



Approved by
Resolution № 733 of the
Academic Council of GTU
dated July 6, 2012

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Resolution № 01-05-04/76 of the
Academic Council of GTU
dated June 22, 2022

Bachelor's Educational Program

Program Title

გეოლოგია

Geology

Faculty

სამთო-გეოლოგია

Mining and Geology

Program head/heads

Professor Nodar FOFORADZE

Qualification to be Awarded and the Extent of the Program in terms of Credits

Bachelor of Geology

will be awarded by combining 227 credits courses corresponding to the education program's primary specialty and 13 credits of free components, if no less than 240 credits are completed.

Language of teaching

Georgian

Prerequisite for Admission to the Program

Only the holder of a state certificate confirming complete general education or an equivalent document enrolled in accordance with the procedure established by Georgia law, shall have the right to study at the Bachelor's Educational Program.

Program Description

The educational program provides the competences defined for the Bachelor's degree according to the framework of higher education qualifications. Bachelor's education is provided in the framework of study courses of the relevant content of the main field of study and within the defined credits of the free components. The educational program is compiled using the ECTS system. 1 credit includes 25 hours, including hours of contact and independent work. The volume of each semester is 30 ECTS credits. The program lasts 4 years (8 semesters). One semester includes 20 weeks, of which 16 weeks are devoted to the study process. The 17th week is devoted to the submission of documentary material and the 18th-19th week to the final exam. If necessary, week XX is devoted to an additional exam. A student will take an additional exam only if he/she has scored between 41 and 50 points after the final exam. The volume of the educational program is 240 credits, of which 227 credits are courses corresponding to the main direction of study and 13 credits are free components.

The maximum grade for each course evaluation in each semester is 100. The maximum grade for interim assessment is 60. The interim assessment consists of two components: a current activity and a mid-term exam. The maximum grade for the current activity is 30, the maximum grade for the midterm exam is 30, and students who pass the minimum competency threshold for the midterm exam (with at least 30 points) are eligible for the final exam. The maximum score of the final exam is 40, the minimum score is 11.

The duration of the first academic year is 2 academic semesters. During two semesters, the student will be offered 12 courses, totaling 60 credits, of which 57 credits are devoted to the study of content courses relevant to the major, including foreign language (one of the electives: English. Language 1 and 2; Russian 1 and 2; German 1 and 2; French 1 and 2) for two semesters, 5-5 credits are given, and 3 credits are given for the study of "Free Component 1" courses.

The duration of the second academic year is 2 academic semesters. The student will be offered 60 credits over two semesters. Of these, 10 credits (5-5 credits) are assigned for an optional foreign language (one of the following: English 3 and 4; Russian 3 and 4; German 3 and 4; French 3 and 4) in both semesters.

The duration of the third academic year is 2 academic semesters. 60 credits are allocated for courses of study in the relevant content of the major, of which 5 credits are included in elective courses in the 6th semester. 10 credits are allocated for two concentration courses.

The duration of the fourth academic year is 2 semesters. Of the 60 credits, 10 credits are assigned to concentration courses and 10 credits are assigned to the bachelor's thesis within the respective concentration. 10 credits are allocated for bachelor's coursework (semester VIII - 10 credits) from "Free Component 2"; the remaining 25 credits are for the courses with content relevant to the primary field of study.

The educational program includes two concentrations:

Concentration 1. Solid Mineral Geology (30 credits);

Concentration 2. Hydrogeology (30 credits).

Each concentration within the 30 academic credits includes 10 credits for the bachelor's thesis.

Program Objective

Program Objective:

- To provide the student with a broad and general theoretical and practical knowledge of the earth in accordance with modern requirements in the field of geology;
- To teach modern methods of geological, geophysical, gemological, field and laboratory research to determine the structure and material composition of the earth;
- To develop students' skills in conducting field work, laboratory processing of geological material using appropriate research methods to solve various problems;
- To develop practical work skills necessary to perform geological tasks to study the composition and structure of the earth.

Learning Outcomes/Competences (general and professional)

- with a broad knowledge of geology, describes the basic features of the formation and development of the earth as a unified system and the processes that occur within it and history;
- understands relevant theories and principles, explores the relationship between different areas of geology, and relates facts and events sought;
- explains basic geologic terminology and summarizes processes occurring in the Earth's core and information about the development and structure of the Earth;
- distinguishes between geologic research methods and the purposes for which they are used;
- uses topographic maps and modern information and communication technologies in conducting geologic field work and laboratory research, including work safety measures (conditions);
- processes and interprets data specific to the field of geology, including new geological scientific and technical information;
- constructs schematic geologic maps, charts, geologic cross-sections, and analyzes results obtained by chamber and laboratory investigations using standard and some latest methods;
- formulates appropriate conclusions in response to complex and unanticipated geologic problems based on the results of geologic field, laboratory investigations, and environmental data collection;
- presents opinions/ideas to specialists and non-specialists in a manner appropriate to the context;
- discusses the application of theoretical statements and principles of geologic disciplines and participates in group work in field and chamber settings.

Regarding the program learning outcomes, by traversing groups of subjects focused on a related topic, the learning outcomes of each concentration are concentrated in the next narrow focus area:

Concentration 1 - Solid Mineral Geology

Describes the morphology of ore bodies, the structure and texture of mineral ores, their distribution in the Earth's crust; considers prospecting methods, lists types of exogenous and endogenous mineral deposits, specifics of their search, industrial types of deposits; establishes diagnostic features of ore minerals, physical, mechanical and optical properties of ores, geological criteria for their search; identifies major ore minerals; Uses appropriate methods of prospecting for deposits.

Concentration 2 – Hydrogeology

Describes methods of hydrogeological investigations, conditions of their use, dependence of groundwater zonation on their physical properties and chemical composition; defines rock filtration coefficient, absolute values of static and dynamic levels, reports hydrogeological parameters, underground water-bearing structures and their varieties; Discusses gradation of hydrogeological investigations, groundwater filtration, aquiferous and water-impermeable rocks, regularities of spatial distribution of groundwater; Analyzes groundwater quality characteristics, level changes and cost dynamics.

Methods of Achieving Learning Outcomes (teaching-learning)

Lecture Seminar (group work) Practical Laboratory
 Practice Course work/Project Consultation Independent work

In the learning process, depending on the specifics of a particular study course program, the following activities of the teaching-learning methods are used, which are outlined in the relevant study course programs (syllabi):

Verbal or oral, discussion/debate, cooperative learning, collaborative work, demonstration, analysis, synthesis, case study, written work, explanatory, inductive, deductive, action-oriented learning, brain storming, project development and presentation.

Student's Knowledge Assessment System

The student's knowledge is assessed on a 100-point scale.

Positive grades are:

- (A) - Excellent - 91-100 points;
- (B) - Very Good – 81-90 points;
- (C) - Good – 71-80 points;
- (D) - Satisfactory – 61-70 points;
- (E) - Sufficient – 51-60 points.

Negative grades are:

- (FX) - Failed to pass – 41-50 points, which means that the student needs more work to pass and is allowed to take an additional exam once with independent work;
- (F) - Failed - 40 points or less, which means that the work done by the student is insufficient and he/she will have to study the subject again

In case of receiving FX, an additional exam is prescribed, not less than 5 days after the announcement of the results. The grade obtained in the additional exam is not added to the grade obtained in the final assessment. Detailed information is provided on the website of GTU.

Fields of employment

Mining and geological enterprises, design and construction companies, ministries of environment and agriculture, defense, finance, economy and sustainable development, environmental and nature protection organizations, oil and gas production companies, relevant specialized educational institutions, municipal service, emergency services, Georgian Railways Department and Georgian Roads Department.

Opportunities for continuing education

Master's degree educational programs

Human and material resources needed to implement the program

The program is provided with adequate human and material resources. For additional information, please find the attached documentation

Number of attached syllabi: 85 .