საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Master's Educational Program

Program Title

კომპიუტერული სისტემები და ქსელური ტექნოლოგიები
Computer systems and network technologies

Faculty

ინფორმატიკისა და მართვის სისტემების ფაკულტეტი
Faculty of Informatics and Control Systems

Program Head/Heads

Professor Mzia KIKNADZE

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

Master in Information Technologies *Will be awarded upon completion of at least 120 credits of the educational program*

Language of Teaching

Georgian

Prerequisite for Admission to the Program

The prerequisite for admission of a candidate to the master's educational program is:

· Passing the common master's exam in accordance with the rules established by the legislation of Georgia. Passing the internal university exam in the specialty.

· A certificate of at least B2 level confirming knowledge of the English language or a document of completion of a relevant training course at B2 level. In the absence of a certificate or other similar document, the applicant will pass the exam in English.

Exam questions/tests will be posted on the web page of the Teaching Department of GTU

(https://gtu.ge/Study-Dep/) at least one month before the exams.

Enrollment in the program can be done through internal and external mobility in accordance with the regulations established by the Ministry of Education and Science of Georgia and Georgian Technical University.

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.

Program Description

The educational program is compiled according to the European Credit Transfer and Accumulation System (ECTS), the program includes 120 credits. At the Georgian Technical University, 1 credit is equal to 25 hours, which includes both contact and independent work hours. The distribution of credits according to study courses is presented in the curriculum.

The duration of the educational program is 2 years, 4 semesters. The program includes educational components, industrial internship and a research component. The educational component is 90 credits. Of these, 67 credits are assigned to basic education courses and 18 credits to elective courses, 5 credits to industrial internship. The research component includes 30 credits.

Industrial internship is completed by a master's student in the third semester, it is 5 credits and includes 90 hours.

The Master's student begins to perform the research component from the fourth semester (30 credits of master's thesis execution and defense). The research component is evaluated once during the defense of the master's thesis.

Detailed information about the master's degree is given in the "Regulations of the Georgian Technical University on the master's degree", which is posted on the web page of GTU.

The academic year consists of two semesters, fall and spring. Before the beginning of the semester, the rector of the university issues an order about the course of the academic semester, which will be posted on the web page, where there is detailed information about the course of the semester and deadlines.

Program Objective

The objective of the master's educational program is to:

- To prepare a competitive and highly qualified specialist for practical and research activities in the labor market in the demanding direction of information technologies - computer systems and networks;
- To provide the graduate with in-depth knowledge of theoretical, practical and research issues of information technology;
- To train the graduate: in a multidisciplinary environment of object analysis and research; Computer system and network design, implementation, research, administration skills for the facility;

Learning Outcomes/Competences (general and professional)

The learning outcomes of the master's educational program correspond to the goals and content of the educational program, are measurable and achievable; corresponds to the appropriate level of qualification and the academic degree awarded. After completing the educational program, the graduate:

Performs analytical and critical thinking, based on deep and systematic knowledge; identifies, formulates and solves problems related to computer systems and networks;

· **Establishes** appropriate requirements based on pre-project research of computer systems and computer networks;

· **Analyzes** the received information, researches, designs and implements the computer system and network based on them;

· **Selects** and uses innovative methods of information technology research, design and creation for the implementation of computer systems and networks in various fields,

· **Solves** practical tasks in computer networks, SCADA systems and biometric systems using tools such as Internet of Things, Big Data Systems/Blockchain Technologies/Cloud Services, Neural Networks/Expert Systems;

· **Creates** secure systems with appropriate hardware and software tools using analysis and synthesis methods.

· **Demonstrates** analytical, critical thinking, drawing conclusions and communication skills during group work.

· **Presents** own views, results of research and activities, reasoned conclusions and documentation to the academic and professional community in Georgian and foreign languages in full compliance with the standards of academic ethics and integrity.

Methods of achieving learning outcomes (teaching-learning)

☒ Lecture ☒ Seminar (group work) ☒ Practical ☐ Laboratory

☒ Practice ☒ Course work/Project ☒ Master's Thesis ☒ Consultation

Independent work

Methods of achieving learning outcomes:

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;

· Group (collaborative) work;

· Demonstration method;

· Analysis;

· Synthesis;

· Mental attack;

· Verbal or oral;

· Explanatory method;

· Method of written work;

· Project development and presentation.

Activities corresponding to teaching-learning methods are given on the website of Georgian Technical University of Georgia.

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.

Detailed information is provided on the GTU website: Instruction for managing the educational process at the Georgian Technical University.

Fields of Employment

With the knowledge and skills acquired within the educational program, the graduate has the opportunity to be employed in any company, research or public institution, where computer systems and/or computer networks are researched, designed, implemented, and administered.

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: 24