Admission Prerequisite

Admission to a Bachelor's degree programme is open to holders of a state certificate confirming complete general education or an equivalent document who are admitted in accordance with the procedure established by the legislation of Georgia.

Programme Objective

Objective 1: To provide graduates with knowledge of the techniques and methods of carrying out the main construction technologies for the erection, assembly and fitting-out of public, commercial, industrial and residential structures, the rules for selecting the necessary construction machinery, the safe conduct of works, quality control of the execution of works, the technologies for maintaining the structures of buildings and facilities, and the main issues of construction organisation and management.

Objective 2: With broad knowledge of the field of construction engineering and in accordance with predefined instructions, to equip graduates with the ability to implement construction projects of a practical nature, taking into account the requirements governing environmental protection, safety and welfare, as well as global, cultural, social, environmental and economic factors;

Objective 3: To give graduates a solid foundation for continuing their studies at the next level and for continuous professional development, so that they may contribute, through the education received, to the proper functioning of the construction complex.

Learning Outcomes/Competences (General and Professional)

1. With broad knowledge of the field of construction engineering, critically comprehends the theories and principles of the field;
2. Explains some of the latest aspects of construction engineering, which involve the assembly and erection of public, commercial, industrial and residential structures (as well as their fitting-out) and the technology and techniques of their maintenance;
3. In the field of construction engineering, using cognitive and practical skills and standard and some of the latest methods, solves complex and unforeseen problems in a way that meets the requirements governing the population's environmental protection, safety and welfare, taking into account global, cultural, social, environmental and economic factors;
4. In accordance with predefined instructions, plans and conducts an experiment, carries out a project of a practical nature and, using standard and some of the latest methods and professional judgement, interprets the analysis of the data obtained and formulates appropriate conclusions;
5. In compliance with ethical, labour and safety standards, selects building materials, technologies and equipment in construction engineering, and participates in carrying out construction processes, the assembly of structural elements, the erection and fitting-out of buildings, construction quality control, assessment and technical expertise;
6. With an understanding of the specific features of construction tenders, contracts and professional licensing, explains issues of construction management and analyses situations on the basis of knowledge of construction economics, construction organisation and management, and the principles of doing business;
7. Communicates clearly and comprehensibly with audiences of specialists and non-specialists, in forms appropriate to the context and using information and communication technologies, about ideas related to the field, existing problems and ways of solving them;
8. On his or her own responsibility and in compliance with the principles of professional ethics, is involved in activities oriented towards team development, and together with the team members participates in creating

a collaborative environment and in accomplishing the tasks set;

9. Plans continuous professional development, determines his or her own further learning needs and pursues them with a high degree of independence.

Student Knowledge Assessment System

Assessment is based 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 a student receives FX in a component of the educational programme, GTU is obliged to schedule the additional examination no fewer than 5 days after the results of the final examination are announced.

The number of points obtained in the final assessment is not added to the grade the student receives in the additional examination.

The grade received in the additional examination is the final grade and is reflected in the final assessment of the component of the educational programme.

If, taking into account the grade received in the additional examination, the student obtains 0-50 points in the final assessment of the educational component, or if the student fails to pass the minimum competence threshold in the final/additional examination, the student is awarded the grade F-0 points.

In each component, the programme part of assessing the level of achievement of the student's learning outcomes consists of the mid-term assessment and the final examination. The mid-term assessment, in turn, comprises ongoing activity and the mid-semester examination.

Each form and component of assessment has a defined share in the final assessment out of the total assessment score (100 points). Specifically, the maximum score for the mid-term assessment is no more than 60, while the maximum score for the final examination is no less than 40.

Each form of assessment comprises an assessment component/components, which comprise an assessment method/methods, and the assessment method/methods are measured by assessment criteria.

The right to sit the final examination is granted to a student who has accumulated no less than the minimum positive grade in the component(s) of the mid-term assessment(s) in accordance with the course syllabus (no fewer than 30 points in total) and has, in addition, completed and submitted on time, in the form of documentary material, the minimum of work specified by the syllabus.

Detailed information is available at the following electronic address:

"Instruction for the Management of the Educational Process at Georgian Technical University"

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

Course	Credits
Engineering Mathematics 1	5
General Physics A	4
General Chemistry A	4
Engineering Mathematics 1	5
English Language 1	5
German Language 1	
French Language 1	
Russian Language 1	
Descriptive Geometry	3
Fundamentals of Programming in Construction	4
Geodesy 1	3
Professional and Business Communication	3
Introduction to Psychology	3
Fundamentals of Philosophy	
Introduction to Sociology	
History of Georgia	
Elements of Academic Writing	
Culturology	
History of Technical Design	
Fundamentals of Politics	
History of World Art	
Engineering Mathematics 2	5
General Physics B	4
English Language 2	5
German Language 2	
French Language 2	
Russian Language 2	
Construction Drawing	4
Geodesy 2	3
Theoretical Mechanics (Statics)	5

Course	Credits
Probability Theory and Applied Statistics	5
English Language 3	5
German Language 3	
French Language 3	
Russian Language 3	
Building Materials 1	3
Theoretical Mechanics (Dynamics)	5
Engineering Computer Graphics	3
Strength of Materials 1	4
Engineering Geology and Soil Mechanics	3
Introduction to Construction	3
Strength of Materials 2	4
Bases and Foundations	3
Building Materials 2	3
Structural Mechanics 1	3
Computer-Aided Calculation of Construction Engineering Problems	6
General Hydraulics	4
Fundamentals of Hydrology	3
Architecture of Buildings and Structures	3
Fundamentals of Transport Infrastructure Construction	6
Fundamentals of Hydraulic Engineering Construction	5
Construction Machinery and Equipment	5
Construction Processes	5
Structural Mechanics 2	5
Timber, Plastic and Lightweight Structures	5
Reinforced Concrete and Masonry Structures	5
Metal Structures	5
Fundamentals of Engineering Safety in Construction	4
Construction Tenders, Ethics and Contracts	3
Principles of Doing Business	3

Course	Credits
Engineering Services of Buildings and Structures	3
Fundamentals of Water Supply and Sewerage	3
Environmental Protection and Ecology	3
Construction Economics	5
Construction Organisation and Management	5
Pre-Bachelor's Practice	5
Professional Licensing and Quality Control in Construction	4
Environmental Impact Assessment Requirements in Construction	3
Fundamentals of Construction Assessment and Technical Expertise	3
Bachelor's thesis	5
Heating and Heat Supply	5
Ventilation and Air Conditioning	5
Structural Arrangement of Railway Track	6
Metal Buildings and Structures	5
Pricing and Cost Estimating in Construction Engineering	5
Fundamentals of Railway Design	3
Railway Construction Technology	6
Small-Scale Mechanisation Equipment in Construction	5
Construction Technology of Motor Roads and Aerodromes	5
Fundamentals of the Design of Motor Roads and Aerodromes	5
Arrangement of Tunnel Crossings	6
Sea Ports and Structures	5
Quality Control of Construction Works on Motor Roads	5
Construction and Repair Works	5
Comprehensive Mechanisation of Construction	5
Modern Methods of Construction Production	5
Fundamentals of the Calculation of Transport Tunnels	3
Construction Technology of Transport Tunnels	6
Methods of Investigation and Control of Building Materials	5
Bridge Crossings and Small Road Structures	6

Course	Credits
Technical Supervision of Construction	5
Reinforced Concrete Buildings and Structures	5
Thermal Regime of Buildings	5
Technology of Erecting Buildings and Structures	5
Restoration and Strengthening of Buildings and Structures	5
Diagnostics of Damage to Buildings and Structures	5
Technical Operation of Buildings and Structures	5
Calculation of a Low-Rise Multi-Apartment Residential Building Using the "SOFISTIK" Software	5
Construction of Sewerage Systems	5
Water Supply and Sewerage Systems	5
Construction of Water Supply Systems	5
Bridge Construction Technology	6
Construction Cranes and Mechanisms	5
Fundamentals of Bridge Calculation	3
Hydroelectric Power Plants	5
Hydraulic Structures	5
Gas Supply	5
Risk Management and Methods of Optimal Decision-Making	5
Maintenance of Railway Track	5
Maintenance of Motor Roads and Aerodromes	5
Maintenance of Transport Tunnels	5
Seismic Resistance of Building Structures	5
Operation of Water Supply and Sewerage Systems	5
Maintenance of Bridges	5
Waterproofing, Thermal Insulation and Facing Materials	5
Production and Organisation of the Construction of Hydraulic Structures	5
Technological Machinery and Equipment of Building Materials and Products Enterprises	5
History of the Earth	3
History of Railway Construction	3
Construction and Culture	4

Course	Credits
Fundamentals of Forensic Construction and Technical Expertise	4
Green Construction	3
Monuments of Georgian Architecture	5
Style in Architecture	5
Introduction to Colour Science	5
Hydrogeology	5
Heating with Renewable Energy	5
Lifts and Energy Supply of Buildings	5
Marketing in Construction	5
Water Ecology	5
Testing of Buildings and Structures	5
Construction and the Environment	5
Fundamentals of Informatics	5
Protection of Water Resources	5
The Hydropower Sector and the National Economy	5
History of Metro Construction	3
Strategy for Success	3
Hydraulic Engineering in Energy and Land Reclamation	5
History of Road Construction	4
Bank Protection and River Training Structures Protecting the Roadbed from Washout	5
History of the Development of Engineering Structures	4
Total	**240**