3	84	9	RUS	Prof. Dr. Emil Dimov

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload		Overall hours	Credits (ECTS)	Language of instruction	Course leader
					Lectures per week	Exercises / Seminars per week				
2	Spring	1261118	Economics and Finances	E	2	1	42	4	RUS	Prof. Dr. Emil Dimov
4	Autumn	271123	Entrepreneurship Culture	E	3	2	70	6	RUS	Assoc. Prof. Dr. Maria Fartunova
4	Autumn	271102	Human Resource Management	E	3	2	70	7	RUS	Assoc. Prof. Dr. Boryana Trifonova
4	Autumn	271124	Marketing fundamentals	E	3	1	56	5	RUS	Assoc. Prof. Dr. Boryana Trifonova
4	Autumn	271225	Technology Renewal and Social Dynamics	E	3	1	56	5	RUS	Assoc. Prof. Dr. Maria Fartunova
3	Autumn	271122	Project Management	E	3	2	70	8	ENG	Assoc. Prof. Dr. Borislava Galabova
3	Spring	271109	Analysis of economic activity	E	3	2	70	8	RUS ENG	Assoc. Prof. D.Sc. Veselin Mitev
3	Autumn	271107	Management of the industrial enterprise	E	3	2	70	7	RUS ENG	Assoc. Prof. D.Sc. Veselin Mitev
4	Spring	161114 161115 (CP)	Development and exploitation of oil and gas fields, Part II - Development of oil and gas fields with CP	E	5	5+1(CP)	110	9	ENG, RUS	Assoc. Prof. Dr. Lachezar Nikolov Georgiev
4	Spring	161116 161117 (CP)/ 161117	Transport and Use of the Oil and Gas and CP	E	5	5+1(CP)	110	8	ENG, RUS	Assoc. Prof. Dr. Martin Minkov Boyadzhiev
3	Spring	161106/116 1104	Machines and Equipment for Oil and Gas Extraction and Transport	E	2	2/3	56/70	8	ENG, RUS	Assoc. Prof. Dr. Martin Minkov Boyadzhiev
3	Autumn	1161105	Drilling Part I with CP	E	2	3	70	10	ENG	Assist Prof. Boris Pachedjiev
1	Autumn	131101/ 1151140	Mineralogy and Crystallography	E	3	3	70	6	ENG RUS	Assoc. Prof. Dr. Pazderov
1	Spring	1151248	Fundamentals of Gemology	CA			42	3	ENG	Assist Prof. Dr. L. Mihailov
2	Spring	1151141	Mineralogy and petrography	E	3	3	84	6	ENG RUS	Assist Prof. Dr. L. Mihailov, Assoc. Prof. Dr. Pazderov

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload		Overall hours	Credits (ECTS)	Language of instruction	Course leader
					Lectures per week	Exercises / Seminars per week				
2	Spring	1151142	Metamorphic Petrology	E	2	2	56	5	ENG	Prof. Dr. Pristavova
1	Autumn	1141101	Fundamentals of Geophysics	E	2	3	70	8	ENG	Assoc. Prof. Dr. Maya Tomova
3	Autumn	1141104	Gravitational Methods in Geophysics	E	4	4	112	10	ENG	Assist. Prof. Dr. Christian Tsankov
3	Autumn	1141110	Seismic Methods in Geophysics	E	4	4	112	10	ENG	Assoc. Prof. Dr. Maya Tomova
3	Spring	1141108	Magnetic Methods in Geophysics	E	4	4	112	10	ENG	Assist. Prof. Dr. Christian Tsankov
3	Spring	141115	Applied Geophysics	E	2	2	56	5	ENG	Assoc. Prof. Dr. Maya Tomova
3	Autumn	1141106	Electric Methods in Geophysics	E	4	4	112	8	ENG	Assist. Prof. Dr.Atanas Kysiov
4	Autumn	1141113	Remote Sensing Methods in Geophysics	E	2	2	56	5	ENG	Assist. Prof. Dr. Christian Tsankov
4	Spring	1141114	Borehole Geophysics	E	6	6	120	12	ENG	Assoc. Prof. Dr. Maya Tomova
2	Autumn	1121109	Paleontology and Stratigraphy	E	2	3	70	8	ENG	Assoc. Prof. Dr. B. Valchev
1	Spring	1121120	Fundamentals of Cartography	E	2	2	56	7	ENG	Assoc. Prof. Dr. Valentina Nikolova
2	Spring	1121121	Introduction to geological geometric analysis	E	3	3	84	8	ENG	Assoc. Prof. Dr. Ivan Dimitrov
3	Spring	1121122	CAD systems in geology	CA	1	3	56	6	ENG	Assoc. Prof. Dr. Dimitar Sachkov
3	Autumn	1121125	Geoinformation analysis of the terrain	E	2	2	56	5/6	ENG	Assoc. Prof. Dr. Valentina Nikolova
3	Autumn	1121150	GIS and spatial analyses	CA	1	3	56	5	ENG	Assoc. Prof. Dr. Valentina Nikolova
3	Autumn	1121112	Historic and regional geology	E	3	3	84	6	ENG	Assist. Prof. Dr. B. Valchev
3	Spring	1121119	3D geological mapping	E	3	4	98	10	ENG	Assoc. Prof. Dr. Ivan Dimitrov
3	Autumn	121115/ 1121115	GIS documenting of linear infrastructural objects	CA	1	4	70	7	ENG	Assoc. Prof. Dr. Dimitar Sachkov

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					Lectures per week	Exercise/ Seminars per week				
4	Autumn	121139	Geological information processing in GIS	CA	1	3	56	5	ENG	Assoc. Prof. Dr. Dimitar Sachkov
4	Spring	121157	Geological heritage	E	2	3	50	4	ENG	Assist. Prof. Dr. B. Valchev
4	Spring	111251	Statistical analysis of geological information	E	3	3	60	4	ENG	Assoc. Prof. Dr. Kalin Ruskov
4	Spring	351109	Wärmetechnik = Heat technology and Heat engineering or	E	3	2	70	7	GE, ENG	Assoc. Prof. Dr. E. Kraichev
3	Autumn	351110	Thermodynamik= Thermodynamics and Internal Combustion Engines	E	2	2/3	56/70	6/7	GE, ENG	Assoc. Prof. Dr. E. Kraichev
4	Spring	261101	Ventilation of Underground objects / Mine ventilation	E	2/28	2/28	60/56	4/5	ENG, German	Assist. Prof. Dr. N. Kostadinova, Assoc. Prof. Dr. Zahari Dinchev
3	Spring	261104	Mine Aerology	E	28	56	84	6	ENG, German	Assist. Prof. Dr. N. Kostadinova, Assoc. Prof. Dr. Zahari Dinchev
4	Spring	261102	Occupational Health and Safety	E	2	2	60	4	ENG, German	Assoc. Prof. Dr. Blagovesta Vladkova
2	Autumn	1331132	Computer Networks and Communications – Part I	E	2	3	70	7	ENG	Assoc. Prof. Dr.Veselin Hristov, Assist. Prof. Kremena Arsova
4	Spring	361126	Protecting of Information and Information Security	E	3	3	60	7	ENG	Assoc. Prof. Dr. Yordanka Anastasova, Assist. Prof. Ivan Drankov
	Autumn/ Spring	221100	Foreign language	CA	-	3	42	3	English, French, German Spanish, Russian	Chief Assist M. Hristova - head of the foreign languages dept.
3	Autumn	321101	Electrical Apparatus	E	2	3	70	6	RUS	Prof. Dr. Kiril Dzhustrov
4	Autumn	321135	Relay Protection	E	2	3	70	5	RUS	Prof. Dr. Kiril Dzhustrov
4	Autumn	331122	Embedded systems design	E	2	2	56	5	RUS	Chief Assist. Prof. Dr. V. Dzharov
3	Spring	231101	Underground Construction	E	2	3	42	6	GER	Prof. Dr. Pavel Pavlov
4	Spring	231119	Tunnelling Mine Construction	E	3	4	40	6	GER	Prof. Dr. Pavel Pavlov
3	Autumn	231120	Construction of Underground Facilities	E	2	1	45	3	GER	Prof. Dr. Pavel Pavlov
4	Autumn	231104	Underground Ur ban Infrastructure	E	3	3	84	7	ENG	Assoc. Prof. Dr. Ivan Mitev

Year*	Semester	Course unit code	Full name of the course unit	Form of assessment	Workload		Credits (ECTS)	instruction	Language of instruction	Course leader
					Lectures per week	Exercise/ Seminars per week				
3	Autumn	231114	Structural Mechanics of Underground Equipment	E	3	2	70	6	ENG	Assist. Vladimir Penev
3	Spring	231122	Mine Construction	E	2	3	42	7	ENG	Ch. Assist. Dr. Veselin Balev
3	Autumn	231115	Blasting Equipment and Technology	E	3	3	84	7	ENG	Ch. Assist. Dr. Zdravka Mollova
4	Autumn	231111	Reinforced Concrete	E	3	2	70	6	ENG	Ch. Assist. Dr. Rafail Rafailov
4	Autumn	232271	Course project in Reinforced Concrete	E		1	14	2	ENG	Ch. Assist. Dr. Rafail Rafailov
1	Spring	1321136	Electronic Devices in Computer Technologies	E	2	2	56	5	ENG	Assoc. Prof. Dr. Mila Ilieva
2	Autumn	1321138	Electronics	E	2	2	56	6	ENG	Assoc. Prof. Dr. Mila Ilieva

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Practical trainings at Bachelor level

Year*	Course unit code	Full name of the course unit	Form of assessment	Workload Overall hours	Hours	Language of instruction	Course leader
2	1121127	Paleontology and Stratigraphy	CA	3 days	18	ENG	Assist. Prof. Dr. B.Valchev
2	1121129	Structural geology and Geotectonics	CA	3 days	18	ENG	Assoc. Prof. Dr. Ivan Dimitrov
3	121130	Field geology	CA	10 days	60	ENG	Assoc. Prof. Dr. Ivan Dimitrov
3	121149	Regional geology and geological phenomena	CA	8 days	48	ENG	Assist. Prof. Dr. B. Valchev
3	141124	Practical Training in Gravitational Methods in Geophysics	CA	3 days	18	ENG	Assist. Prof. Dr. Christian Tsankov
3	141126	Practical Training in Magnetic Methods in Geophysics	CA	3 days	18	ENG	Assist. Prof. Dr. Christian Tsankov
3	141127	Practical Training in Seismic Methods in Geophysics	CA	3 days	18	ENG	Assoc. Prof. Dr. Maya Tomova
3	141128	Practical Training in Applied Geophysics	CA	3 days	18	ENG	Assist. Prof. Dr. Christian Tsankov
2	1321144	Practice on electrical machines, electronics and electrical measurements	CA	3 days	18	ENG	Assoc. Prof. Dr. Mila Ilieva
3	141125	Practical Training in Electrical Methods in Geophysics	CA	3 days	18	ENG	Assist. Prof. Dr.Atanas Kysiov
1	1161111	Internship in Introduction to Drilling, Oil and Gas Engineering	CA	4 days	24	ENG	Assoc. Prof. Dr. Lachezar Nikolov Georgiev Assist Prof. V. Mitkov

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MASTER PROGRAMS THAT CAN BE TAUGHT IN ENGLISH

Name of the program: ***ECOTECHNOLOGY AND ENVIRONMENTAL PROTECTION***

EQF Level of the program: 7

The ISCED 2013 field of education: 052

Qualification awarded: ***ECOLOGIST***

Description of the program:

The Master's Programme in "Ecotechnologies and Environmental Protection" prepares for future career highly qualified specialists ready to meet the contemporary challenges of the industry and society. In addition to the solid academic knowledge, the programme allows to the students to develop a variety of practical skills outside of the university thanks to our close partnerships with authoritative and international companies in the branch. The senior graduate students who chose this specialty will be trained in the environmental impact of the energy and mineral industry sectors on the environment as well as in the implementation of efficient and environmental friendly ecotechnological solutions, adapted to the local social conditions for sustainable industrial development and economic growth. The programme covers varied aspects of the latest methods of the sustainable engineering that can reduce the damage on the ecosystems, remediate the polluted water and soil, manage the wastes and ensure conservation of the biodiversity. All kinds of manufactures wish to hire such specialists, because all of these manufactures must satisfy strict environmental regulations and be sure that they deal with the best eco-friendly practices. The educational approach is multidisciplinary, involving close cooperation between European and world-famous scientists with high reputation, together with a numerous experts and representatives of the business society. Graduates of this specialty can find jobs as experts-ecologist in various industries, at the market for ecotechnology and environmental innovations, in the scientific and governmental institutions in the member countries of European Union as well as in the whole world.

Key learning outcomes:

This Master's degree expands students' knowledge and this is facilitated by the opportunity to obtain specialised training in some of the above subjects by selecting the respective set of optional course units. The graduates of this degree are able to design and organise environmental protection activities and to exert administrative control in this direction, as well as to perform as engineers and ecologists in various branches of industry and agriculture, as experts in state institutions, non-governmental organisations, and commercial entities acting in the area of ecology and environmental protection, and also as research workers in the field of ecology and environmental protection. Training in this degrees is carried out along curricula that comply with those of the leading universities of EU member states.

The graduates of this course of studies can be successfully employed on positions connected with environmental protection activities in the geoexploration, mining, and energy branches of industry, in the chemical and pharmaceutical industries and in agriculture, as well as such in the field of mineral processing. They can also find occupational fulfilment as ecologists in district authorities and municipalities, in the Regional Inspectorate of the Environment and Water (RIEWs), or as state employees in institutions whose scope of power is ecology.

Leading department: ***Department Engineering Geoecology***

Program director: ***Assoc. Prof. Dr. A. Angelov***

Contacts: ***University of Mining and Geology "St. Ivan Rilski"***
Studentski Grad, "Prof. Boyan Kamenov" Street, Sofia 1700, *tonyagev@mgu.bg*

Program components, workload, assessment methods, credits allocation

Year	Semester	Code of the discipline	Full name of the discipline	Form of assessment	Weekly workload		Overall hours	Credits (ECTS)
					Lectures	Exercises /Seminars		
First	Autumn		Compulsory:					
		172127	1. Environmental chemistry	Exam	3	3	90	6,0
		292115	2. Impact of mining and mineral processing on natural water bodies	Exam	3	3	90	6,0
		121159	3. Environmental Geology	Exam	2	2	60	5,0
		142145	4. Environmental Geophysics	Exam	3	3	90	6,0
			5. Elective (one of the two):					
		272172	5.1. Management of environmental impacts	Exam	3	1	60	5,0
		271162	5.2. Economic assessment of environmental impacts	Exam	3	1	60	5,0
			Total for the first semester:		14	12	390	28
	Spring		Compulsory :					
		172173	6. Waste management	Exam	3	3	90	6,0
		172174	7. Biotechnological systems for environmental protection	Exam	3	3	90	6,0
		112161	8. Environmental Geochemistry	Exam	3	3	90	6,0
		362117	9. Geoecological modelling in a GIS environment	Exam	3	3	90	6,0
			10. Elective (one of the two):					
		172158	10.1. Biosensors and bioindicators	Exam	3	3	90	6,0
		172168	10.2. Ecotoxicology	Exam	3	3	90	6,0
			Total for the second semester:		15	15	450	36
Second	Autumn		Pre-graduate practice and Master Thesis defence				30	15
			Total number of hours and credits for the entire training course:				870	85

Name of the program: *GEOLOGY AND GEOINFORMATICS*

EQF Level of the program: 7

The ISCED 2013 field of education: 0532

Qualification awarded: Master in geoinformatics

Description of the programme:

This master's program is centered aroundthe use of geoinformatics in earth science fields. It is particularly relevant to the subject of environmental geology. The programme prepares students to become experts in geological prospecting and ecological research with emphasis on soil and water management. The courses are designed to teach, complex geological and geomorphological analyses using software tools, documentation of infrastructure sites, mapping of the geochemical and geophysical parameters of the environment, computer modeling of natural processes, forecasting and monitoring of natural risks and procedures for management of protected areas, such as national parks, geoparks and etch. They are designed to develop abilities, useful for doctoral studies, and/or professional career in the industry. Since the main tool used is GIS software, upon completion of the program, the candidates will be most sought of as GIS specialists in mining and prospecting companies and as variety of GIS related technicians in environment related business enterprises.

Key learning outcomes:

By the end of this Master programme graduates will be able to:

- Define and comprehend fundamental concepts, practices and advances in geoinformatics;
- Acquire, process and visualize spatial data in the field of geology, environmental protection and geotourism;
- Know and analyse spatial and functional dependencies between objects and phenomena (particularly related to geological prospecting; geodynamic events; geological-geomorphological hazards and protected areas) and to interpret the results of the analysis;
- Do individual researches for solving different tasks in geology, environmental protection and landscapes;
- Know main remote sensing systems and apply remote sensing methods;
- Apply techniques of spatial analyses, 3D modelling and mapping;
- Demonstrate confidence in working with GIS and in solving of different software problems by using software help or information in the websites;
- Show advanced skills in using computer technology for input and analysis of spatial data;
- Demonstrate organizational skills in file and database management;
- Effectively communicate the results of their research and master's theses

Leading department:
Geology and geoinformatics

Program director
Assoc. Prof. Dr. Ivan Dimitrov Ivanov

Contacts: ***University of Mining and Geology "St. Ivan Rilski"***
Studentski Grad, "Prof. Boyan Kamenov" Street, Sofia 1700,
idim68@abv.bg, ***Assoc. Prof. Ivan Dimitrov Ivanov***

Program components, workload, assessment methods, credits allocation

Semester	No	Course unit code	Full name of the course unit	Form of assessment	Workload		Workload Exercises Types			Overall hours	Credits (ECTS)
					Lectures	Exercises /Seminars	Seminar	Lab	Practical		
Autumn	1	112146	GIS analysis in geological prospecting	E	2	3		45		75	6
	2	122141	GIS documenting and management of protected areas	E	2	3		30	15	75	6
	3		Elective course:	E	2	3				75	6
		122218	1. Special methods of 3D geological analysis					30	15		
		122216	2. Geodynamic processes and events				45				
	4	172126	Ecology and environmental protection	E	2	3		45		75	6
	5		Elective course:	CA	1	4		60		75	6
		122242	1. Application of GIS in landscape studies								
		122243	2. Spatial data infrastructure								
			Optional:								
		222301	English			*28*	*28*			*28*	
		372300	Physical education and sport			*28*			*28*	*28*	
			Total for the first semester	**4+1**	**9**	**16**	**45**	**200**	**30**	**375**	**30**
Spring	6	112124	Remote sensing in geology	E	2	3		45		75	5
	7	122117	Geological maps compilation in GIS	CA	1	4		60		75	5
	8	142143	Digital images processing	E	1	4		60		75	5
	9	122144	Geoecological modeling in GIS environment	E	1	4		60		75	5
	10	122145	Basics of scientific research	E	2	3	45			75	5
	11		Elective course:	CA	1	3		45		60	5
		362233	1. Web programming								
		122246	2. Programming in GIS environment								
			Optional:								
		222301	English			*28*	*28*			*28*	
		372300	Physical education and sport			*28*			*28*	*28*	
			Total for the second semester	**4+2**	**7**	**22**		**330**		**435**	**30**
		122132	Preparation and defense of a thesis								15

PhD PROGRAMS THAT CAN BE TAUGHT IN ENGLISH

Name of the program: *SYSTEMS AND DEVICES FOR ENVIRONMENTAL PROTECTION*

EQF Level of the program: 8

The ISCED 2013 field of education: 052 Environment

Qualification awarded: PhD

Description of the program:

The international PhD course in „Systems and devices for environmental protection" at the University of Mining and Geology „St. Ivan Rilski"-Sofia, Bulgaria prepares for future careers motivated specialists in ecology and ecological biotechnology, who are interested particularly in the modern environmental challenges of the industry and society. In addition to the solid professional knowledge, the program training allows to develop a variety of practical skills for the searching of best and applicable engineering solutions of various problems related to the environmental protection and conservation. The PhD fellows involved in this specialty will be educated in the impact of the energy and mineral industries on the environment, the biosensors technology and analytical tools for ecological monitoring and assessment, as well as the preparation of scientific reports and set of efficient strategies for sustainable industrial growth and economic development.

Key learning outcomes:

The general key learning outcomes of the course program are the possibilities for management of numerous types of system and devices, which are widely used to improve and keep in good health the natural ecosystems in conditions of industrialization, where the processes are conducted with high risk of potential release of wastes and toxicants. Thus, the graduates have a broad scopes for finding jobs, as highly qualified experts in many industrial branches, researchers in academic or scientific institutions, non-profit organizations, advisors in governmental institutions, mainly in European Union but also in the other countries, which require high standarts for environmental protection and control.

Leading department: *Department Engineering Geoecology*

Program director: *Assoc. Prof. Dr. A. Angelov*

Contacts: *University of Mining and Geology "St. Ivan Rilski", Studentski Grad, "Prof. Boyan Kamenov" Street, Sofia 1700, tonyagev@mgu.bg*

Name of the program: *METHODS AND TECHNIQUE OF GEOLOGICAL STUDIES*

EQF Level of the program: 8

The ISCED 2013 field of education: 0532 Earth Sciences

Qualification awarded: PhD

Description of the program:

The PhD program in the scientific specialty "Methods and Technique of Geological Studies" at the Department of Applied Geophysics is designed to prepare highly qualified specialists in the field of structural geological-geophysical studies related to the prospecting, exploration and exploitation of mineral resources. At the University of Mining and Geology "St. Ivan Rilski", unlike other PhD programs that are related to fundamental geophysical and geological subjects, the efforts are mainly focused on solving problems directly related to the implementation of state and/or corporate projects, focusing the specifics in preparation and training of PhD students, first and foremost, in practical terms. Particular attention is paid to the near-surface geophysical studies in industrial, civil and mining construction.
The PhD students receive the necessary theoretical and practical training, perfecting and concentrating their knowledge in the possibilities for application of field, borehole and remote geophysical methods in all stages of prospecting, exploration and exploitation of mineral resources, as well as in solving engineering, hydrogeological and environmental problems.
Graduates of the PhD program in the scientific specialty "Methods and Technique of Geological Studies" at the Department of Applied Geophysics find professional realization in the design and conduct of geophysical research in the mentioned fields, as well as in fields with close or similar activity. They can work in scientific and scientific-designing institutes and laboratories, in universities as lecturers and associates. They can apply for leading positions as executives or experts in proper state and economic structures, or successfully implement themselves through their knowledge in modern computer technology.

Key learning outcomes:

The PhD candidate acquires problem solving ability and ability to work in a teem environment, comprising specialists of various expertise.
This is achieved by solving real problems of both scientific and practical importance, related to some geological or environmental procedure, which reflects societal needs, such as mineral prospecting and mitigation of environmental damage, water management or soil management.
The problem solving is projected in a time frame that is sufficient to accomplish extensive literatures review, data acquisition, analysis and presentation of the results. The presentation of the results is achieved by paper writing and thesis completion and defense.
The main problem, solved in the PhD program, is selected to be of multidisciplinary nature so interaction with specialists of different field is needed on every step of the work flow.
These specialists, acting as consultants, are selected from the pool of the University of Mining and Geology - Sofia, the Sofia University and the institutes of the Bulgarian Academy of Sciences. Training courses, workshops and laboratory time in relevant European universities are also envisaged. Acquaintance with and industry executives from relevant fields will most likely be made as some point in the program.
As an obligatory outcome at least three scientific papers have to be published as in one of them the candidate should be the sole author.

In addition to the problem-solving, adequate skills in scientific presentation of the results are also specifically targeted in the learning program. The presentation will encompass oral, writing and graphic presentation skills. The graphic presentation usually includes high level 3D visualization using GIS or CAD software, coupled with geometry methods from the fields of geodesy, structural geology and other earth sciences.
As a rule the PhD program has three obligatory exams as the number of exams can be increased depending on the topic and the needs of the candidate. One of these exams is in technical English, for nonnative English speakers, and the rest are on topics strictly related to the topic of the thesis.
Socialization in the Bulgarian environment is usually achieved by using accommodation on the student's town in Sofia, where other students and young people live.

Leading department
Geology and geoinformatics

Program director
Ass. Prof. Dr. Ivan Dimitrov Ivanov

Contacts: ***University of Mining and Geology "St. Ivan Rilski", Studentski Grad, "Prof. Boyan Kamenov" Street, Sofia 1700,*** idim68@abv.bg, ***Assoc. Prof. Ivan Dimitrov Ivanov***

PROGRAMS AND COURSES THAT ARE TAUGHT IN BULGARIAN

EQF Level 6 "Bachelor"
https://mgu.bg/en/bachelors-degree-programmes/

EQF Level 7 "Master"
https://mgu.bg/en/masters-programmes/

EQF Level 8 "Doctorate or equivalent third cycle"
https://mgu.bg/en/doctoral-programmes/

INFORMATION ON THE GRADING SYSTEM USED IN BULGARIA

Grading scale:

EXCELLENT (5.50 - 6.00) - outstanding performance with only minor errors

VERY GOOD (4.50 - 5.49) - above the average standard but with some errors

GOOD (3.50 - 4.49) - generally sound work with a number of notable errors

FAIR (3.00 - 3.50) - performance meets the minimum criteria

FAIL (2.00) - considerable further work is required

ECTS grading scale:

Bulgarian - ECTS	Bulgarian - ECTS	Bulgarian - ECTS	Bulgarian - ECTS	Bulgarian - ECTS	Bulgarian - ECTS
6.00 - A100	**5.50 - A90**	**5.00 - B80**	**4.50 - B70**	**4.00 - C60**	**3.50 - C50**
5.95 - A 99	5.45 - B89	4.95- - B79	4.45 - C69	3.95 - C59	3.45 - D49
5.90 - A98	5.40 - B88	4.90 - B78	4.40 - C68	3..90- C58	3.40 - D48
5.85 - A97	5.35 - B87	4.85- B77	4.35 - C67	3.85 - C57	3.35 - D47
5.80 - A96	5.30 - B86	4.80- B76	4.30 - C66	3.80 - C56	3.30 - D46
5.75 - A95	5.25 - B85	4.75- B75	4.25 - C65	3.75 C55	3.25 - D45
5.70 - A94	5.20 - B84	4.70- B74	4.20 - C64	3.70 - C54	3.20 - D44
5.65 - A93	5.15 - B83	4.65- B73	4.15 - C63	3.65 - C53	3.15 - D43
5.60- A92	5.10 - B82	4.60- B72	4.10 - C62	3.60 - C52	3.10 - D42
5.55 - A91	5.05 - B81	4.55- B71	4.05 - C61	3.55 - C51	3.05 - D41
					3.00 - E40

ACADEMIC CALENDAR 2025-2026

Bachelor

Autumn semester - 2025

Classes begin	September 9, 2025
Add/drop week ends (5 pm)	September 15, 2025
Classes end	December 19, 2025
Exams beginning	January 5, 2026
Exams end	January 25, 2026

Spring semester - 2026

Classes begin	January 26, 2026
Add/drop week ends (5 pm)	January 30, 2026
Classes end	May 08, 2026
Exams beginning	May 11, 2026
Exams end	May 31, 2026
Correctional session	June 1 – 7, 2026
Educational practices	June 8 – 30, 2026

Master

Autumn semester - 2024

Classes begin	October 13, 2025
Add/drop week ends (5 pm)	October 17, 2025
Classes end	February 6, 2026
Exams beginning	February 7, 2026
Exams end	February 22, 2026

Spring semester - 2025

Classes begin	February 23, 2026
Add/drop week ends (5 pm)	February 27, 2026
Classes end	June 5, 2026
Exams beginning	June 6, 2026
Exams end	June 19, 2026

Vacations and holidays

- Unification Day - September 6
- Independence Day - September 22
- Day of the Bulgarian Enlighteners (Holiday for all educational institutions) – November 1
- Day of the patron of the university (no classes) - October 19
- Students' holiday (no classes) - December 8
- Christmas holidays - December 22, 2025 - January 2, 2026
- National Holiday /Bulgaria’s Liberation from the Ottoman Empire/ – March 3
- Easter holidays - April 10 – 13, 2026
- Labour and International Worker’s Solidarity Day - May 1
- St. George’s Day and the Bulgarian Army’s Day - May 6
- Bulgarian Education and Culture, and Slavic Script Day - May 24