Admission Prerequisite

Admission to the Bachelor's educational programme 'Electrical and Electronic Engineering' is open only to holders of a state certificate confirming complete general education or an equivalent person who are admitted in accordance with the procedure established by the legislation of Georgia.

An additional admission prerequisite is English language proficiency at B1 level, or an internationally recognised certificate confirming English proficiency at a level of at least B1.

Programme Objective

The educational programme aims to:

- Prepare students for successful careers in the electrical and electronic industries in accordance with labour market requirements and encourage them to further their higher education; provide broad knowledge of natural sciences and mathematics necessary to formulate, solve and analyse electrical and electronic problems;

- Raise students' awareness of professional ethics in acquiring knowledge and practising professionally; develop their ability to identify complex engineering problems, find solutions and ensure the efficient operation of electrical equipment using modern technologies.

Learning Outcomes/Competences (General and Professional)

1. On the basis of broad knowledge acquired in engineering and the exact and natural sciences, identifies, formulates and solves complex engineering problems in electrical and electronic engineering.
2. Describes the operating principles of electrical and electronic equipment and systems, and participates in developing solutions relating to public safety, health and welfare needs, considering global, cultural, social, environmental and economic factors.
3. Communicates effectively with a broad range of audiences to identify complex relationships within engineering systems and their impacts.
4. Can recognise ethical and professional responsibilities in engineering situations and make informed decisions that consider the impact of engineering solutions in global, economic, environmental and social contexts.
5. Can function effectively on a team whose members jointly provide leadership, create a collaborative and inclusive environment, plan tasks, establish goals and achieve them.
6. Participates in developing and conducting appropriate experiments to identify clearly defined problems characteristic of electrical and electronic engineering and determine solutions. On the basis of data analysis, draws appropriate conclusions about the technical condition and operability of electrical equipment, networks and systems, the regulation of operating parameters, and ways to improve the system's technical

characteristics;

7. Consistently and comprehensively evaluates and plans the process of deepening professional knowledge for development, considering global technological achievements and using appropriate learning strategies.

Student Knowledge Assessment System

Student 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) - Did Not Pass - 41-50 points, meaning that the student needs more work to pass and is entitled to take one additional examination after independent study;

(F) - Fail - 40 points or less, meaning that the work completed by the student is insufficient and the student must retake the course.

If an FX grade is received in a component of the programme, an additional examination is scheduled no earlier than 5 days after the results are announced. The grade obtained in the additional examination is not added to the score obtained in the final assessment. The additional examination grade constitutes the final assessment and is reflected in the final grade for the programme component. If the final grade for the educational component, taking the additional examination grade into account, is 0-50 points, or the student does not meet the minimum competence threshold in the final/additional examination, the student is assigned an F grade of 0 points.

Assessment of the level of achievement of learning outcomes in each programme component includes interim and final assessments. The interim assessment includes ongoing activities and a mid-semester examination. Each assessment form and component is assigned a share of the total score (100 points) in the final assessment. Specifically, the maximum interim assessment score is 60, while the maximum final examination score is 40. Each assessment form has a minimum competence threshold specified in the respective course syllabus. A student may take the final examination if they have obtained at least the minimum positive grade in the interim assessment component(s) in accordance with the course syllabus, and have completed and submitted on time the minimum required assignments in documentary form.

Detailed information is available at the following electronic address: 'Instruction on the Management of the Educational Process at Georgian Technical University'.

https://www.gtu.edu.ge/uploads/2026/03/educational-process2.pdf

Course	Credits
Calculus 1EE	8
General Physics 1A	7
Special Course in the State Language	5
Foreign Language (English) - B2.1	5
Introduction to Electrical and Electronic Engineering	4
Calculus 2EE	7
General Physics 2B	6
Fundamentals of Business Management	4
Foreign Language (English) - B2.2	5
Applied Informatics	5
General Chemistry A	4
Discrete Mathematics EE	7
Linear Algebra LA	5
Applied Physics – Electromagnetism	8
Circuit Analysis 1	5
Professional English – Electrical and Electronic Engineering	5
Probability Theory and Mathematical Statistics PS	5
Ordinary Differential Equations DE	5
[Compulsory Elective Courses Corresponding to the Main Field of Study] Circuit Analysis 2 [Circuit Analysis 2]	5
Energy SCADA Systems	5
Fundamentals of Engineering Electronics	5
Fundamentals of Programming (Based on C++)	5
Compulsory Elective Courses with Content Corresponding to the Main Field of Study	5

Electrical Energy Conversion (Electrical Machines) [Electrical Energy Conversion (Electrical Machines)]	
Electrical Systems]	5
Electric and Magnetic Fields in Electrical Engineering	4
Power Electronics	5
Introduction to Systems Engineering	4
Professional Ethics	4
Fundamentals of Occupational Safety	3
Compulsory Elective Courses with Content Corresponding to the Main Field of Study Modelling and Simulation of Electrical Systems [Power System Modeling and Simulation]	5
Analysis and Design of Electronic Circuits	5
Cybersecurity in Electric Power Systems	4
Analysis of Electrical Equipment Using Applied Software Packages LabVIEW, MULTISIM, Matlab	5
Renewable Energy Sources	3
Electromagnetic Ecology	5
Elective Free Components History of Georgia Introduction to Psychology Introduction to Sociology	3
Electrical System Analysis	5
Engineering Project Management	5
Compulsory Elective Courses with Content Corresponding to the Main Field of Study Relay Protection of Electrical Systems [Power System Protective Relaying]	5
Electrical System Planning [Power System Planning]	5
Application of Microcontrollers in Electrical Engineering	5
Introduction to the Bachelor's Thesis	5

Electrical System Dynamics	6
Microprocessor Control Systems	5
Technical Diagnostics of Electrical and Electronic Devices	6
Bachelor's thesis	10
Elective Free Components Fundamentals of Philosophy Environmental Protection and Ecology	3
Total	240