

Admission Prerequisites

The right to study in the doctoral educational programme is granted to a person who holds a Master's degree or an equivalent academic degree in the following broad field of the Classifier of Fields of Study: 07 Engineering, Manufacturing and Construction of the Classifier of Fields of Study.

A candidate wishing to enrol in the programme must submit:

1. A research project outlining the applicant's research aim and direction;
2. A relevant international certificate confirming knowledge of English at no lower than B2 level, or successfully pass a B2-level English language test organised and administered by GTU. A candidate who has completed a recognised English-language educational programme at any level of higher education is not required to pass the examination or present a certificate (completion of an English-language programme is confirmed by the relevant qualification document, i.e. a diploma);
3. Document(s) confirming previous work/publications in the relevant field and/or participation in scientific research projects and events and/or at least 2 years of work experience in the relevant field.
4. Other documentation/information predetermined by the University on the basis of the Regulations on Doctoral Studies of the LEPL Georgian Technical University.

Programme Goal

The goal of the programme is to prepare researchers who are oriented towards solving topical international-level scientific and technological problems, who possess knowledge based on the latest scientific achievements and research in the field of mechanical engineering and technology, and who are competitive in the local and international labour markets, and who will contribute to:

- The creation of new knowledge and the solving of complex engineering problems in the field of mechanical engineering and technology, as well as in the kinematic and dynamic research, modelling, calculation, design, structural improvement and innovative development of machines and machine systems of various functional purposes and of their main structural elements;
- The development and implementation of innovative technological solutions in the design, development, operation, technical diagnostics, monitoring and improvement of modern production processes, technological devices, automated and robotic systems, technological equipment and production systems;

and to the development of the competences necessary for creating new knowledge, developing innovative research methods and technological solutions, and carrying out academic, scientific and pedagogical activities.

Learning Outcomes/Competences (General and Professional)

- Possesses the latest scientific achievements in the field of mechanical engineering and technology, which makes it possible to expand existing knowledge, create new knowledge and apply innovative methods, including to solve topical problems of the research, design, modelling and manufacture of machines and machine systems, in a multidisciplinary or interdisciplinary context.
- Critically reflects on the latest knowledge in the field of mechanical engineering and technology, assesses the need for its renewal and development taking into account trends in technological development, and lays the foundations for new research directions.

- Analyses and critically evaluates the latest scientific achievements and research results in the field of mechanical engineering and technology, integrates them into research projects and applies them in academic, scientific and professional activities.
- Plans and conducts theoretical and experimental research in mechanical engineering and technology using modern research methods, in compliance with the principles of academic integrity and research ethics.
- Independently solves research and engineering problems of the main functional elements of the mechanics of machines (mechanisms, drive systems, mechatronic modules), of machines and installations, and of technological, automated and robotic systems, using modern scientific and engineering approaches.
- Develops, improves and implements innovative technological solutions in mechanical engineering and production processes, carries out a comprehensive analysis and evaluation of their technical and economic efficiency, and formulates new ideas, approaches and evaluation criteria.
- Substantiates with sound arguments their own scientific views on the research and ways of solving complex problems in mechanical engineering and technology, and participates effectively in scientific discussions, seminars and conferences.
- Conducts the teaching process using modern teaching and learning methods and strategies, by transferring knowledge based on the latest scientific achievements, creating a student-centred learning environment and applying relevant assessment methods.

Observes the principles of academic integrity, research ethics, intellectual property, professional responsibility and ethical conduct in the research and teaching process.

Student Knowledge Assessment System

Assessment is carried out on a 100-point system.

Assessment of the study 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) – Did not pass – 41–50 points, which means that the student needs more work to pass and is given the right to sit an additional examination once after independent work;
- (F) – Failed – 40 points or less, which means that the work carried out by the student is not sufficient and the subject must be studied anew.

If FX is received, GTU schedules an additional examination no earlier than 5 days after the announcement of the results of the final examination. The grade obtained by the student in the additional examination is not added to the points received in the final assessment. The grade obtained in the additional examination is the final assessment and is reflected in the final grade of the educational programme component.

If, taking into account the grade obtained in the additional examination, the student receives 0–50 points in the final grade of the educational component, the student is awarded the grade F – 0 points.

Assessment of the scientific research component/components:

- a) Excellent (*summa cum laude*) – an outstanding piece of work;
- b) Very good (*magna cum laude*) – a result that exceeds the set requirements in every respect;
- c) Good (*cum laude*) – a result that exceeds the set requirements;
- d) Average (*bene*) – a work of average level that meets the basic set requirements;
- e) Satisfactory (*rite*) – a result that, despite shortcomings, still meets the set requirements;
- f) Unsatisfactory (insufficient) – a work of unsatisfactory level that does not meet the set requirements due to significant shortcomings;
- g) Completely unsatisfactory (*sub omni canone*) – a result that completely fails to meet the set requirements.

The research component is assessed once, at the stage of the dissertation defence, by a final assessment.

The study and research components of the doctoral educational programme and the rules for their assessment are published on the University website: "Instructions for the Management of the Educational Process at the Georgian Technical University"

<https://www.gtu.edu.ge/uploads/2026/03/educational-process2-1.pdf>

Subject	Credits
Scientific Communication Techniques	4
Research Ethics and Intellectual Property in Engineering Research	5
Teaching Methods	6
Machine Science	8
Elective specialised courses related to the doctoral programme	
Industrial Technological Machines	7
Technical Diagnostics Methods	
Production Processes, Equipment and Systems	8
Robots and Robotic Systems	5
Professor's Assistantship in Mechanical Engineering and Technology	10
Total	60