



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 942 of the
Academic Council of GTU
dated June 28, 2013

Amended by
Resolution № 01-05-04/150 of the
Academic Council of GTU dated
October 12, 2020

Bachelor's Educational Program

Program Title

მათემატიკა

Mathematics

Faculty

ინფორმატიკისა და მართვის სისტემების

Informatics and Control Systems

Program Head/Heads

Professor Shota ZAZASHVILI

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

Bachelor of mathematics

Will be awarded by combining the main specialty (210 credits) and free components (30 credits) provided by the curriculum of the educational program, if at least 240 credits are completed

Teaching Language

Georgian

Prerequisite for Admission to the Program

Only the holder of a state certificate proving complete general education, or an equivalent person 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 program is compiled by the European Credit Transfer and Accumulation System (ECTS). At the Georgian Technical University, 1 credit is equal to 25 hours, which includes both contact and independent work hours. The distribution of credits according to subjects is presented in the curriculum. The program lasts 4 years (8 semesters, 30 credits in each semester) and includes a total of 240 credits.

Program structure. The program includes: compulsory and elective subjects of the specialty, foreign language courses, free components, 4 concentrations (25 credits) and training practice (5 credits).

Academic year schedule: The academic year consists of two, fall and spring semesters.

In each semester, the educational process will be conducted in accordance with the Rector's order regarding the semester's academic schedule.

Program Objective

The objective of the program is:

- Study of general mathematical methods of a wide range of fields of mathematics;
- Development of skills of using general mathematical methods;
- Developing the skills of problem identification, its mathematical modeling and solving using standard and some special mathematical methods.

Learning Outcomes/Competences (general and professional)

1. **Uses** standard methods and principles of differential and integral calculus, algebra, mathematical logic, solution of ordinary differential equations, theory of functions of real and complex variables as well as functional analysis, size theory, probability theory, and statistics;
2. **Selects and uses** standard methods of solving boundary problems of numerical analysis, variational accounting and proprietary differential equations;
3. **Describes** properties of Lebesgue's measure and integral, types of rows and functional spaces, basic methods of harmonic analysis;
4. **Collects** the necessary data, processes information using standard statistical methods, reveals the main characteristic factors and forms a justified conclusion;
5. **Uses** in practice the ways of solving problems related to the Set theory , mathematical logic, theory of models and discrete mathematics;
6. **Uses** potentials and computational methods when solving classical initial-boundary problems of mathematical physics and mechanics of deformable solids;
7. **Forms** the signs of the collection of functional rows and Fourier rows, the structure of topological spaces and spaces equipped with groups of transformations, the qualitative characteristics of measures defined on topological and algebraic structures;
8. **Describes** the evaluation of parameters of stochastic processes and mass service systems using probabilistic and statistical methods;
9. **Forms** various types of algorithms of assertions, algorithms and recursion theory, as well as standard methods of graph theory and combinatorial geometry.

Methods of achieving learning outcomes (teaching-learning)

<input checked="" type="checkbox"/> Lecture	<input checked="" type="checkbox"/> Seminar (group work)	<input checked="" type="checkbox"/> practical	<input checked="" type="checkbox"/> Laboratory
<input checked="" type="checkbox"/> Practice	<input type="checkbox"/> Course work/Project	<input checked="" type="checkbox"/> Consultation	<input checked="" type="checkbox"/> Independent work

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

Verbal or oral method, analysis method, action-oriented teaching, explanatory method, demonstration method, discussion/debate, deductive method, collaborative work, cooperative teaching, written work method.

The above-mentioned activities of teaching-learning methods are given on the web page of GTU.

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 FX, an additional exam is held, not less than 5 days after the announcement of the results. The mark obtained in the additional exam is not added to the mark obtained in the final assessment

Detailed information is provided on the GTU website: Instruction for managing the educational process at the Georgian Technical University

Fields of Employment

A graduate of the bachelor's program in mathematics can be employed:

- In groups of actuaries in insurance firms;
- In data collection, processing and management groups in sociological research centers;
- In the departments of scientific and project-technical organizations that work on standard mathematical modeling tasks, as well as in analytical departments of various public structures;
- In statistical data processing groups in banks and corporations, private firms, financial sector, government-military and medical structures.

Opportunities for continuing education

Master's degree educational programs

Hum Number of attached syllabi: 69

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

Number of attached syllabi: 69
