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 detailed fields of the Classifier of Fields of Study: "Chemistry"; "Chemical Engineering and Processes"; "Environmental Protection Technology"; "Food Processing"; "Materials (Wood, Paper, Plastic, Glass)", "Pharmacy".

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

Enrolment in the programme by way of mobility is possible twice a year, within the time frames established 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 educational programme is:

- To prepare qualified researchers in chemistry who are oriented towards the local and international labour market, possess knowledge based on interdisciplinary approaches and the latest achievements, and are equipped with the skills to rethink existing challenges in new ways, to conduct research and to lead the educational process;
- To teach physico-chemical and experimental research methods and their successful application in practice;

- To prepare highly qualified and motivated specialists, which will contribute to the growth of the country's potential through the creation of research methods for new/innovative alternative products in the production and processing of compounds and materials with various functional purposes.

To participate in the full-fledged functioning of competitive industrial and research laboratories oriented towards the local and international labour market.

Learning Outcomes/Competences (General and Professional)

- **Generates** new ideas in chemistry for solving research and practical problems, including in interdisciplinary research, on the basis of the critical analysis and evaluation of modern scientific achievements;
- **Defines** the independent planning, implementation and supervision of innovative research;
- **Predicts** the chemical nature of individual representatives of inorganic compounds and the determination of their reactivity, the energetics and kinetics of processes (reactions), the interconversions between the numerous classes of organic compounds, the preliminary evaluation of the properties of various materials, and the routes for independently obtaining biologically active substances and the possibilities of their use;
- **Develops** novel research and analytical methods and approaches oriented towards new knowledge;
- **Carries out** activities aimed at the development of knowledge in an academic and professional context and critically evaluates teaching/pedagogical and research activities;
- **Leads** the development of innovative research approaches for the improvement of scientific activity, purposefully oriented towards the creation of new knowledge;
- On the basis of the critical analysis, synthesis and evaluation of new, complex and contradictory ideas and approaches, **makes** correct and effective decisions for solving problems;
- **Develops** novel research and analytical methods and approaches in chemistry that are oriented towards the creation of new knowledge and are reflected in international peer-reviewed publications;
- **Demonstrates** the ability to present and communicate new knowledge, in its interrelation with existing knowledge, in a well-reasoned and clear manner, both to colleagues and to the wider public;
- In compliance with the principles of academic integrity and taking into account innovative methods based on the latest achievements of the field in interdisciplinary research, **prepares** research projects in the field of chemistry.

Student Knowledge Assessment System

In the teaching of a study course defined by the programme, the student's performance is assessed in accordance with the assessment system approved by Order No. 3 of the Minister of Education and Science of Georgia of 5 January 2007 "On the Procedure for Calculating Higher Education Programmes with Credits".

The mastery of the topics envisaged by the programmes (syllabi) of the study courses defined by the educational programme is assessed on a 100-point scale. A study course is considered passed by the doctoral student if, as a result of the midterm assessments and the final examination, they accumulate 51 or

more points. A doctoral student who obtains at least 30 points in the midterm assessments is admitted to the final examination.

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.

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 main 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 in it;

g) Completely unsatisfactory (sub omni canone) – a result that completely fails to meet the set requirements.

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 at the link:

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

Subject	**Credits**
Scientific Communication Techniques	4
Teaching Methods	6
Modern Concepts in Inorganic Chemistry	5
Principles and Mechanisms of Organic Reactions	5
Theoretical Aspects of Physical Chemistry	5
Modern Aspects of Substance Analysis	5
Professor's Assistantship	10

Elective Study Courses	5
Standard and Non-Standard Coordination Chemistry	
Chemistry in Modern Pharmacy	
Chemistry of Biologically Active Natural Compounds	
Modern Aspects of Dye Chemistry	
Thermodynamic and Kinetic Modelling of Processes	
Modern Advances in Polymer Chemistry	
Agrochemistry, Product Quality and the Cycling of Matter in the Ecosystem	
Current Problems of Environmental Chemistry	
Total	**[60]**