



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 740 of the
Academic Council of GTU dated
September 5, 2012

Amended by
Resolution № 01-05-04/26 of the
Academic Council of GTU dated
March 24, 2022

Bachelor's Educational Program

Program Title

ინფორმატიკა

Informatics

Faculty

ინფორმატიკისა და მართვის სისტემების

Informatics and Control Systems

Program Head/Heads

Professor, Nino BERAIA

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

Bachelor in Informatics

The bachelor's degree is awarded by combining at least 220 credits of study courses and at least 20 credits of free components, if at least 240 credits are completed.

Language of Teaching

Russian

Prerequisite for Admission to the Program

Only the holder of a state certificate confirming complete general education or a document equivalent to it, who is enrolled in accordance with the procedure established by the legislation of Georgia, has the right to study at the Russian-language undergraduate educational program.

Citizens of Georgia, who have graduated from a Russian-language school, are admitted to the university based on national exams in accordance with Georgian legislation.

Graduates who have passed the minimum limit in mathematics, Georgian language and foreign language on the national exams are enrolled in the program.

For citizens of foreign countries and persons without citizenship, the prerequisites for admission to the educational program are determined in accordance with the rules established by the legislation of Georgia. Candidates who have received a complete general education or its equivalent education in a foreign country are eligible to study at the Russian-language Bachelor's Educational Program.

The applicant must have a certificate confirming knowledge of the Russian language of at least B2 level. A person who has graduated or completed a course/studied a program whose language of instruction was Russian is exempted from the need to present a certificate of competence.

In the absence of a similar certificate or other similar document, the applicant will be interviewed in Russian. The interview is conducted with the temporary commission, which includes the employees of the relevant department of GTU.

The admission of students transferred from other higher educational institutions/programs to the Russian-language Bachelor's educational program is carried out in accordance with the rules established by the order N 10/N of the Minister of Education and Science of Georgia dated February 4, 2010.

Program Description

The Russian-language Bachelor's educational program "Informatics" was created based on the experience of both local and foreign universities in the field and taking into account the requirements of the labor market.

The program is designed according to the European Credit Transfer and Accumulation System (ECTS), 1 credit equals 25 hours, which includes both contact and independent work hours.

The distribution of credits according to educational courses is presented in the curriculum.

The program lasts 4 years (8 semesters, 30 credits per semester) and includes 240 credits.

In order to be awarded the academic degree of "Bachelor of Informatics" within the framework of the Russian-language Bachelor's educational program "Informatics", the student must accumulate at least 240 credits, which ensures the achievement of the goals of the program and the results necessary for the main qualification at the level of the bachelor's degree descriptor of the higher education qualifications framework.

Program structure. The educational program provides credits for both compulsory and elective courses. The ratio of components in the educational program is presented in the following form:

Compulsory and elective education courses – 220 ECTS;

Free components – 20 ECTS.

The purpose of the compulsory education courses is for the student to develop the competencies required for the qualification provided by the program, and it includes:

General university basic courses – 15 ECTS (including foreign language (English language) study to the extent of 10 ECTS);

General technical education courses related to the specialty – 40 ECTS;

Compulsory education courses of the specialty – 70 ECTS;

Industrial internship – 5 ECTS;

Elective education courses in the specialty - 71 ECTS (including four elective concentrations - 20 ECTS, as well as preparation and defense of the bachelor's project - 10 ECTS);

General university elective courses – 19 ECTS (including Georgian, German and French as elective foreign languages with 10 ECTS each. Students enrolled in the educational program on the basis of national exams choose German or French as a second foreign language 10 ECTS credits, and non-Georgian speaking students (citizens of foreign countries) will study the state language of Georgia - Georgian with 10 ECTS credits as a compulsory course.

The purpose of the practical component presented in the educational program is to introduce the student to the environment of future professional activities, to give an opportunity to summarize the education received at the university, to strengthen practical skills, to collect materials for the preparation of a bachelor's project.

The preparation and defense of the bachelor's project enables the student to independently plan and solve a practical task within the scope of his competence, to present a report both in writing and in the form of a presentation, to participate in discussion and be able to justify the obtained results with arguments.

Free components, which are not related to the specialty and give the student the opportunity to acquire knowledge and relevant skills in various fields based on his/her own interests, and include - 20 ECTS.

The educational courses provided by the curriculum of the Russian-language Bachelor's educational program "Informatics" are arranged in a logical sequence, from general to specific and from simple to complex.

The curriculum contains information about the prerequisites for admission to study courses.

The educational process of the first year is defined for:

General university basic courses – 15 ECTS;

General technical education courses related to the specialty – 15 ECTS;

Compulsory education courses of the specialty – 20 ECTS;

General university elective basic courses – 10 ECTS.

The educational process of the second year is defined for::

General technical education courses related to the specialty – 15 ECTS;

Compulsory education courses in the specialty– 21 ECTS;

Elective education courses in the specialty – 14 ECTS;

General university elective education basic courses – 5 ECTS;

Free components – 5 ECTS.

The educational process of the third year is defined for:

General technical education courses related to the specialty – 10 ECTS;

Compulsory education courses – 24 ECTS;

Elective education courses in the specialty – 21 ECTS;

Free components – 5 ECTS.

The education process of the fourth year is defined for:

Compulsory education courses in the specialty –5 ECTS;
Elective education courses in the specialty – 36 ECTS;
Industrial internship 5 ECTS;
General university elective education courses– 4 ECTS;
Free components – 10 ECTS.
The program is conducted in Russian.

Academic year schedule:

Information on the organization of the educational process, assessment of student achievements, educational and financial agreements with students, and the accumulation of credits by students is provided on the basis of the "Instructions for managing the educational process at the Georgian Technical University ", which is posted on the web page.

The academic year consists of two semesters - fall and spring.

Academic year schedule, mid-semester and final/supplementary exam dates are determined at the beginning of each semester by the rector's order.

In the process of preparing the program for reaccreditation, the opinions of students, graduates, and potential employers were taken into account. We also relied on the experience of developing similar programs by well-known foreign universities:

- Massachusetts Institute of Technology, Computer Science and Engineering:
<http://catalog.mit.edu/degree-charts/computer-science-engineering-course-6-3/>
- Santa Clara University, Computer Science and Engineering:
<https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/undergraduate/computer-science-and-engineering-major/>
- The Ohio State University, Computer Science and Engineering:
<http://undergrad.osu.edu/majors-and-academics/majors/detail/39>
- University Of California, Merced, Computer Science and Engineering:
<https://admissions.ucmerced.edu/academics/majors-minors/computer-science-engineering>
- Universidad Carlos III de Madrid (UC3M), Computer Science and Engineering:
<https://www.uc3m.es/bachelor-degree/computer-science#program>
- Kristianstad University (Sweden), Computer Science and Engineering:
<https://www.hkr.se/en/program/TGIT1/curriculum>

Program Objective

The objective of the educational program is to prepare highly qualified specialists who meet the requirements of the labor market, who will be able to maintain and develop the knowledge gained through the educational program and respond to the latest challenges in the field.

- To provide the graduate with knowledge and skills in the field of information and communication technologies to achieve professional success;
- to prepare a highly qualified specialist in the field of information and communication technologies who will be able to solve complex tasks of information systems, IT infrastructure, computer systems and networks, software development;

- To provide the graduate with the ability to effectively use the methods and tools of the field of information and communication technologies in other fields.

Learning Outcomes/Competences (general and professional)

The learning outcomes of the undergraduate Russian-language educational program "Informatics" correspond to the goals of the program:

- Establishes the basics of information and communication technologies, demonstrates knowledge of fundamental theses of natural science and mathematics, which he/she uses to identify, formulate and solve problems related to his specialty;
- Determines a wide range of tasks in the field of information and communication technologies, which includes a critical understanding of software-hardware theories and principles and the latest aspects of knowledge;
- Performs:
 - ✓ identification, formulation and analysis of theoretical and practical problems in various fields;
 - ✓ problem solving processes in accordance with predetermined instructions, using software and hardware means;
- In accordance with predetermined instructions, designs and implements information systems, IT infrastructure, software products, computer and embedded systems;
- Conducts software and hardware, software hardware tools and systems debugging, service and administration;
- Communicates with specialists and non-specialists about ideas, existing problems and solutions in forms appropriate to the context;
- Effectively manages development-oriented professional activities in a group and multidisciplinary context;
- In the conditions of rapid development of technologies, independently determines and plans the need for further education for the purpose of professional and career development.

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 teaching-learning methods are used, which are given in the relevant education course programs (syllabi):

verbal or oral; demonstration; group (collaborative) work; project development and presentation; written work; explanatory; action-oriented learning; analysis; synthesis; discussion/debate; case studies; role-playing and situational games; inductive; deductive; brain storming.

Elements of electronic learning will also be used in the educational program: in some training courses, the teacher will deliver learning materials and assignments to the student and receive the completed assignments by means of Moodle. Also, in some courses where assessments include testing, the Moodle tool will be used.

Activities corresponding to teaching-learning methods are provided on the website of the Georgian Technical University.

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

The program gives graduates the opportunity to be employed:

- All types of organizations (including educational institutions, mobile communication, medical, banking, food, tourism, trade and other manufacturing and service organizations) that need information systems (organizational and production management, business -analysis), web-systems, IT-infrastructure, where planning, designing, implementation, maintenance, administration, service of infrastructure, information and web systems are carried out in the field of information technologies;
- Companies producing software and web products, where development of software products, delivery to other organizations and subsequent implementation, administration, services are carried out;
- Computer systems manufacturing and service companies, where systems are designed, assembled, delivered to other organizations, further maintained, administered and serviced;
- Companies producing various types of IT-infrastructure components.

Opportunities for continuing education

Graduates are given the opportunity to continue their studies at master's degree 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.