Research Directions and Goals

The goal of the programme is to prepare highly qualified scientific and pedagogical personnel capable of solving the modern challenges of chemical and biological engineering.

Main Research Directions:

- Chemical and biochemical technologies, biotechnological processes.
- Design, modelling and optimisation of reactors and bioreactors.
- Synthesis of new materials, nanocomposites and functional coatings.
- Environmental (ecological) engineering and waste utilisation/processing.
- Engineering of pharmaceutical and food production.

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.

Subject	**Credits**
Scientific Communication Techniques	4
Instrumental Methods for Studying the Composition and Structure of Chemical Substances and Their Transformations	5
Teaching Methods	6
Chemical Process Engineering	5
Modern Aspects of Chemical and Biological Engineering	5
Industrial Biotechnology	5
Methods of Materials Production, Property Prediction and Design of Experiments	5
Modern Industrial Catalysis	5
Professor's Assistantship	10

Elective Study Courses	5
Specific Features of the Production of Inorganic and Organic Composite Materials and Products	
Biomimetic Polymers and Their Application in Biomedicine	
Electrochemical Processes in the Synthesis of Nano- and Macromaterials	
Environmental Chemical and Biological Technologies	
High-Temperature Processes in the Engineering of Modern Functional Materials	
Total	**55**