



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 733 of the
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PhD Educational Program

Program title

საინჟინრო გეოდეზია

Engineering geodesy

Faculty

სამთო - გეოლოგიური

Mining and Geology

Program Head

Professor Nodar Matiashvili

Qualification to be Awarded

Doctor of Geodesy and Geoinformatics Engineering

It will be awarded in case of completion of the training component (50 credits) and the research component of the educational program; Duration of study is not less than 3 years.

Language of Teaching

Georgian

Prerequisite for Admission to the Program

A person who holds a bachelor's degree or an equivalent academic degree in the field of engineering, manufacturing and construction, as well as natural sciences, mathematics and statistics is eligible to study in the doctoral educational program. The following are taken into account: the existence of scientific publications, participation in scientific conferences, other documents and materials related to educational/research activities (certificates, deeds, patents, etc.)

Persons wishing to enroll in the program must present an appropriate international certificate proving English language proficiency at least at the B2 level. In the absence of above mentioned certificate, the applicant will take the exam at the GTU exam center in the English language. A doctoral candidate who has completed an English-language (undergraduate and/or master's) program is not required to pass the exam and present a certificate.

Program description

The program is compiled using the European credit transfer system ECTS. 1 credit is equal to 25 hours, including contact and independent work hours. The distribution of credits is presented in the program curriculum.

The program lasts at least 3 years (6 semesters)

The objectives of the educational component are the sectoral and methodological preparation of the doctoral candidate for the implementation of the goals of the doctoral educational program. The educational component helps the doctoral candidate in the successful preparation of the dissertation, in the future pedagogical and scientific activities. The educational component of the doctoral program is 50 credits

Before the beginning of the semester, the rector of the university issues an order on the progress of the educational process, which will be posted on the website.

The first semester includes five compulsory study courses (30 credits) of study components. The second semester includes one study-compulsory (5 credits) and study-elective courses (5 credits), as well as a professor's assistantship (10 credits). The second and subsequent semesters involve the completion of research components, which include: research project/prospectus, colloquium - 1, colloquium - 2, colloquium - 3, preliminary defense, thesis completion and defense.

Program Objective

The objective of the doctoral program is to train a researcher with knowledge based on the latest achievements in the field of engineering geodesy and geoinformatics, equipped with the skills of using modern research methods and technologies, focused on the development of original ideas and practical activities, as well as pedagogical activities:

- to perform high-precision measurements;
- to create a database of digital thematic information;
- to analyse, synthesize and evaluate geodetic data.

Learning Outcomes/Competences (general and professional)

- Based on the latest knowledge, achievements, describes geodetic networks and their processing methods, observations of deformations of buildings, principles of least squares theory, global goals of sustainable development and use of geographic information system capabilities;
- Plans innovative studies focused on creating new knowledge, finding related statistical materials and processing them;
- Based on the latest achievements of GIS technologies, conducts interdisciplinary and empirical studies, the process of determining the location of points of underground and above-ground networks;
- Evaluates the knowledge based on the latest achievements in the field of engineering geodesy and geoinformatics (at the level of the standard necessary for a referable publication);
- Optimizes land use monitoring schemes with innovative methods, balances plan and elevation networks, evaluates the geodetic network project on hydrotechnical structures;
- Resolves issues of geodata retrieval, processing and interpretation in the field of engineering geodesy and geoinformatics;
- Uses innovative methods in engineering geodesy, mine surveying and cartography studies;
- Prepares presentations and written information in the field of engineering geodesy and geoinformatics, following the principles of academic integrity and taking into account innovative methods based on the latest achievements of the field;
- Adhering to the principles of academic and managerial integrity, independently implements innovative research projects based on the latest technological achievements in the field of engineering geodesy and geoinformatics.

Methods of Achieving Learning Outcomes (teaching-learning)

- Lecture Seminar (group work) Practical Laboratory Practice
 Scientific and thematic seminar Independent work Consultation
 Research component Structure of the thesis Thesis defense

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, case study; brain storming; induction; deduction; analysis; synthesis; oral or verbal work; problem-based learning; writing work; explanation; action-oriented learning; project development and presentation.

Student's Knowledge Assessment System

Assessment is done on a 100-point system.

Assessment of the learning component:

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, an additional examination is scheduled no later than 5 days after the announcement of the results. The grade received at the additional examination is not summarized with the grade received at the final assessment.

Educational and research components of the PhD educational program and the order of their assessment are posted on the University website: Instructions for Managing the Educational Process at Georgian Technical University.

Assessment of the scientific research component(s):

- a) with the highest praise (summa cum laude) - excellent performance;
- b) with great praise (magna cum laude) - result exceeding the requirements in all parameters;
- c) with honor (cum laude) - a result that exceeds the requirements;
- d) satisfactory (bene) - an average level work that meets the basic requirements;
- e) sufficient (rite) - a result that, despite its shortcomings, still meets the requirements;
- f) insufficient - an unsatisfactory level work that cannot meet the requirements due to significant deficiencies in the work;
- g) completely unsatisfactory (sub omni canone) - a result that completely fails to meet the requirements

Fields of employment

Designing and construction of engineering and agricultural structures: civil and industrial construction, road construction, construction of hydrotechnical facilities and its monitoring; open and underground mineral processing facilities; Excavation works: mining, construction and mineral extraction in processing; Underground works: designing - construction of metros, tunnels; Cadastral works: city, water, land, forest, etc. higher educational institutions; Private or public research and scientific institutions.

Human and material resources needed to implement the program

The doctoral educational program is provided with appropriate human and material resources. Information is provided in the attached documentation.

Number of attached syllabi: 9