



საქართველოს ტექნიკური უნივერსიტეტი  
GEORGIAN TECHNICAL UNIVERSITY

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

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Resolution № 01-05-04/173  
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dated November 26, 2021

## PhD Educational Program

### Program Title

ტრანსპორტი

Transport

### Faculty

სატრანსპორტო სისტემებისა და მექანიკის ინჟინერიის ფაკულტეტი

Faculty of Transport Systems and Mechanics Engineering

### Program Head/Heads

Associate Professor Nino TOPURIA

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

Doctor of Transport Engineering

will be awarded if the educational component of 50 credits of the educational program is mastered and the research component is completed. The period of study is at least 3 years.

### Language of Teaching

Georgian

## **Prerequisite for Admission to the Program**

A person with a relevant education, a master's degree or an academic degree equivalent to it, who meets the requirements for enrollment in a PhD program in accordance with the current rules at GTU, will be admitted to 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.).

An applicant must present a relevant international certificate proving knowledge of English language at least B2 level or must pass an exam at the GTU exam center. An applicant who has completed a first- and second-level English-language program of higher education is not required to present a certificate or pass an exam.

In case of receiving a positive assessment in the English language, the applicant goes through an interview with the faculty temporary committee; during the interview, scientific publications and/or inventions, participation in scientific conferences, trainings and other experience of educational/research activities, confirmed by relevant prints, patents, certificates, deeds, etc. will be taken into account. The procedure for admission to PhD studies and enrollment conditions are given on the university's website.

It is possible to enroll in the program on a mobility basis within the time limits established by the Ministry of Education, Science, Culture and Sports of Georgia, following the compulsory procedures and the rules established by the university. Enrollment in the program or transfer enrollment from a recognized higher educational institution of a foreign country is carried out in accordance with the rules defined by the legislation of Georgia.

## **Program Description**

The program is based on the European Credit Transfer System (ECTS), at the Georgian Technical University- 1 credit is equal to 25 hours, which includes both contact and independent work hours. The duration of the educational program is at least 3 years (6 semesters) and its educational component includes 50 credits.

The educational component of the program consists of a compulsory and elective component, which the PhD student must take in the first and second semesters. For the educational component of the program, 50 compulsory credits are defined, including 12 elective credits. The second and subsequent semesters involve the completion of research components, including: research project/prospectus, colloquium - 1, colloquium - 2, colloquium - 3, preliminary defense, thesis completion and defense.

The research component is assessed once, at the defense of the thesis in the final assessment.

See the Georgian Technical University's Doctoral Regulations and "Teaching and Research Components of Doctoral Education Programs and Their Evaluation Rules" in detail on the website of GTU .

The academic year consists of two semesters - fall and spring. Mid-semester and final/supplementary exam dates are set at the beginning of each semester by the rector's order on the basis of the "Instructions for managing the educational process at the Georgian Technical University", which is posted on the website..

## **Program Objective**

The objective of the program is to prepare a doctor of transport engineering with in-depth knowledge based on the latest achievements in the field of transport (motor, railway), who performs the identification of current and complex problems in the direction of design, maintenance, development and service of vehicles, generating new knowledge based on scientific research performed using innovative methods, and pedagogical activity.

## **Learning Outcomes/Competences (general and professional)**

- **Describes** the possibility of expanding existing knowledge and using innovative methods in the field of transport (motor, railway), scientific research and analytical methods based on the latest achievements, research methodology and ways of maintaining the technical condition of vehicles;
- Critically **understands** the essence and purpose of scientific research work, the possibility of using modern achievements and methods, the importance of using innovative technologies for the effective management and development of the functioning of the transport sector;
- **Analyzes** the effectiveness of the methods and devices to be used for research to solve the problematic issues of vehicle design, development, maintenance and service;
- **Plans** organizational and technical measures in order to effectively conduct systematic studies in the field of transport;
- **Evaluates** the results of the implementation of modern technologies in the field of transport with a logistic approach, as well as the optimization of reliability, traffic safety, environmental friendliness;
- **Solves** complex problems in the field of transport by finding original ways and using progressive technologies;
- **Justifies** the necessity of planning, correct implementation and cause-and-effect relationship of scientific-technical research, taking into account the expected technical-economic results;
- **Summarizes** the results of research focused on the creation of new knowledge, which is reflected in international refereed publications;
- **Implements** learning activities using modern teaching and evaluation methods and technologies.

#### Methods of achieving learning outcomes (teaching-learning)

Lecture  Seminar (group work)  Practical  Laboratory  Scientific and thematic seminar   
 Independent work  Consultation  Research component  Thesis design  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; group (collaborative) work, induction; deduction; analysis; synthesis; verbal or oral; written work; explanation; action-oriented learning; problem-based learning (PBL); project development and presentation; to demonstrate cooperative learning;

#### Student's Knowledge Assessment System

The student's knowledge is assessed on a 100-point scale.

Assessment of the educational component:

Positive grades are:

- (A) – Excellent – 90-100 points of assessment;
- (B) – very good – 81 – 90 points of assessment

- (C) – Good – 71 – 80 points of the assessment
- (D) – satisfactory – 61 – 70 points of the assessment
- (E) – sufficient – 51 – 60 points of the assessment

Negative grades are:

- (FX) - Failed to pass – 41-50 % of the assessment, 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 exam is held, not less than 5 days after the announcement of the results. The grade obtained in the additional exam is not added to the grade obtained in the final assessment. 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.

#### **Assessment of the scientific-research component/components:**

- Excellent (summa cum laude) - excellent performance;
- Very good (magna cum laude) - result exceeding the requirements in all parameters;
- Good (cum laude) - a result that exceeds the requirements;
- Satisfactory (bene) - an average level work that meets the basic requirements;
- Sufficient (rite) - a result that, despite its shortcomings, still meets the requirements;
- Insufficient (insufficienter) - an unsatisfactory level work that cannot meet the requirements due to significant deficiencies in the work;
- Completely unsatisfactory (sub omni canone) - a result that completely fails to meet the requirements.

The assessment of the research component of the PhD educational program is done once, with a final assessment.

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#### **Fields of Employment**

Scientific-research, design organizations, firms and educational institutions that carry out the design, construction, modernization, operation, scientific-technical research and/or training process of vehicles (motor, railway).

#### **Human and material resources needed to implement the program**

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

**Number of attached syllabi: 10**