



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution # 1933 of the
Academic Council of GTU
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dated September 21, 2023

Master's Educational Program

Program Title

მშენებლობის ინჟინერია და მენეჯმენტი

Construction engineering and management

Faculty

სამშენებლო

Civil Engineering

Program Head/Heads

Professor Murman BAKRADZE

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

Master of Construction Engineering and Management

Will be awarded in case of completion of at least 120 credits of the educational program

Language of Teaching

Georgian

Prerequisite for Admission to the Program

A person with at least a bachelor's degree or equivalent academic degree, who is enrolled based on the results of the master's exams (common master's exam and exam/exams determined by GTU), has the right to study in the master's program. Exam questions/tests will be posted on the website of the Teaching Department of GTU at least one month before the exams. Enrollment in the program without passing the master's exams is possible according to the rules established by the Ministry of Education and Science of Georgia.

It is mandatory to present a certificate/document confirming knowledge of a foreign language at the B2 level (English, German, French, Russian). Applicants who have received education abroad (have completed a foreign language program) are not required to pass an exam or present a certificate; The applicant, who cannot present the mentioned certificate, is obliged to pass the test in one of the foreign languages (English, German, French, Russian) at the computer center of GTU.

Program Description

Study duration:

The duration of the program is determined by 2 years (4 semesters)

The semester includes 20 weeks. There are 15 academic weeks (auditory classes) and 5 sessional (mid-semester, final and additional exams) during one semester at GTU. Practice, depending on its specificity, can be carried out both during academic weeks and at other times.

Program volume in credits:

The program is designed according to the European Credit Transfer System (ECTS), 1 credit equals 25 hours and includes contact and independent work hours. The distribution of credits is presented in the curriculum. According to the master's educational program, the student acquires at least 120 (ECTS) credits. The educational program includes both educational and research components: educational component - 90 (ECTS) credits, research component - 30 (ECTS) credits;

Program structure:

The program includes:

1. Compulsory courses of content corresponding to the main field of study and master's pre-practice: 90 (ECTS) credits;

2. Research component (30 credits):

The research component is a constituent part of the master's education program, which involves research works to be carried out around a pre-selected topic. It is aimed at developing the student's ability to make independent theoretical and practical reasoning and conclusions. The final stage of the research component includes the completion of the master's thesis, submission to the relevant commission and defense.

Program Objective

The objective of the interdisciplinary master's program is:

To prepare highly qualified managers of investment and construction projects, implementing construction activities, with systematic and in-depth knowledge of construction.

1: To provide graduates with the practical skills of project preparation, planning and management of construction business processes, coordination and monitoring with new innovative approaches, with the effective management skills designed for the high economic and social impact of a separate economic link of a construction company;

2: To provide graduates with knowledge based on the use of progressive technologies of construction, installation and equipping of buildings, engineering and technical solutions.

3: To provide graduates with a solid foundation for continuing their studies at the next level and independently conducting continuous professional development.

Learning Outcomes/Competences (general and professional)

1. With deep and systematic knowledge of the field of construction engineering and management, analyzes and evaluates the latest technologies of building and equipping construction products (residential, public, commercial and industrial buildings);

2. Deeply analyzes the principles of sustainable development of spatial planning and urban planning, which ensure the harmonization of the use of territories at the level of individual settlements, their economic and social development;
3. Analyzes the positive or negative sides of the valid legal and normative documents related to the regulation of the construction business by the management of the company.
4. In an unfamiliar or multidisciplinary environment, examines the design documentation of the facility and independently manages complex construction processes using systematic knowledge of the latest technologies of construction and maintenance of buildings.
5. With a deep, systematic knowledge of the field, establishes the criteria for conducting construction-investment projects and evaluating the effectiveness of investments; adhering to the principles of good faith, correctly chooses the sources of financing capital investments and, based on some of the latest achievements in the field of construction, creates the basis for innovations;
6. Searching for new, original ways to solve complex problems, formulates new ideas, with managerial skills and the latest methods of solving engineering problems, plans and independently implements investment-construction projects;
7. With knowledge of relevant managerial strategies and effective communication, manages a multidisciplinary team and takes responsibility for the activities and professional development of team members.
8. Following the standards of academic ethics, at the national and international level, presents his/her arguments and conclusions in the field of construction engineering, before the audience of both specialists and non-specialists;
9. Independently plans the further directions of continuing his/her education and directs it.

Methods of Achieving Learning Outcomes (teaching-learning)

Lecture Seminar (group work) Practical Laboratory Practice
 Course work/Project Master's thesis Consultation Independent work

Activities corresponding to teaching-learning methods: Discussion/debate, Cooperative learning, Collaborative work, Problem-based learning (PBL), Case study, Brain storming, Demonstration method, Inductive method, Deductive method, Method of analysis, Synthesis method, Verbal or oral method, Writing work method, Explanatory method, Activity-based learning, Project development and presentation.

In the learning process, depending on the specifics of a particular study course program, the following activities of the teaching-learning methods are used, which are outlined in the relevant study course programs (syllabi).

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.

Research component: completion and defense of the master's thesis - a person who has completed all the educational components provided by the educational program will be allowed to defend the master's thesis. The completed qualifying thesis is the result of the independent research work of the master's student. The submission, public defense and evaluation of the completed qualification work **are performed once, the evaluation is done with 100 points**. The evaluation rule and procedure are determined by the "Rule for evaluation of the research component of the master's educational program" approved by the Academic Council of the University on June 26, 2012, by Resolution No. 704.

Before submitting the master's thesis to the defense, the master's student, along with the master's thesis, must submit to the dean a written conclusion of the supervisor, as well as a **request to check the presence of plagiarism in the master's thesis**.

Fields of employment

Graduates of the construction engineering and management master's program will be able to find employment:

- In state, governmental institutions and agencies (ministries, departments, etc.);
- In municipal self-government bodies, city hall supervision and improvement services;
- In state-owned and private (local and foreign) companies (construction companies and corporations, engineering consulting, supervisory and inspection firms, government agencies, infrastructural, supervisory and urban development services of municipalities, insurance and intermediary-distribution companies, investment fund);
- In international organizations;
- In the non-governmental sector;
- In tax and financial control bodies.

Opportunities for continuing education

Doctoral educational programs

Human and material resources needed to implement the program

The master's educational program is provided with appropriate human and material resources. See the attached documentation for more information.

Number of attached syllabi: