Computing and Information Technologies

Bachelor's Educational Programme | 240 credits | Georgian Technical University

Programme admission prerequisite

The prerequisites for admission to the bachelor's educational programme are:

- Passing the unified national examinations in accordance with the procedure established by the legislation of Georgia: in mathematics or physics; in the Georgian language; in a foreign language (English).
- Enrolment on the programme may take place through internal and external mobility, in accordance with the regulations established by the Ministry of Education and Science of Georgia and by Georgian Technical University.
- Enrolment on the programme without passing the unified national examinations is possible in accordance with the procedure established by the Ministry of Education, Science and Youth of Georgia.

Programme objectives

- To prepare a competitive specialist with systemic, fundamental, theoretical and practical knowledge for practical and research activity on the local and international labour market, in the main directions of information technologies: programming, databases, web technologies and computer networks, taking into account the main theoretical and technological principles of human-computer interaction;
- To provide the graduate with knowledge of the practical and research issues of information technologies;
- To develop in the graduate the skills of analysis and research of objects in the field of information technologies.

Learning outcomes / competences (general and professional)

The learning outcomes correspond to the objectives and content of the educational programme; they are measurable and achievable, and they correspond to the relevant qualification level and to the academic degree to be awarded.

Upon completion of the programme, the graduate:

1. Demonstrates broad knowledge of information technologies, by means of which he/she defines the issues connected with the main directions of information technologies;
2. Using standard and the latest methods, and on the basis of systemic knowledge, identifies and formulates the tasks to be solved in the main areas of information technologies;
3. On the basis of the acquired knowledge, analyses user requirements in databases, computer networks and web technologies;
4. Solves practical tasks in accordance with predetermined instructions, using the tools of the main areas of information technologies;
5. Together with a group, carries out the design, development and management of software systems, databases, web systems and computer networks;
6. Presents documentation clearly and in full compliance with linguistic norms, and presents knowledge to the academic and professional community, taking ethical issues into account;
7. Plans his/her own development using information technologies and/or in the theoretical field.

Student knowledge assessment system

Assessment is carried out on a 100-point system.

Assessment of the learning component — positive grades:

- 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:

- (FX) Did not pass — 41–50 points, which means that the student needs to do more work in order to pass and is granted the right to sit an additional examination once on the basis of independent work;
- F. Failed — 40 points or fewer, which means that the work carried out by the student is not sufficient and he/she must study the subject anew.

A student who does not agree with the assessment of the learning outcomes is entitled, within five working days of being informed of the assessment result, to apply to the dean with a reasoned complaint and to request a review of the results, link: https://www.gtu.edu.ge/uploads/2026/03/appeal-restore.pdf

Detailed information about the assessment system is provided in the Instruction for the Management of the Learning Process at Georgian Technical University, link: https://www.gtu.edu.ge/students/stsavleba-da-mkhardachera/sastsavlo-protsesi/sauniversito-maregulirebeli-dokumentebi/

Practice is assessed in accordance with the GTU Rule for Conducting and Assessing Student Practice and in accordance with the procedure and criteria described in the relevant syllabus, link: https://www.gtu.edu.ge/students/stsavleba-da-mkhardachera/sastsavlo-protsesi/pormebi-instruqtsiebi/

The defence of the bachelor's thesis is assessed in accordance with the Rule for Carrying Out a Bachelor's Research Project/Thesis, link: https://www.gtu.edu.ge/uploads/2026/03/sabakalavro-kvlevithi-proeqtisnashromis-shesrulebis-tsesi.pdf

Curriculum

Where several subjects are listed in one row, they form an elective group sharing the same credit value.

Subject	Credits
Engineering Mathematics 1	5
General Physics A	4
Introduction to Information Technologies	4
Computer Architecture and Organisation (CIT)	5
Fundamentals of Programming (based on C/C++) (CIT)	5
Elements of Academic Writing	3
English Language 1	5
Engineering Mathematics 2	5
General Physics B	4
Data Structures and Algorithms (CIT)	5
Fundamentals of Operating Systems (CIT)	5
Fundamentals of Web Programming: HTML5, CSS, JavaScript	5
English Language 2	5
English Language 3	5
Database Design and Management (based on SQL Server)	5

Ethics in Information Technologies	5
Object-Oriented Programming (Java) (CIT) Object-Oriented Programming C# (CIT)	5
Programming Based on the Multifunctional Python Language	5
Web Design (UI & UX)	5
Database Administration (MS SQL)	5
Web Programming (based on PHP) Web Technologies (Django Framework) Programming of Web Applications in the .NET Environment	5
Programming of Information Systems (based on Java) Programming of Information Systems (in C#) Fundamentals of Computer Networks (CIT)	5
Principles of Economics Applied Psychology History and Culture of Georgia Sociology Introduction to Philosophy	5
English Language 4	5
Programming Using the Laravel Framework Creation and Management of Web Pages (WordPress)	5
Applied Statistics and Data Analysis Based on Python	5
Fundamentals of Artificial Intelligence (CIT)	5
Administration of Computer Networks (CIT)	5
Non-Relational Databases	5
Elements of Discrete Mathematics	5
Fundamentals of Software Engineering	5
Programming of Mobile Applications for Android Programming of Mobile Applications for iOS	5
Big Data Storage and Processing Systems	5
Internet of Things (CIT)	5
Fundamentals of Information Security	5

(CIT)	
Human-Computer Interactions (CIT)	5
Industrial Practice (CIT)	5
Analytical Services in Databases (CIT)	5
Computer Management of Projects	5
Cybersecurity Challenges	5
Blockchain and Its Applications (CIT) Cloud and Grid Technologies (CIT)	5
Free Component 1	5
Bachelor's Project (CIT)	10
Management of Information Systems — DevOps	5
Management of Information Technology Services	5
Coding and Encryption in Crypto Systems Organisation of Communication Networks Artificial Intelligence in Computer Games Oracle Database Management System	5
Free Component 2	5
TOTAL	**240**

Free components

Subject	Credits
Business Communication	5
European Civilisation	5
Electronic Government	5
Cultures and Organisations of the Modern World	5
Computer Accounting	5
Fundamentals of Marketing	5
Ethics of Hospitality and the Art of Negotiation	5
World Civilisations	5
Fundamentals of Project Management of Organisational Information Technologies	5
Religion and Political Processes in Europe	5
History of Religions	5
Business Correspondence	5
Fundamentals of Creative Thinking	5

Digital Economy	5
Artificial Intelligence in Robots	5
Artificial Neural Network — What Is It?	5