



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution №733 of the
Academic Council of GTU
Dated July 6, 2012

Amended by
Resolution №01-05-04/90 of the
Academic Council of GTU
Dated July 27, 2022

Master's Educational Program

Program Title

ტექნოლოგიური პროექტების მენეჯმენტი და ინდუსტრიული პოლიტიკა

Management of technical projects and industrial policy

Faculty

ენერგეტიკის

Power Engineering

Program Head/Heads

Professor Manana MAGHRADZE

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

Master of Project 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 determined by GTU), has the right to study in the master's program. Exam issues/tests will be posted on the website of the Department of Study Process Management of GTU <https://gtu.ge/Study-Dep/> 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 legislation of Georgia.

Program Description

Globalization of the market dramatically increases the possibility of spreading the latest technologies, but at the same time it makes it more and more difficult to implement the proper tasks of the management activities carried out for this purpose. Accordingly, decision-makers face the need to consider issues of technological development from a strategic point of view. Often, developing such solutions within traditional sectoral, cultural, or national boundaries becomes impossible and requires the use of innovative approaches. Therefore, the "Management of technical projects and industrial policy" program is focused on evaluating and realizing the entrepreneurial potential of innovative opportunities for technological and organizational development. Accordingly, practical and research skills, which graduates will acquire, will ensure that they prepare appropriate decisions and reflect them in long-term business policy, actively participate in the development and implementation of relevant programs in the form of specific projects.

The analysis of both local and international labor market development trends shows that there is already and in the future there will be a growing demand for analytical and research activities related to the development of long-term industrial policy and relevant strategies and the transformation of enterprise operating systems in order to increase their efficiency and effectiveness. Specialists providing this should be familiar with the existing and future technological and management trends in the modern business environment, be able to assess their impact and predict what new organizational and operational tasks they will pose to industrial and service enterprises. These specialists should make their own decisions mainly through quantitative analysis, the results of which should be the basis for drawing up and implementing the programs and projects developed by them.

The program is made according to the European Credit Transfer System (ECTS), 1 credit is equal to 25 hours, which includes both contact and independent work hours. The distribution of credits is presented in the curriculum of the program. The program lasts 2 years (4 semesters) and includes 120 credits. The content of the program's education courses, teaching methods and the number of credits ensure the achievement of the goal of the master's program.

Program Structure

The program consists of teaching and research components. The volume of the educational component is 90 credits (15 hours are devoted to production practice), and the research component (master's thesis) includes 30 credits.

Educational component includes education courses of the content relevant to the main field of study (compulsory 80 credits, optional 10 credits). It provides a total of 18 study courses, 2 of which are chosen by the master's student from among the offered alternatives (first semester). Students will complete the study components in the first three semesters, and the research component in the 4th semester. Students will go through production practice, which is integrated into the "Project Risk Management" education course, in the 3rd semester.

Research component

The research component of the program is the master's thesis. Detailed information on the requirements and evaluation of the research component is provided in the regulations of the Georgian Technical University on the master's degree.

The rule of performance and defense of the qualification paper, see on the website of GTU.

The instructions for completing the thesis submitted for obtaining the academic degree of Master are given on the website of GTU.

Organization of the educational process, assessment of student achievements, signing of educational and financial agreements with students, accumulation of credits by the student, mobility and other necessary information is provided in the "Instructions for managing the educational process at the Georgian Technical University", which is posted on the GTU website: <https://gtu.ge/Study-Dep/Forms/Forms.php>

Program Objective

The objective of the program is to train managers who, using quantitative decision models, will be able to conduct a strategic and financial analysis of enterprise activity, assess relevant risks and reflect them in programs and projects for the utilization of technological innovations contributing to the development of the economy, which provide modern engineering and management of production systems, including logistics systems.

Learning Outcomes/Competences (general and professional)

1. On the basis of knowledge and critical understanding of the latest achievements in the field of innovation, predicts and evaluates the trends of economic-technological development; prepares recommendations on processes and management of technological systems, as well as solutions to business problems related to the use of technologies;
2. Describes innovation development processes and general approaches used for their management; identifies the entrepreneurial potential of technological innovations and determines the necessary measures for their utilization; collects and through relevant information technologies analyzes the information reflecting the implementation of these measures; if necessary, plans and conducts appropriate corrective measures;
3. Formulates a strategy corresponding to the enterprise's mission and goals, plans and directs operational processes aimed at the achievement of the strategy, which he/she groups into production flows, ensures the necessary actions for the effective flow of these flows: collects and analyzes requirements for resource provision of operational activities of enterprises, plans enterprise logistics, establishes the structure of appropriate supply chains, organizes the optimal operation of the warehouse, evaluates the effectiveness of the logistic support systems for the production processes;
4. In order to increase the competitiveness of the organization, connects the defining features of the industrial revolution, plans programs and projects aimed at achieving strategic goals, carries out a qualitative and quantitative analysis of project risks, including financial and logistical ones, develops a risk response strategy; determines the basic plan of implementation works of the program/project; organizes the performance of project quality assurance measures; controls the progress of the project using project management software;
5. Based on the analysis of the needs of interested parties (stakeholders), selects the defining characteristics of the production system and the corresponding values of their parameters, establishes the appropriate hierarchical model of the multi-level business system, makes conclusions about its validity, the need for further development and the possibility; ensures the compatibility of systemic decisions with the mission of the business organization, strategic goals and relevant tactical tasks;
6. Describes the existing and to be planned business processes in the enterprise, connects the capabilities of primary and auxiliary processes with the competitiveness achieved by the enterprise, determines the necessity of their modernization; in order to maximize strategic benefits, establishes new organizational models and substantiates the need for implementing their sales projects;
7. When implementing strategic decisions and solving complex management problems, operates using appropriate information technologies; based on the analysis of the information describing the real situation, in order to use the new opportunities created by the technological revolution, chooses the appropriate quantitative decision-making models and uses simulation modeling, plans a platform to stimulate the relevant interactions;
8. In order to ensure the efficient operation of the organization, determines human resource

management strategies; develops ways to use human resources more efficiently in the organization, selects and uses proven methods for eliminating conflicts;

9. In the process of working with business documents, through analysis, synthesis and comparison, clarifies data and presents information in a complete form, content and appropriate style both to stakeholders and to society as a whole; produces current documentation, prepares applications, resumes and other documents accompanying effective communication and negotiation;
10. Independently, by conducting own research, finds and uses new, original ways to solve problems through new strategic approaches in an unpredictable environment; takes responsibility for the results of his/her activities; realizes the necessity of his/her own professional growth and plans future development prospects; acts in compliance with ethical principles, respects the opinion of others, justifies his/her own position and participates in the process of formation and establishment of personal and civic values.

Methods of Achieving Learning Outcomes (teaching-learning)

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

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):

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.

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 FX in the component of the educational program, GTU is obliged to schedule an additional exam at least 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 on the additional exam is the final grade and is reflected in the final grade of the educational 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 system of evaluation of education component and qualification paper is described in detail in the instructions for managing the educational process of the Georgian Technical University and in the syllabi of the education courses.

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 master's thesis is the result of the independent scientific-research work of the master's student. Submission, public defense and evaluation of the completed master's thesis are performed once. Evaluation is done with 100 points. The evaluation rule and procedure are determined by the "Rule for evaluation of the scientific-research component of the master's education program" approved by the academic council of the university on August 14, 2020, by Resolution No.

Fields of employment

Any enterprise, scientific organization, or state management body, where programs and projects related to the development of entrepreneurial strategies in relation to technology are implemented, which require the performance of research, engineering and management functions, related to the transformation of operating systems based on the use of innovative approaches, the development and implementation of long-term industrial policies.

- in state, government institutions and agencies (ministries, departments, etc.);
- in state central and local self-government bodies;
- in the state sector of any sphere of the economy and in private (local and foreign) companies (firms, corporations, insurance, intermediary and distribution companies, investment funds, export-import agencies and others);
- in scientific and analytical structures;
- in state and private higher educational institutions;
- in international organizations;
- in state and private joint ventures;
- in small and medium businesses;
- in various branches of industry;
- in the field of transport and forwarding.

Opportunities for continuing education

Doctoral educational programs

Human and material resources needed to implement the program

The program is fully provided with human capital of appropriate qualifications and the necessary material resources, which are given in the form of an attachment.

Number of attached syllabi: 26