

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 one of the following narrow fields of the Classifier of Fields of Study: "071 Engineering and Engineering Trades", "091 Health", "051 Biological and Related Sciences", 061 Information and Communication Technologies.

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.

A candidate whose submitted documentation fully meets the formal requirements is interviewed by the Temporary Faculty Commission. In accordance with the procedure established by the legal acts of GTU, the Temporary Faculty Commission ensures the assessment of persons wishing to be admitted to the programme in compliance with the principles of objectivity, fairness and transparency. Consideration is given to the assessment of the candidate's experience and abilities necessary for the successful completion of the doctoral educational programme, including (where available) the candidate's scientific publications, experience of participation in scientific conferences, and other documents and materials related to teaching/research activities (certificates, diplomas, patents, etc.).

Full information on the rules of admission to doctoral studies and the conditions of enrolment, as well as sample(s) of the English language examination tests, is posted on the official website of the University. <https://www.gtu.edu.ge/migheba/programebi/migheba-saphekhurebis-mikhedvith/doqtorantura/doqtorantura-migheba/>

Enrolment in the programme through mobility is possible twice a year, within the time frames set by the Ministry of Education, Science and Youth of Georgia, in compliance with the conditions and rules defined by the legislation of Georgia and the legal acts of GTU.

Enrolment in the programme from a recognised higher education institution of a foreign country is carried out in accordance with the procedure established by the legislation of Georgia.

Programme Goal

The goal of the programme is to prepare:

PEO1. A highly qualified engineer and researcher with problem-solving skills who applies scientific knowledge to solve contemporary problems of engineering, medicine and biology in a global, social and economic context;

PEO2. A leader in both the public and private sectors of the biotechnology and medical industry, capable of providing appropriate services to national and regional industries, hospitals and government health-care agencies;

PEO3. A professional engineer who upholds ethical norms and has a high sense of social responsibility, works effectively in multidisciplinary teams and communicates ideas and technical information effectively.

PEO4. An independent researcher capable of applying new knowledge and technologies who, after completing doctoral studies, successfully participates in scientific research in the field of engineering medicine and biomedical sciences and also engages in pedagogical activity.

Learning Outcomes/Competences (General and Professional)

Upon completion of the programme, the graduate:

1. Defines new approaches in the field of biomedical engineering on the basis of knowledge, innovative methods and technologies.
2. Develops and models methods of scientific research work based on the latest achievements of the theories of exact and approximate calculation.
3. Independently evaluates innovative ideas and research results and selects criteria for new biotechnical medical equipment, makes decisions based on research results, and forms individual, well-reasoned opinions on the problems under consideration.
4. Is aware of professional and ethical responsibility when making decisions in the field of biomedical engineering and of the importance of ensuring high-standard healthcare for society.
5. Has the ability to independently plan, carry out and supervise applied and fundamental research, to develop medical systems and health information technologies, and to improve new research and analytical methods for working with medical equipment.
6. Makes decisions on the basis of a targeted and comprehensive analysis, synthesis and evaluation of new innovative ideas and research results. Forms their own well-argued opinion for the formulation of criteria for new biotechnical medical equipment and for solving research tasks.
7. Develops new teaching methodologies for the purpose of advancing scientific and scientific-pedagogical activities and carries out the design of the relevant laboratory and practical work.
8. Formulates scientifically well-substantiated conclusions and valuable recommendations and proposes new hypotheses in order to solve the existing problem.
9. Plans and conducts research in compliance with the principles of academic integrity, develops new research and analytical methods oriented towards new knowledge (at the level of the standard required for an international peer-reviewed publication), and participates in research projects based on the latest achievements.
10. Engages in free theoretical discussion with specialists working in a multidisciplinary field on an international scale. Succeeds in bringing their own ideas and research to the international arena and in gaining recognition for them.
11. Determines the direction of learning on the basis of an awareness of the specific features of the learning process, plans the learning process, which they conduct independently and creatively; independently deepens professional knowledge using specialised literature and electronic resources.

Student Knowledge Assessment System

Assessment is carried out on a 100-point scale. Assessment of the study component

The following are considered positive grades for a study course defined by the doctoral educational programme:

- (A) – Excellent – 91% or more
- (B) – Very good – 81–90%
- (C) – Good – 71–80%
- (D) – Satisfactory – 61–70%
- (E) – Sufficient – 51–60%

The following are considered negative grades for a study course defined by the programme:

- (FX) – Did not pass – 41–50%, 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% 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, an additional examination is scheduled no earlier than 5 days after the announcement of the results. The grade obtained in the additional examination is not added to the points received in the final assessment.

Assessment of the Research Component

The scientific research component of the doctoral educational programme is assessed once, by a final assessment. The assessment system of the scientific research component is available on the website of Georgian Technical University:

<https://www.gtu.edu.ge/uploads/2026/03/edu-research-components.pdf>

Subject	Credits
Scientific Communication Techniques	4
Research Methods in Biomedical Engineering	5
Teaching Methods and Education Management	6
Biomedical Sensors and Measuring Transducers	5
Radiation Safety and Dosimetry	5
Professor's Assistantship in Biomedical Engineering	5
Physiology and Electrophysiology for Engineers	5
Control Systems in Medicine	5
Medical Image Analysis	5
Artificial Organs	
Clinical Engineering	5
Total	50