



საქართველოს ტექნიკური უნივერსიტეტი  
GEORGIAN TECHNICAL UNIVERSITY

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### Under-Graduate Educational Programmes

#### Name of the programme

სამთო და გეოინჟინერია

Mining and Geoengineering

#### faculty

სამთო-გეოლოგიური

Mining and Geology

#### Program supervisor

Professor Irakli Gujabadze

#### Awarded qualification and program capacity in credits

(Bachelor in Mining and Geoengineering)

It will be awarded in a combination of 225 credits of the main specialty available in the educational program and 15 credits of free components, no less than 240 credits.

#### The language of teaching

Georgian

#### Prerequisite for the access to the program

The right to study has only the person with state certificate certifying the full general education or the document equivalent to it and will be enrolled in accordance with the rules established by the Georgian legislation.

#### Description of the program

The program lasts for 4 years (8 semesters) and includes 240 credits, of which 225 credits belong to the subjects of basic specialty and 15 are free components. One credit includes 25 hours by EGTS system.

Every academic year includes 60 credits. Each year of academic process continues for 40 weeks, the first semester - 20 weeks, the second semester - 20 weeks. The teaching process of the subject in every semester continues for 15 weeks. The 8th Week is for mid-assessment, which includes current

activities and mid-term exam. The maximal score of current activity is 30 points, the minimal total assessment is 15 points. The maximum assessment of the mid-term exam is 30 points and the minimum positive assessment is 7,5 points. XVII week –submission of documentary material. XVIII week - the final exam is provided , maximum assessment-40 points, minimal -10 points.

If the student failed to pass the score of 51 points on final exam, got the 41-50 points, which means that the student needs more work to pass, and he / she is given the right to pass an additional exam with independent work.

The additional examination shall be appointed on the schedule of the final resetting examination at least 5 days after the final test results are declared.

In the II semester, 10 credits are given to the speciality subjects out of 60 credits from the first academic year: basics of Geology 4 credits; basics of Oil and Gas Geology 3 Credits. The remaining 50 credits are distributed to general subjects as following: Mathematics is taught in two semesters (5-5 credits); Elective Foreign Language - in two semesters (3-3 credits), General physics - two semester (4-4 credits); General Chemistry - 4 credits in I Semester; Computer Technologies - 4 credits in I Semester Computer Engineering Graphics - 3 credits in I Semester, Environmental protection and ecology - 3 credits in 1 semester; Engineering Geodesy- 3 credits in 1 semester, 6 credits in II semester; Elective humanitarian subjects - 3 credits in II semester

In the second year, , 3 credits are given to general technical elective subjects out of 60 credits , the remaining 57 credits are for specialty subjects.

60 credits of the third academic year are intended for the speciality subjects of 5 elective modules.

30 credits (43 subjects The student should choose 6 things he/she wants)out of 60 credits of fourth academic year in the XVII semester are given to the elective professional subjects. In the VIII semester: 15 credits are given to the free credits (13 subjects you must choose only 3 things), 10 credits are for production practice, 5 credits are for bachelor works.

### **The purpose of the program**

- Acquire the theoretical and practical knowledge of the educational program in basic and special issues of mining and geoen지니어ing;
- Acquire modern theoretical and laboratory methods of research in mining and geoin engineers;
- Developing independent work skills with relevant profile; assimilating the practical aspects of the field like as: Search the solid, liquid and gaseous minerals, ore processing and re- processing technologies, cars and transport systems, mining and underground construction; automation of mining enterprises, mining electromechanics, transport, machines and installations, planning of mining works, search for oil and gas fields, processing, enrichment of minerals, exploitation of pipelines and gas-holders, transportation and storage, labor safety and protection.

### **Learning Outcomes / Competences (General and Sectoral)**

#### **Knowledge and understanding:**

- Theoretical and practical knowledge of the mining and geoen지니어ing field, which is based on the technological aspects and the processes of mechanic engineering manufacturing of the mining machines.
- Knowledge of theoretical and standard practical issues of treatment and processing of minerals and understanding the characteristics of individual mining processes;
- Wide knowledge of mining machinery, stationary equipment, electrical mechanics and

automation sphere of manufacturing process;

- Knowledge of labor safety issues;
- Knowledge of the methods of searching minerals and engineering geological studies.

**Ability using the knowledge in practice:**

- Ability to participate in separate technological processes of processing and reprocessing of solid, liquid and gaseous minerals. Ability to find the necessary technical literature and use it in practical activities;  
Performing standard technological processes (Tunneling-reinforcement, underground and open source processing of minerals, extraction and transportation of solid and gaseous mineral, transportation, power supply, mining machinery and equipment, enrichment of minerals, labor safety) related to the processing and reprocessing of minerals. Calculate and interpret their basic parameters.
  - Study of engineering-geological conditions of different types of construction design; General assessment of engineering-geodynamic processes (landslide, erosion, raging mountain torrent); General assessment; Determination of possible genetic types of expected mineral accumulation, the supposed forms of ore subjects and elements of spacious orientation;
- Participation in geological search works; Geological service of mining enterprises; Participation in Geophysical Studies;
- Revealing the dangerous and harmful factors and professional risks in enterprises.

**Ability of making judgments**

- Detecting clear technical problems of mining and geoengineering;
- Identify relevant data for solving the technical problems of mining and geoengineering sector using standard methods. Make a substantiated conclusion.

**The ability of communication:**

- Grammatically argued about the theoretical provisions and practical issues of mining and geoengineering;
- Transmitted own opinions and ideas, also acquired qualitative and quantitative information in structured, consistent, logical, laconic and explicit manner to specialists and non-specialists.
- Multilateral use of modern information communication technologies, preparation and submission of information related to the project (report) in foreign language.

**Ability to learn:**

- Ability to study the technical issues of mining and geoengineering independently;
- Determine the direction of their studies to enrich professional knowledge and experience and continue the study at secondary education (master's) degree.

**Values:**

- professional values (labor safety; -the environmental protection; Professional accuracy, punctuality, objectivity, transparency, discipline, etc.)
- to protect the norms of ethics and morals;
- Critical assessment of its own work;

- Giving the right directions to others and sharing business advice while performing the job;
- Participation in the formation of the characteristic values for professional activities, objective assessment of their own and other attitudes.

#### Methods of achieving learning outcomes (teaching and learning)

Lecture   
 seminar (working in the group)   
 Practical   
 Laboratory  
 Practice   
 Course work / project   
 Consultation   
 Independent work

Based on the specific study course in the learning process, the relevant activities of the teaching-learning methods mentioned below are used in the program of the course (in the syllabus):

**Verbal or oral method**- Lecture, dialect, conversation, etc belongs to this method. In this process, the teacher handles the study material, explain the study material, and the students perceive and imbibe it actively by learning, remembering and understanding.

**Discussion / debate**- One of the most common methods of interactive teaching. Discussion process increases the quality and activity of student engagement. The discussion can be transformed into the debate and this process is not limited to the questions asked by the teacher.. It develops the student's ability to reason and justify their opinion.

**Cooperative teaching**- It is a learning strategy when each member of the group is obliged not only to learn himself but also to help his team-mate to study the subject. Each member of the group works on the problem, until all of them acquire the knowledge of the issue.

**Team work** - By using this activity, teaching involves dividing students into groups and giving them the task. The group members work on the issue individually and at the same time they share their opinions with other group members. Depending on the set objective, it is possible to divide the functions among the members of the Group's work process. This strategy ensures the maximum involvement of all the students in the learning process.

**The demonstration method**- This method of activity implies visual representation of information. In terms of achieving the result it is quite effective. In many cases, it is best to provide the materials simultaneously with audio and visual means. The study material can be demonstrated by both the teacher and the student as well. This method helps us to visualize the different levels of learning material, to specify what students will have to do independently; At the same time, this strategy will visually represent the essence of the task / problem. Demonstration may be simple.

**method of analysis** -It helps us to break into pieces the studying material as a whole. This will simplify detailed coverage of individual issues within a difficult problem.

**The synthesis method** implies the creation of one whole group by grouping separate issues. This method promotes the development of the problem as a whole.

**Case study** - The teacher discusses concrete cases with students and they will study and learn all the questions thoroughly.

**Writing work method** - which implies the following activities: Extract and recordings, consolidation of material, composing the thesis , performing essay or abstract etc.

**Explanatory method**- is based on the discussion of the issue. The teacher provides a concrete example of the content of the material, which is discussed in detail within the topic.

**The inductive method** determines such form of transmitting of any knowledge when the course of thinking in the process of studying is directed from the facts to general, so during the explaining the material , the process is directed from concrete to general.

The deductive method determines such form of transmission of any knowledge, which is a logical process of discovering new knowledge based on general knowledge, ie the process is going from general to concrete;

**Action-oriented teaching** - requires active involvement of the teacher and student in the teaching process, where the practical interpretation of the theoretical material is very essential.

**Brain storming** – This activity implies promotion of formulating much more and radically different ideas and opinions about the specific issue / problem within the topic. This activity contributes to the development of a creative approach to the problem. The usage of this kind of activity is very effective in the case of a large number of students and consists of several main stages:

Determining problem / issue in a creative perspective; Within a certain period of time, note without the criticism the ideas expressed by the listeners (mainly on the board); Determination of assessment criteria to determine the relevance of the idea with the aim of the research; Assessment of selected ideas with predetermined criteria; By excluding those ideas that are most relevant to the issue.

Identification of the highest evaluation as the best means of solving the problem.

**Project development and presentation**- When working on the project, the student uses his knowledge and skills to solve the real problem. Teaching by the project enhances student's motivation and responsibility. Working on the project involves planning, research, steps of presenting practical activity and the results in accordance with the selected issue. The project is considered to be implemented if its results are presented in a clear and convincing way. It can be performed individually, in couples or in groups; Also within a subject or within a few subjects (integration of the subjects); After completion, the project can be presented to a wide audience.

#### **The assessment system of students' knowledge:**

assessment is done with a 100-point scale.

- Positive assessments are:
- **(A)** - Excellent - 91-100 score of assessment;
- **(B)** - very good- 81-90 score of assessment;
- **(C)** - good - 71-80 score of assessment;
- **(D)** - satisfactory - 61-70 score of assessment;
- **(E)** - enough - 51-60 score of assessment.
- Negative assessments are:
- **(FX)** - Failed- 41-50 score of assessment, Which means that the student needs more time for work to pass the exam and is given the right to take the exam once more by means of independent work; **(F)** - Failed - 40 score of assessment and less, that means that the work carried out by the student is not enough and he has to study the subject from the beginning.

**Field of employment**

- mining profiling extractive enterprises;
- Oil and gas extractive enterprises;
- construction companies of shafts and underground structures;
- Ministry of Environment Protection and Agriculture of Georgia;
- Ministry of Energy of Georgia;
- Ministry of Defense of Georgia;
- Ministry of Economy and Sustainable Development of Georgia;
- Oil and Gas State Agency;
- Georgian Oil and Gas Corporation.

**Opportunity to continue learning**

Master's Educational Programs

**Human and material resources necessary for the implementation of the program**

The program is provided with appropriate human and material resources. For more information see attached documentation

**Number of attached syllables :168**

## Subject load of the program

№	subject	Precondition for admission	ECTS Credits									
			I year		II year		III year		IV year			
			semester									
			I	II	III	IV	V	VI	VII	VIII		
1.	Mathematics 1.1	do not have	5									
2.	General Physics A	do not have	4									
3.	Computer Technologies	do not have	4									
4.	General Chemistry	do not have	4									
5.	Basics of engineering graphics	do not have	3									
6.	<b>Foreign language:</b> 6.1. English for Technical Specialities - 1 6.2. Russian for Technical Specialities - 1 6.3. German for Technical Specialities – 1 6.4. French for Technical Specialities - 1	do not have	3									
7.	Engineering geodesy 1	do not have	3									
8.	Environment Protection and Ecology 3	do not have	3									
9.	Mathematics 2.1	Mathematics 1.1		5								
10.	General Physics B	General Physics A		4								
11.	<b>Foreign language:</b> 11.1. English for Technical Specialities - 2 11.2. Russian for Technical Specialities – 2 11.3. German for Technical Specialities – 2 11.4. French for Technical Specialities - 2	English for Technical Specialities – 1 Russian for Technical Specialities – 1 German for Technical Specialities – 1 French for Technical Specialities - 1		3								
12.	<b>Elective Humanitarian:</b> 12.1. Academic Writing Elements 12.2. The basics of philosophy 12.3. Introduction to Psychology 12.4. History of Georgia 12.5. Introduction to Sociology 12.6. Culture and modernity 12.7. History of Technical design 12.8. The Modern Language of Communications Technologies	do not have		3								
13.	Engineering geodesy 2	Engineering geodesy 1		6								
14.	Fundamentals of engineering geology and	do not have		3								

	hydrogeology									
15.	Fundamental of geology	do not have		4						
16.	Basic of Oil and Gas Geology	Fundamental of geology		3						
17.	General Geophysics	Fundamental of geology			3					
18.	Underground Mineral Deposits Processing Fundamentals	do not have			4					
19.	Open Mining Processing Basics	do not have			4					
20.	Bases of Physics of Soils	General Physics A			3					
21.	Safety at work in mining enterprises	do not have			3					
22.	Underground Hydromechanics	Fundamental of geology			3					
23.	Methodology of Mapping and Map-reading	Fundamental of geology			4					
24.	Economy and Management in Mining and Geology	do not have			3					
25.	Underground Mines and the Construction of Buildinds Basics	do not have			4					
26.	Fundamentals of mine surveying	Engineering geodesy 2				3				
27.	Foundations of Mining Automatics	Mathematics 2.1				5				
28.	Bore hole Drilling	do not have				3				
29.	Fundamentals of enrichment of minerals	do not have				5				
30.	Mineral Resources Mining and Transport Machines	do not have				5				
31.	<b>Elective Tech:</b> 31.1 General Theoretical Mechanics 31.2. Strength of Materials -1 31.3 Machine elements	Mathematics 1.1				3				
32.	Fundamentals of Mining Electromechanics	General Physics B				5				
	<b>Elective Modules</b>						30	30		
	<b>module 1</b>									
33.	Physics of Rocks and Processes	Bases of Physics of Soils					5			
34.	The Technology of Construction of Underground Structures	do not have					5			
35.	The Process of Underground Mining Works	Underground Mineral Deposits Processing Fundamentals					5			
36.	Mechanics of underground structures	do not have					5			
37.	Open Mining Works Process	Open Mining Processing Basics					5			
38.	Well construction desing	Bore hole Drilling					5			
39.	Destruction of Rocks by Means of Explosion	do not have						5		
40.	Technology of Underground Fossil Works	The Process of Underground Mining							3	



		Works								
41.	Calculation of the Mountings Structures and Tunnels	do not have						3		
42.	Technology of Open Mining Works	Open Mining Works Process						3		
43.	Mining safety and aerologic	Safety at work in mining enterprises						5		
44.	Mining Equipment, Buildings and Structures	Underground Mines and the Construction of Buildinds Basics						6		
45.	Field Geophysics	Fundamental of geology						5		
	<b>module 2</b>									
46.	Bases of Metallurgical Technology – General Metallurgy	do not have						5		
47.	Crystallography, Mineralogy, Petrology	do not have						4		
48.	Enrichment Processes in Fossil Preparation	Fundamentals of enrichment of minerals						5		
49.	Fossil Gravitational Methods	Fundamentals of enrichment of minerals						5		
50.	Enrichment of Magnetic Minerals, Electrical and Special Methods	do not have						3		
51.	Control and management of mining processes	Foundations of Mining Automatics						5		
52.	Automation of Enriching Processes	Foundations of Mining Automatics						5		
53.	Flotation Method of Minerals Dressing	do not have						5		
54.	Enrichment Processes of Technological Sampling - Control	Fossil Gravitational Methods						3		
55.	Automation of mineral extraction processes	Foundations of Mining Automatics						5		
56.	Automation of main oil and gas pipelines	Foundations of Mining Automatics						5		
57.	Geophysical studies in the wells	Fundamental of geology; General Geophysics						5		
58.	Exploratorycore drilling	Bore hole Drilling						5		
	<b>module 3</b>									
59.	Research methods in engineering geology	Fundamental of geology						5		
60.	Soil science	do not have						6		
61.	Genetic type of ore mineral resources	Fundamental of geology						5		

62.	Prospecting and exploration methodology of ore deposits	do not have					4			
63.	Structural methods in geology	Methodology of Mapping and Map-reading					6			
64.	Resources of oil and gas of Georgia	Basic of Oil and Gas Geology					5			
65.	Engineering land improvement	Fundamentals of engineering geology and hydrogeology					5			
66.	Fundamentals of geotechnical engineering	Research methods in engineering geology					5			
67.	Engineering geodynamics	Fundamentals of engineering geology and hydrogeology					5			
68.	Evaluations of minerals in ore deposits	Methodology of Mapping and Map-reading					5			
69.	Structural Factors of Ore Deposits Localization	do not have					4			
70.	geophysical reseach methods and processing of results	Fundamental of geology; General Geophysics					5			
	<b>module 4</b>									
71.	Mining Machines and Complexes	Mineral Resources Mining and Transport Machines					6			
72.	Transport Machines and Complexes	Mineral Resources Mining and Transport Machines					6			
73.	Hydroaeromechanics and Hydro-Pneumo Installations	do not have					5			
74.	Meine Hoist Instollatations	Fundamentals of Mining Electromechanics					5			
75.	Converting equipment in the mining	Fundamentals of Mining Electromechanics					5			
76.	Montage and Exploitation of Drilling Machinery	do not have					5			
77.	Pipeline Transport of Mining	Hydroaeromechanics and Hydro-Pneumo Installations					4			
78.	Principles of Tribology	do not have					4			
79.	Fundamentals of Mining Mechatronics	Hydroaeromechanics and					5			

		Hydro-Pneumo Installations								
80.	Electro supply of mining on terprises	Fundamentals of Mining Electromechanics						5		
81.	Dynamics of the Mining eelectromechanical systems	do not have						5		
82.	Automation of production processes and Means of Means of Technical Management	Converting equipment in the mining						5		
	<b>module 5</b>									
83.	Technic and technology oil and gas production	Basic of Oil and Gas Geology						6		
84.	Physics of oil and gas reservoir	Basic of Oil and Gas Geology						5		
85.	Search and investigation of accumulation of oil and gas 1	Basic of Oil and Gas Geology						3		
86.	Calculation and assessment of resources of oil, gas and condensate	do not have						6		
87.	Grafts Oil and Gas Geology and the Geological Basis for Development of Oil and Gas Fields	Basic of Oil and Gas Geology						6		
88.	Grafts Geophysics	General Geophysics; Basic of Oil and Gas Geology						5		
89.	Search and investigation of accumulation of oil and gas 2	Search and investigation of accumulation of oil and gas 1						6		
90.	Oil and gas pits (wells) drilling technology	do not have						3		
91.	Geophysical investigations in the development of oil and gas fields	Grafts Geophysics						5		
92.	Development of oil and gas fields	Technic and technology oil and gas production						6		
93.	Oil and gas gathering, preparation, transportation	Grafts Oil and Gas Geology and the Geological Basis for Development of Oil and Gas Fields						3		
94.	Drilling solutions	do not have						3		
95.	World's oil and gas provinence	Basic of Oil and Gas Geology						3		
	<b>Group of Selective Specialties Each subject - 5 credits</b>								30	

96.	Mine surveying	Fundamentals of mine surveying								
97.	Modern Techniques and Special Methods of Tunnel Construction	Underground Mines and the Construction of Buildings Basics								
98.	Minerals Processing and Quality	Fundamentals of enrichment of minerals								
99.	Basic of engineering safety	do not have								
100.	Study and Expertise of Landslides Processes	do not have								
101.	Engineering Hydrogeology	Fundamentals of engineering geology and hydrogeology								
102.	Engineering-geological conditions of territory liberation and geological environment	do not have								
103.	Protection of Geological Environment	Environment Protection and Ecology 3								
104.	Planning of Engineering-geological Works	do not have								
105.	Mineralogy and petrology	do not have								
106.	Metal Groups According to their Application in Industry	do not have								
107.	Industrial requirements of the Solid Nonmetallic and fuel useful minerals	do not have								
108.	Managements of Geological Works and the Documentation	Methodology of Mapping and Map-reading								
109.	Mathematical Modeling in Geology	do not have								
110.	Geotectonic together with Geodynamics	do not have								
111.	Geomorphology and Quarternaly Geology	Fundamental of geology								
112.	Petrography, lithology	Fundamental of geology								
113.	Geology of fuel minerals deposits	do not have								
114.	Reliability and Repair of Mining Equipments	Mineral Resources Mining and Transport Machines								
115.	Transport and Storing Economy of Dressing Factories	Mineral Resources Mining and Transport Machines								
116.	Solid Fossil Fuel Processing Technologies	Fundamentals of enrichment of minerals								
117.	Ore Mineral Enrichment Technology	Fundamentals of								

		enrichment of minerals								
118.	Computer Modeling of Mining Processes	Computer Technologies								
119.	Mineral Processing Car and Equipments	do not have								
120.	The geological basis for development of oil and gas fields	do not have								
121.	Inclined direction and horizontal drilling	Bore hole Drilling								
122.	Well completion	Bore hole Drilling								
123.	Modelling of technological processes and innovative technologies	do not have								
124.	Electric Equipment of Chisel Installations	do not have								
125.	Fishing Geological Studies During Drilling	General Geophysics								
126.	Machinery and equipment oil pipelines	do not have								
127.	Oil and Gas Pipelines Exploitation	do not have								
128.	Transfer of Automatization and Means of Technical Management	do not have								
129.	Exploitation of Underground Gas Storage	do not have								
130.	Plasma Technology in Mining	do not have								
131.	Rope and Monorails	do not have								
132.	Basics of Elimages for Mining Enterprises	Fundamentals of Mining Electromechanics								
133.	Avtomatic Eleqtro Driving of Mining Machines	Foundations of Mining Automatics								
134.	Alarms and connections in mining	do not have								
135.	Computer Control of Mining Electromechanical Systems	Fundamentals of Mining Electromechanics								
136.	Oil and Gas wells Drilling Testing and Development	Bore hole Drilling								
137.	Rational Complex Search and Exploration for Oil and Gas	do not have								
138.	Development and operation of oil and gas fields	Basic of Oil and Gas Geology								
139.	<p style="text-align: center;"><i>free credits</i></p> <p style="text-align: center;">Each subject- 5 credits</p> <ol style="list-style-type: none"> <li>1. Numismatics and Bonistics</li> <li>2. Financial institutions and markets</li> <li>3. Administration of Land</li> <li>4. History of religions</li> <li>5. Tourism</li> <li>6. General Technology of Glass and Ceramics</li> </ol>	do not have								15

	7. Cultural Heritage and Tourism 8. Chromatics 9. Culture and modernity 10. Art Enamel 11. Artistic design of jewelry items 12. The basics of industrial aesthetics and ergonomics 13. Teknospero and ecosystem										
140.	Educational practice in mining and geoengineering									10	
141.	Bachelor work in mining and geoengineering									5	
in the semester			29	31	31	29	30	30	30	30	
in a year			60	60	60	60	60	60	60	60	
totally			240								

the map of the results

Nº	Course Title	Knowledge and understanding	Ability using the knowledge in practice	Ability if conclusion	Ability of communication	Ability to learn	Values
1.	Mathematics 1.1	x	x				
2.	General Physics A	x		x		x	
3.	Computer Technologies	x	x			x	
4.	General Chemistry	x	x		x	x	
5.	Basics of engineering graphics	x	x		x	x	
6.	English for Technical Specialities - 1	x	x		x	x	
7.	Russian for Technical Specialities - 1	x	x		x	x	
8.	German for Technical Specialities - 1	x	x		x	x	
9.	French for Technical Specialities - 1	x	x		x	x	
10.	Engineering geodesy 1	x	x	x			
11.	Environment Protection and Ecology 3	x	x				x
12.	Mathematics 2.1	x	x				
13.	General Physics B	x		x		x	
14.	English for Technical Specialities - 2	x	x		x	x	
15.	Russian for Technical Specialities - 2	x	x		x	x	
16.	German for Technical Specialities - 2	x	x		x	x	
17.	French for Technical Specialities - 2	x	x		x	x	
18.	Academic Writing Elements	x	x		x		
19.	The basics of philosophy	x	x				x
20.	Introduction to Psychology	x	x		x		
21.	History of Georgia	x	x	x	x		

22.	Introduction to Sociology	x	x	x			x
23.	Culture and modernity	x	x				x
24.	History of Technical design	x		x			x
25.	The Modern Language of Communications Technologies	x		x		x	
26.	Engineering geodesy 2	x	x	x			
27.	Fundamentals of engineering geology and hydrogeology	x	x	x			
28.	Fundamental of geology	x	x	x		x	
29.	Basic of Oil and Gas Geology	x	x	x			
30.	General Geophysics	x	x	x		x	
31.	Underground Mineral Deposits Processing Fundamentals	x		x		x	
32.	Open Mining Processing Basics	x	x		x		
33.	Bases of Physics of Soils	x		x		x	
34.	Safety at work in mining enterprises	x	x	x			x
35.	Underground Hydromechanics	x	x	x			
36.	Methodology of Mapping and Map-reading	x	x	x			x
37.	Economy and Management in Mining and Geology	x	x	x	x		
38.	Underground Mines and the Construction of Buildings Basics	x			x	x	
39.	Fundamentals of mine surveying	x	x	x			
40.	Foundations of Mining Automatics	x	x	x		x	
41.	Bore hole Drilling	x		x		x	
42.	Fundamentals of enrichment of minerals	x	x	x			
43.	Mineral Resources Mining and Transport Machines	x		x	x	x	
44.	General Theoretical Mechanics	x	x	x		x	
45.	Strength of Materials -1	x				x	
46.	Machine elements	x	x				
47.	Fundamentals of Mining Electromechanics	x	x	x		x	
<b>module 1</b>							
48.	Physics of Rocks and Processes		x	x		x	
49.	The Technology of Construction of Underground Structures	x			x	x	
50.	The Process of Underground Mining Works	x		x		x	
51.	Mechanics of underground structures	x	x			x	x
52.	Open Mining Works Process	x	x		x		
53.	Well construction desing	x	x	x			
54.	Destruction of Rocks by Means of Explosion	x	x		x	x	
55.	Technology of Underground Fossil Works	x	x	x		x	
56.	Calculation of the Mountings Structures and Tunnels	x	x			x	
57.	Technology of Open Mining Works	x	x		x		
58.	Mining safety and aerologic	x	x	x			x
59.	Mining Equipment, Buildings and Structures	x	x			x	
60.	Field Geophysics	x	x	x		x	
<b>module 2</b>							
61.	Bases of Metallurgical Technology – General Metallurgy	x	x	x			x
62.	Crystallography, Mineralogy, Petrology	x	x	x			
63.	Enrichment Processes in Fossil Preparation	x	x	x			x
64.	Fossil Gravitational Methods	x	x	x		x	
65.	Enrichment of Magnetic Minerals, Electrical and Special Methods	x	x	x		x	

66.	Control and management of mining processes	x	x	x			
67.	Automation of Enriching Processes	x	x	x			
68.	Flotation Method of Minerals Dressing	x	x	x		x	
69.	Enrichment Processes of Technological Sampling - Control	x	x			x	x
70.	Automation of mineral extraction processes	x	x	x			
71.	Automation of main oil and gas pipelines	x	x	x			
72.	Geophysical studies in the wells	x		x	x	x	
73.	Exploratorycore drilling	x	x	x		x	
<b>module 3</b>							
74.	Research methods in engineering geology	x		x		x	
75.	Soil science	x	x	x		x	x
76.	Genetic type of ore mineral resources	x	x			x	
77.	Prospecting and exploration methodology of ore deposits	x	x	x			
78.	Structural methods in geology	x	x	x			
79.	Resources of oil and gas of Georgia	x	x	x			
80.	Engineering land improvement	x	x	x			x
81.	Fundamentals of geotechnical engineering	x		x		x	
82.	Engineering geodynamics	x	x	x	x		
83.	Evaluations of minerals in ore deposits	x	x	x			
84.	Structural Factors of Ore Deposits Localization	x	x	x			
85.	geophysical reseach methods and processing of results	x	x	x		x	
<b>module 4</b>							
86.	Mining Machines and Complexes	x	x			x	x
87.	Transport Machines and Complexes		x	x		x	
88.	Hydroaeromechanics and Hydro-Pneumo Installations		x	x		x	
89.	Meine Hoist Instollatations		x	x	x	x	
90.	Converting equipment in the mining	x	x	x			
91.	Montage and Exploitation of Drilling Machinery	x	x			x	x
92.	Pipeline Transport of Mining		x	x		x	
93.	Principles of Tribology	x		x		x	
94.	Fundamentals of Mining Mechatronics	x		x	x	x	
95.	Electro supply of mining on terprises	x	x	x			
96.	Dynamics of the Mining eelectromechanical systems	x	x	x		x	
97.	Automation of production processes and Means of Means of Technical Management		x	x		x	
<b>module 5</b>							
98.	Technic and technology oil and gas production	x	x	x			
99.	Physics of oil and gas reservoir	x	x	x			
100.	Search and investigation of accumulation of oil and gas 1	x	x	x		x	
101.	Calculation and assessment of resources of oil, gas and condensate	x	x	x			
102.	Grafts Oil and Gas Geology and the Geological Basis for Development of Oil and Gas Fields	x	x	x			
103.	Grafts Geophysics	x		x	x	x	
104.	Search and investigation of accumulation of oil and gas 2	x	x	x		x	
105.	Oil and gas pits (wells) drilling technology	x	x	x			x
106.	Geophysical investigations in the development of oil and gas fields	x		x	x	x	



107.	Development of oil and gas fields	×	×	×			
108.	Oil and gas gathering, preparation, transportation	×	×	×			×
109.	Drilling solutions	×	×			×	
110.	World's oil and gas province	×	×	×		×	
<b>Group of Selective Specialties</b>							
111.	Mine surveying	×	×	×			
112.	Modern Techniques and Special Methods of Tunnel Construction	×		×	×	×	
113.	Minerals Processing and Quality	×	×	×			×
114.	Basic of engineering safety		×	×	×		
115.	Study and Expertise of Landslides Processes	×	×			×	×
116.	Engineering Hydrogeology	×	×	×			
117.	Engineering-geological conditions of territory liberation and geological environment	×	×	×		×	×
118.	Protection of Geological Environment	×	×				×
119.	Planning of Engineering-geological Works	×		×		×	
120.	Mineralogy and petrology	×	×	×		×	
121.	Metal Groups According to their Application in Industry	×	×			×	
122.	Industrial requirements of the Solid Nonmetallic and fuel useful minerals	×	×			×	
123.	Managements of Geological Works and the Documentation	×	×	×			×
124.	Mathematical Modeling in Geology	×	×	×			
125.	Geotectonic together with Geodynamics	×	×	×			
126.	Geomorphology and Quarternaly Geology	×	×	×			
127.	Petrography, lithology	×	×	×			
128.	Geology of fuel minerals deposits	×	×			×	
129.	Reliability and Repair of Mining Equipments	×		×		×	
130.	Transport and Storing Economy of Dressing Factories		×	×		×	
131.	Solid Fossil Fuel Processing Technologies	×	×	×			×
132.	Ore Mineral Enrichment Technology	×	×	×		×	
133.	Computer Modeling of Mining Processes	×	×			×	
134.	Mineral Processing Car and Equipments	×		×	×		
135.	The geological basis for development of oil and gas fields	×	×	×			
136.	Inclined direction and horizontal drilling	×	×	×		×	
137.	Well completion	×	×	×		×	
138.	Modelling of technological processes and innovative technologies		×	×	×	×	
139.	Electric Equipment of Chisel Installations	×		×		×	
140.	Fishing Geological Studies During Drilling	×		×	×		
141.	Machinery and equipment oil pipelines	×	×	×			
142.	Oil and Gas Pipelines Exploitation	×	×	×		×	
143.	Transfer of Automatization and Means of Technical Management	×		×		×	
144.	Exploitation of Underground Gas Storage	×	×	×			×
145.	Plasma Technology in Mining	×	×	×		×	
146.	Rope and Monorails	×		×	×	×	
147.	Basics of Elimages for Mining Enterprises	×	×	×			
148.	Avtomatic Eleqtro Driving of Mining Machines		×	×		×	
149.	Alarms and connections in mining	×	×	×			
150.	Computer Control of Mining Electromechanical Systems	×		×	×	×	

151.	Oil and Gas wells Drilling Testing and Development	x	x			x	x
152.	Rational Complex Search and Exploration for Oil and Gas		x	x		x	
153.	Development and operation of oil and gas fields	x	x	x			
<i>free credits:</i>							
154.	Numismatics and Bonistics	x	x	x	x		
155.	Financial institutions and markets	x	x	x	x	x	
156.	Administration of Land	x	x	x		x	x
157.	History of religions	x	x	x	x	x	x
158.	Tourism	x	x	x	x	x	x
159.	General Technology of Glass and Ceramics	x	x	x			
160.	Cultural Heritage and Tourism	x		x			x
161.	Chromatics	x	x	x	x		
162.	Culture and modernity	x			x		x
163.	Art Enamel	x	x	x	x	x	x
164.	Artistic design of jewelry items	x		x			x
165.	The basics of industrial aesthetics and ergonomics	x	x		x		x
166.	Teknospero and ecosystem	x	x		x	x	x
167.	Educational practice in mining and geoengineering	x		x	x		
168.	Bachelor work in mining and geoengineering	x	x	x	x	x	x

## Plan of educational program

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
1.	MAS32508G1	Mathematics 1.1	5/125	15		30				1	1	78
2.	PHS51208G1	General Physics A	4/100	15			15			1	1	68
3.	IGT10303G2	Computer Technologies	4/100	4			26			1	1	68
4.	PHS16404G1	General Chemistry	4/100	15			15			1	1	68
5.	EET78405G2	Basics of engineering graphics	3/75	15		15				1	1	43
6.	LEH14412G1	English for Technical Specialities - 1	3/75			30				1	1	43

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
7.	LEH14612G1	Russian for Technical Specialities - 1	3/75			30				1	1	43
8.	LEH15012G1	German for Technical Specialities – 1	3/75			30				1	1	43
9.	LEH14812G1	French for Technical Specialities - 1	3/75			30				1	1	43
10.	PHS41803G1	Engineering geodesy 1	3/75	15			15			1	1	43
11.	EET20404G1	Environment Protection and Ecology 3	3/75	15			15			1	1	43
12.	MAS32608G1	Mathematics 2.1	5/125	15		30				1	1	78
13.	PHS51308G1	General Physics B	4/100	15			15			1	1	68
14.	LEH14512G1	English for Technical Specialities - 2	3/75			30				1	1	43
15.	LEH14712G1	Russian for Technical Specialities - 2	3/75			30				1	1	43
16.	LEH15112G1	German for Technical Specialities – 2	3/75			30				1	1	43
17.	LEH14912G1	French for Technical Specialities - 2	3/75			30				1	1	43
18.	LEH12112G1	Academic Writing Elements	3/75	15	15					1	1	43
19.	HEL30212G1	The basics of philosophy	3/75	15	15					1	1	43
20.	SOS30312G1	Introduction to Psychology	3/75	15	15					1	1	43
21.	HEL20212G1	History of Georgia	3/75	15	15					1	1	43
22.	SOS40312G1	Introduction to Sociology	3/75	15	15					1	1	43
23.	SOS40112G1	Culture and modernity	3/75	15	15					1	1	43
24.	ART20305G1	History of Technical design	3/75	15	15					1	1	43
25.	LEH12012G1	The Modern Language of Communications Technologies	3/75	15	15					1	1	43
26.	PHS41903G1	Engineering geodesy 2	6/150	15			30	42		1	1	61
27.	PHS34303G1	Fundamentals of engineering geology and hydrogeology	3/75	15		15				1	1	43
28.	PHS31003G1	Fundamental of geology	4/100	15			15	24		1	1	44
29.	MAP46803G1	Basic of Oil and Gas Geology	3/75	15			15			1	1	43
30.	MAP56603G1	General Geophysics	3/75	15		15				1	1	43
31.	MAP54903G1	Underground Mineral Deposits Processing Fundamentals	4/100	15		15				1	1	68
32.	MAP55303G1	Open Mining Processing Basics	4/100	15		15				1	1	68
33.	MAP47703G1	Bases of Physics of Soils	3/75	15			15			1	1	43
34.	HHS22603G1	Safety at work in mining enterprises	3/75	15			15			1	1	43
35.	MAP40803G2	Underground Hydromechanics	3/75	15		15				1	1	43
36.	PHS34003G2	Methodology of Mapping and Map-reading	4/100	15			15			1	1	68
37.	BUA72303G1	Economy and Management in Mining and Geology	3/75	15	15					1	1	43
38.	MAP40603G1	Underground Mines and the Construction of Buildings Basics	4/100	15		15				1	1	68

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
39.	MAP45303G1	Fundamentals of mine surveying	3/75	15			15			1	1	43
40.	MAP41703G1	Foundations of Mining Automatics	5/125	15		30				1	1	78
41.	MAP53703G1	Bore hole Drilling	3/75	15		15				1	1	43
42.	MAP43203G1	Fundamentals of enrichment of minerals	5/125	15			30			1	1	78
43.	MAP54303G1	Mineral Resources Mining and Transport Machines	5/125	30		15				1	1	78
44.	MAS36501G1	General Theoretical Mechanics	3/75	15			15			1	1	43
45.		Strength of Materials -1										
46.		Machine elements										
47.	MAP57403G1	Fundamentals of Mining Electromechanics	5/125	15	30					1	1	78
<b>module 1</b>												
48.	MAP47803G1	Physics of Rocks and Processes	5/125	15		30				1	1	78
49.	MAP40803G1	The Technology of Construction of Underground Structures	5/125	15		30				1	1	78
50.	MAP55003G1	The Process of Underground Mining Works	5/125	15		30				1	1	78
51.	MAP47903G1	Mechanics of underground structures	5/125	15		30				1	1	78
52.	MAP55703G1	Open Mining Works Process	5/125	15		30				1	1	78
53.	MAP51603G1	Well construction desing	5/125	15		30				1	1	78
54.	MAP40903G1	Destruction of Rocks by Means of Explosion	5/125	15		30				1	1	78
55.	MAP54803G1	Technology of Underground Fossil Works	3/75	15		15				1	1	43
56.	MAP41403G1	Calculation of the Mountings Structures and Tunnels	3/75	15		15				1	1	43
57.	MAP55603G1	Technology of Open Mining Works	3/75	15		15				1	1	43
58.	HHS26203G1	Mining safety and aerologic	5/125	15		30				1	1	78
59.	MAP41303G1	Mining Equipment, Buildings and Structures	6/150	30		30				1	1	88
60.	MAP56303G1	Field Geophysics	5/125	15		30				1	1	78
<b>module 2</b>												
61.	EET80704G2	Bases of Metallurgical Technology – General Metallurgy	5/125	30			15			1	1	78
62.	PHS38703G1	Crystallography, Mineralogy, Petrology	4/100	15			15			1	1	68
63.	MAP43003G1	Enrichment Processes in Fossil Preparation	5/125	15			30			1	1	78
64.	MAP42103G1	Fossil Gravitational Methods	5/125	15			30			1	1	78

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
65.	MAP42603G1	Enrichment of Magnetic Minerals, Electrical and Special Methods	3/75	15			15			1	1	43
66.	MAP49803G1	Control and management of mining processes	5/125	15		30				1	1	78
67.	MAP41803G1	Automation of Enriching Processes	5/125	15		30				1	1	78
68.	MAP42703G1	Flotation Method of Minerals Dressing	5/125	15			30			1	1	78
69.	MAP45803G1	Enrichment Processes of Technological Sampling - Control	3/75	15		15				1	1	43
70.	MAP45703G1	Automation of mineral extraction processes	5/125	15		30				1	1	78
71.	MAP49903G1	Automation of main oil and gas pipelines	5/125	15		30				1	1	78
72.	MAP44103G1	Geophysical studies in the wells	5/125	15	30					1	1	78
73.	MAP51103G1	Exploratory core drilling	5/125	15		30				1	1	78
<b>module 3</b>												
74.	PHS34703G1	Research methods in engineering geology	5/125	15		30				1	1	78
75.	PHS34403G1	Soil science	5/125	15			30			1	1	78
76.	PHS33703G2	Genetic type of ore mineral resources	5/125	15			30			1	1	78
77.	PHS32603G2	Prospecting and exploration methodology of ore deposits	4/100	15			15			1	1	68
78.	PHS34103G2	Structural methods in geology	6/150	30			30			1	1	88
79.	MAP56103G1	Resources of oil and gas of Georgia	5/125	15			30			1	1	78
80.	PHS34503G1	Engineering land improvement	5/125	15		30				1	1	78
81.	PHS71503G1	Fundamentals of geotechnical engineering	5/125	15		30				1	1	78
82.	PHS71703G1	Engineering geodynamics	5/125	15		30				1	1	78
83.	PHS33303G2	Evaluations of minerals in ore deposits	5/125	15			30			1	1	78
84.	PHS33903G2	Structural Factors of Ore Deposits Localization	4/100	15			15			1	1	68
85.	PHS71803G1	geophysical research methods and processing of results	5/125	15	30					1	1	78
<b>module 4</b>												
86.	MAP54203G1	Mining Machines and Complexes	6/150	30		30				1	1	88
87.	MAP48503G1	Transport Machines and Complexes	6/150	30			30			1	1	88

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
88.	MAP48603G1	Hydroaeromechanics and Hydro-Pneumo Installations	5/125	15		30				1	1	78
89.	MAP56803G1	Meine Hoist Instollatations	5/125	15		15	15			1	1	78
90.	MAP43803G1	Converting equipment in the mining	5/125	15			30			1	1	78
91.	MAP48703G1	Montage and Exploitation of Drilling Machinery	5/125	15		30				1	1	78
92.	MAP48803G1	Pipeline Transport of Mining	4/100	15		15				1	1	68
93.	MAP48903G1	Principles of Tribology	4/100	15		15				1	1	68
94.	MAP57203G1	Fundamentals of Mining Mechatronics	5/125	15	30					1	1	78
95.	MAP43703G1	Electro supply of mining on terprises	5/125	15			30			1	1	78
96.	MAP57003G1	Dynamics of the Mining eelectromechanical systems	5/125	15		30				1	1	78
97.	MAP52603G1	Automation of production processes and Means of Means of Technical Management	5/125	15		30				1	1	78
<b>module 5</b>												
98.	MAP49003G1	Technic and technology oil and gas production	6/150	30		30				1	1	88
99.	MAP49103G1	Physics of oil and gas reservoir	5/125	15		30				1	1	78
100.	MAP47003G1	Search and investigation of accumulation of oil and gas 1	3/75	15			15			1	1	43
101.	MAP47303G1	Calculation and assessment of resources of oil, gas and condensate	6/150	30			15		15	1	1	88
102.	MAP47203G1	Grafts Oil and Gas Geology and the Geological Basis for Development of Oil and Gas Fields	6/150	30			30			1	1	88
103.	MAP44303G1	Grafts Geophysics	5/125	15	30					1	1	78
104.	MAP47103G1	Search and investigation of accumulation of oil and gas 2	6/150	15			30		15	1	1	88
105.	MAP50803G1	Oil and gas pits (wells) drilling technology	3/75	15		15				1	1	43
106.	MAP44203G1	Geophysical investigations in the development of oil and gas fields	5/125	15	30					1	1	78
107.	MAP49203G1	Development of oil and gas fields	6/150	30		30				1	1	88
108.	MAP49303G1	Oil and gas gathering, preparation, transportation	3/75	15		15				1	1	43
109.	MAP51003G1	Drilling solutions	3/75	15			15			1	1	43
110.	MAP46903G1	World's oil and gas prowince	3/75	15			15			1	1	43
<b>Group of Selective Specialties</b>												

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
111.	MAP45503G1	Mine surveying	5/125	15			30			1	1	78
112.	MAP40703G1	Modern Techniques and Special Methods of Tunnel Construction	5/125	15		30				1	1	78
113.	MAP43603G1	Minerals Processing and Quality	5/125	15			30			1	1	78
114.	MAP49403G1	Basic of engineering safety	5/125	15		30				1	1	78
115.	PHS30703G2	Study and Expertise of Landslides Processes	5/125	15		30				1	1	78
116.	PHS71303G1	Engineering Hydrogeology	5/125	15		30				1	1	78
117.	PHS34903G1	Engineering-geological conditions of territory liberation and geological environment	5/125	15	30					1	1	78
118.	PHS35903G1	Protection of Geological Environment	5/125	15		30				1	1	78
119.	PHS71403G1	Planning of Engineering-geological Works	5/125	15		30				1	1	78
120.	PHS38803G1	Mineralogy and petrology	5/125	15		30				1	1	78
121.	PHS32103G2	Metal Groups According to their Application in Industry	5/125	15		30				1	1	78
122.	PHS32203G2	Industrial requirements of the Solid Nonmetallic and fuel useful minerals	5/125	15		30				1	1	78
123.	PHS32703G2	Managements of Geological Works and the Documentation	5/125	15			30			1	1	78
124.	PHS33203G2	Mathematical Modeling in Geology	5/125	15			30			1	1	78
125.	PHS32203G1	Geotectonic together with Geodynamics	5/125	15		30				1	1	78
126.	PHS30103G2	Geomorphology and Quarternaly Geology	5/125	15		30				1	1	78
127.	PHS37003G1	Petrography, lithology	5/125	15		30				1	1	78
128.	PHS32303G2	Geology of fuel minerals deposits	5/125	15			30			1	1	78
129.	MAP 58103G1	Reliability and Repair of Mining Equipments	5/125	15		30				1	1	78
130.	MAP49503G1	Transport and Storing Economy of Dressing Factories	5/125	15			30			1	1	78
131.	MAP43403G1	Solid Fossil Fuel Processing Technologies	5/125	15			30			1	1	78
132.	MAP43303G1	Ore Mineral Enrichment Technology	5/125	15			30			1	1	78
133.	MAP49603G1	Computer Modeling of Mining Processes	5/125	15		30				1	1	78
134.	MAP49703G1	Mineral Processing Car and Equipments	5/125	15			30			1	1	78
135.	PHS71603G1	The geological basis for development of oil and gas fields	5/125	15		30				1	1	78

№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
136.	MAP50703G1	Inclined direction and horizontal drilling	5/125	15		30				1	1	78
137.	MAP51503G1	Well completion	5/125	15		30				1	1	78
138.	MAP51203G1	Modelling of technological processes and innovative technologies	5/125	15		30				1	1	78
139.	MAP52503G1	Electric Equipment of Chisel Installations	5/125	15		30				1	1	78
140.	MAP47403G1	Fishing Geological Studies During Drilling	5/125	15			30			1	1	78
141.	MAP40103G2	Machinery and equipment oil pipelines	5/125	15		30				1	1	78
142.	MAP40203G2	Oil and Gas Pipelines Exploitation	5/125	15		30				1	1	78
143.	MAP52403G1	Transfer of Automatization and Means of Technical Management	5/125	15		30				1	1	78
144.	MAP40303G2	Exploitation of Underground Gas Storage	5/125	15		30				1	1	78
145.	MAP56903G1	Plasma Technology in Mining	5/125	15			30			1	1	78
146.	MAP58003G1	Rope and Monorails	5/125	15		15	15			1	1	78
147.	MAP40903G2	Basics of Elmages for Mining Enterprises	5/125	15		30				1	1	78
148.	MAP41003G2	Avtomatic Eleqtro Driving of Mining Machines	5/125	15		15			15	1	1	78
149.	MAP40403G2	Alarms and connections in mining	5/125	15		30				1	1	78
150.	MAP40503G2	Computer Control of Mining Electromechanical Systems	5/125	15		30				1	1	78
151.	MAP40603G2	Oil and Gas wells Drilling Testing and Development	5/125	15		30				1	1	78
152.	MAP47603G1	Rational Complex Search and Exploration for Oil and Gas	5/125	15			30			1	1	78
153.	MAP40703G2	Development and operation of oil and gas fields	5/125	15		30				1	1	78
<b>free credits:</b>												
154.	BUA22213G1	Numismatics and Bonistics	5/125	15	30					1	1	78
155.	BUA28113G1	Financial institutions and markets	5/125	15	30					1	1	78
156.	BUA43013G1	Administration of Land	5/125	15	30					1	1	78
157.	HEL10112G1	History of religions	5/125	15	30					1	1	78
158.	PESI0213G1	Tourism	5/125	15	30					1	1	78
159.	EET16004G2	General Technology of Glass and Ceramics	5/125	15	30					1	1	78
160.	PES15813G1	Cultural Heritage and Tourism	5/125	15	30					1	1	78
161.	AAC60106G1	Chromatics	5/125	15					30	1	1	78



№	Course code	Course Title	ESTS credits / hours	Hours								
				Lecture	Seminar (work in the group)	Practical classes:	Laboratory	Practice	Course paper / project	Mid-semester exam	Final exam	Independent work
162.	SOS40513G1	Culture and modernity	5/125	15	30					1	1	78
163.	EET16204G2	Art Enamel	5/125	15			30			1	1	78
164.	ART20405G1	Artistic design of jewelry items	5/125	15	30					1	1	78
165.	HHS24303G1	The basics of industrial aesthetics and ergonomics	5/125	15	30					1	1	78
166.	HHS27903G1	Teknospero and ecosystem	5/125	30	15					1	1	78
167.	MAP56003G2	Educational practice in mining and geoengineering	10/250					120		1	1	128
168.	MAP56103G2	Bachelor work in mining and geoengineering	5/125						45	2	2	76

program Supervisor

Irakli Gujavidze

Faculty Mining-Geology  
Head of Quality Assurance Service

Shalva Keleprishvili

Dean of the faculty

Anzor Abshilava

**Agreed with**  
GTU Quality Assurance Service

Irma Inashvili

**Approved by**  
Mining-Geology  
At the meeting of Faculty Board

30.03.2018

Chairman of the Faculty Board

Anzor Abshilava