Ilia State University

School of Natural Sciences and Medicine

Program Level _ Bachelor

Earth Sciences (Major and Minor)

Curriculum

Faculty/School	School of Natural Sciences and Medicine
Program Title	Earth Sciences (Major and Minor)
Academic Degree Awarded	The Degree of Bachelor of Earth Sciences
Program Duration/ECTS	8 semester, **240** credits (1 Credits – 25 hours): ➢ Free component: General module - **60** credits ➢ Main field of study - **120** credits ➢ Minor/ Free components - **60** credits
Launching Date of the Program & Program Update	The program was developed in 2011, updated in 2020. The program can be updated before the start of each academic semester.
Language of Instruction	Georgian
Head/Heads of the Program	Professor Archil Magalashvili

Admissions Requirements

Those wishing to enroll in the program must have passed the Unified National Examinations in accordance with the regulations established by the Ministry of Education, Science, Culture and Sport of Georgia. Detailed information related to the exams will be posted on the website www.naec.ge.

Program Objectives

The Bachelor's program in Earth Sciences (major and minor) is based on an interdisciplinary approach and is focused on preparing graduates who are holistically minded and equipped with problem-solving skills. Its goal is to:

- teach the student the fundamental notions, concepts and modern theories of earth sciences and to show the multidisciplinary and interdisciplinary nature of earth sciences, the scope of application and importance in the socio-economic and environmental context;
- equip students with the skills for identifying and effectively solving problems using quantitative research methods and modern technology;
- prepare students for a successful professional career, including continuing studies in the master's degree;
- equip students with transferable skills such as critical thinking, effective oral and written communication, teamwork, which they will use for career growth, self-development and effective performance in society.

Depending on the needs of the field, the program envisages students acquiring basic knowledge in fundamental sciences (mathematics, physics, chemistry) with a wide range of disciplines in earth sciences and is structured in such a way as to ensure the connection of practical and theoretical knowledge and skills.

Learning Outcomes

Upon completion of the Bachelor's Program - **Earth Sciences (Major and Minor):**

1. The graduate has extensive knowledge of the fundamental concepts, paradigms, theories and principles of the Earth Sciences and the necessary knowledge in chemistry, physics, mathematics and environmental science to study the topic;
2. The graduate can identify links between Earth Sciences and Socio-Economic and Environmental issues, which are manifested, among others, in the human impact on the environment, in determining the causes/processes of geohazards and disasters;
3. The graduate effectively uses modern technologies, computing methods and software packages. Including: Geographic Information System (GIS) and remote sensing methods;
4. The graduate can identify complex problems related to the Earth Sciences, define and assess ways of solving them using scientific approaches in accordance with the pre-defined guidelines;
5. The graduate can collect, describe, analyze and interpret quantitative data/information using a variety of methods;
6. The graduate has basic skills of laboratory and field work, including the use of relevant tools and equipment and adherence to safety regulations;
7. The graduate has the ability to communicate with specialists and the general public through the use of modern information and communication technologies and adherence to the principles of academic and professional ethics;
8. The graduate has the basic ability to work with electronic information bases and other information sources (including scientific literature);
9. The graduate can work effectively independently and in a team, plan and implement the process of broadening the knowledge and the skills.

Program Structure

Program Structure:
Free component: General Module - 60 credits;

Main field of study - 120 credits;

Minor/free components - 60 credits.

General Module - 60 credits:

- *Introduction to Modern Thought I and II — **12 credits***
- *Georgian for Academic Purposes: Academic Skills and Writing Practice - **6 credits***
- *Practical Courses in English Language - **24 credits***
- *Introductory courses - **18 credits** (Concentration - Physics with code INTROENGPHYS;*

Concentration - Introductory Course of Life Sciences with code INTROLF, Concentration - Earth Sciences with code INTROENGESC)

Main field of study - 120 credits:

Compulsory Courses - 96 credits;

Elective Courses from the technological block - at least 12 credits

Elective Courses - 12 credits

Minor / free component (60 credits).

Teaching Methods

In the teaching process of the program, both theoretical and practical teaching is used, and it is focused on providing the student with practical/laboratory or field skills along with the theoretical knowledge. In teaching, priority is also given to the use of new technology.
To achieve the goals set by the program, the following methods are used in the teaching-learning process:

- lectures and seminars;
- practical work, including in the field and in the laboratory;
- working on the project individually and in groups.
- analysis and synthesis.

Note: The teaching methods used in the program are specified in the syllabi of the respective courses.

Student Assessment

The assessment is based on a 100-point system. Points will be distributed and defined as follows:

(A) 91-100 Excellent
(B) 81-90 Very Good
(C) 71-80 Good
(D) 61-70 Satisfactory
(E) 51-60 Sufficient
(FX) 41-50 Insufficient – 41-50 points, more work is required to pass and the student is given one more chance to
retake the exam through independent work
(F) 0-40 Fail – 40 points and less, considerable further work is required and the student has to repeat the course

The assessment components and criteria are given in the syllabi of the training courses.

Employability

A graduate can be employed: in scientific-research, public institutions or any non-governmental or private companies with activities that are related to earth sciences: geology, geophysics, hydrology and hydrogeology, engineering geology, climatology, cartography, mineral exploration and extraction, environmental protection and ecological monitoring, related to geo-information technology, etc.
Graduates of the program can continue their studies at the master's level.

Teaching and Learning Resources

The faculty and the university have a material base that is used in teaching and practical and technical training:

- Well-equipped field and educational-research bases of the university in Akhalkalaki, Stepantsminda, Dedoplistskaro and Grigoleti;
- The Institute of Earth Sciences and the National Center for Seismic Monitoring, which is equipped with modern research and other equipment (differential GPS, seismic search equipment, GPR, bottom scanning sonar and bottom profiling equipment, etc.);
- "Complex Environmental Research" educational-research laboratory;
- Specialized software (QGIS, ArcGIS, MICROMINE, Matlab, etc.);
- Chemistry teaching laboratory;
- Drones of various purposes;

Other material resources of the university are also used in the learning process:

- Lecture halls equipped with modern audio-visual equipment;
- Computer classes;
- University library and international scientific bases;
- Electronic selection system Argus
- Software — Elearning platform, Turnitin, etc.