



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution №
of the Academic Council of
GTU dated month/date/year

Master's Educational Program

Program Title

სამრეწველო ინჟინერია და ტექნოლოგია

Industrial Engineering and Technology

Faculty

სატრანსპორტო სისტემებისა და მექანიკის ინჟინერიის ფაკულტეტი

Faculty of Transportation Systems and Mechanical Engineering

Program Head/Heads

Professor, Nia Natbiladze

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

Master of Industrial Engineering and Technology

Will be awarded upon 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 an academic degree equivalent to it, who is enrolled based on the results of the master's exams, according to the rules established by the Georgian legislation, has the right to study in the master's program (general master's exam and specialty exam/exams determined by GTU). Exam questions/tests will be posted on the GTU website at least one month before the commencement of the specialty exams.

The applicant must have a certificate confirming knowledge of the English language of at least B2 level, or must present a document of completion of a corresponding training course of B2 level. In the absence of a similar certificate or other similar document, the applicant will be tested in the English language at the exam center of GTU.

Enrollment in the program without passing the master's exams is possible according to the rules established by the Ministry of Education, Science, Culture and Sports of Georgia.

Program Description

The master's degree program "Industrial Engineering and Technology" is designed taking into account the specifics of the field, its modern achievements and labor market requirements.

The program is based on the European Credit Transfer System (ECTS), 1 credit is 25 hours, which includes both contact and independent work hours. The program lasts 2 years (4 semesters) and includes 120 credits.

The program ensures that the learning outcomes required for the program goals and qualifications are achieved by specifying the seventh level (Master's) of the Higher Education Qualifications Framework.

The educational program is made up of courses of the content corresponding to the main field of study. Courses of content corresponding to the main field of study are presented in the form of compulsory and elective courses in specialty (total 90 credits, including elective courses in specialty- 10 credits, Master's internship in industrial engineering and technology- 13 credits) and research component (30 credits) (total 120 credits).

The regulations of the Georgian Technical University on the Master's degree and its annexes contain information on the organization of the educational process, evaluation of student achievements, educational and financial agreements with students, accumulation of credits by the student, requirements for the Master's thesis, evaluation of the research component.

Program Objective

The objective of the industrial engineering and technology Master's program is to prepare students based on deep and systematic knowledge of the field, its critical understanding, practical and research skills:

- Using the latest techniques and technologies in a complex and multidisciplinary environment to model production processes, enterprise planning and optimization;
- In the leadership and management of the technological processes related to the research activities of the development of industrial automated complexes, taking into account the latest approaches and environmental safety.

Learning Outcomes/Competences (general and sectoral)

Determines the requirements of industrial engineering and technology, using new research, analytical methods and approaches; Both for the academic and for the professional community, in compliance with the standards of academic ethics, in Georgian and English;

Analyzes the methodology of improving scientific communication according to modern requirements;

Classifies modern teaching theories in the field of industrial engineering and technology;

Discusses the latest methods of prospective development of industrial equipment and technological processes, for the production of works in a complex and multidisciplinary environment.

Evaluates selected production methods and technologies of modern machines and automated complexes in terms of sustainable development and environmental impact.

Uses the latest achievements of mechanisms, mechanical systems, technological processes and enterprise planning, in the direction and management of technological processes for the development and realization of original ideas.

Plans new, original ways of solving complex problems related to the development of mechanisms, devices, automated complexes, technological processes in an unknown or multidisciplinary environment, as well as researches independently, observing the principles of academic integrity, using the latest methods and approaches.

Formulates own opinions, arguments and results about problems related to practical and scientific works of industrial engineering, based on critical analysis of the latest research, innovative synthesis and evaluation of information;

Conducts research work on industrial engineering techniques and technological processes in a complex, multidisciplinary environment and adapts to new strategic approaches and environmental safety.

Contributes to the development of industrial enterprises and manages own studies independently in the field of industrial engineering and related sciences.

Methods of achieving learning outcomes (teaching-learning)

Lecture Seminar (group work) Practical Laboratory Practice Master's Thesis Consultation
 Independent work

In the educational process, depending on the specifics of the specific educational course program, the following activities of teaching-learning methods are used, which are reflected in the relevant course programs (syllabi): Discussion/debates; group (collaborative) work; deduction; demonstration; explanatory; verbal or oral; Project development and presentation.

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 receiving FX in the component of the educational program, the GTU will appoint an additional exam no later than 5 days after the announcement of the results of the final exam. The number of points obtained in the final assessment is not added to the grade received by the student in the additional exam. The grade obtained in the supplementary examination is the final grade and is reflected in the final grade of the program component. In case of receiving 0-50 points in the final evaluation of the educational component, taking into account the evaluation received at the additional exam, the student is assigned an F-0 score.

The program part of the assessment of the level of achievement of the student's learning results in each component consists of an intermediate assessment and a final exam. The mid-term assessment in turn includes the ongoing activity and the mid-semester exam.

Each evaluation form and component has a specific share in the final evaluation from the total evaluation score (100 points). In particular, the maximum score of the intermediate assessment is no more than 60, and the maximum score of the final exam is no less than 40.

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

The right to pass the final exam is given to a student who passed the minimum competence limit in the intermediate assessment (scored at least 30 points). Information about the mid-semester exam and final/supplementary exam dates is given in the Rector's order "On the Semester Conducting Schedule"

Detailed information about the educational process is provided on the web page of GTU: "Instructions for managing the educational process at the Georgian Technical University".

Fields of Employment

The fields of employment for Master of Industrial Engineering and Technology are represented by industrial small and medium-sized enterprises, scientific, educational and design institutions.

Opportunities for continuing education

PhD educational 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

Number of attached syllabi: 20