

Admission Prerequisites

The right to study in the doctoral educational programme is granted to a person who holds a Master's qualification or an equivalent academic degree (a graduate of the detailed field of the Classifier of Fields of Study "Engineering and Engineering Trades (Not Elsewhere Classified)"). Consideration is given to: the existence of scientific publications; participation in scientific conferences; other documents and materials related to teaching/research activities (certificates, diplomas, patents, etc.).

A person wishing to enrol in the programme must submit a research project outlining the applicant's research aim and direction, as well as a relevant international certificate confirming knowledge of English at no lower than B2 level. If the applicant does not hold the above-mentioned certificate, they take an examination in English at the GTU Examination Centre. A doctoral candidate who has completed an English-language programme (Bachelor's and/or Master's) is not required to pass the examination or present a certificate.

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 mandatory procedures and the rules established by the University.

Enrolment in or transfer to 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.

External mobility. Enrolment in the educational programme is also possible through mobility, in accordance with the "Procedure for Transferring from a Higher Education Institution to Another Higher Education Institution" approved by Order No. 10/N of the Minister of Education and Science of Georgia of 2 February 2010.

Internal mobility. Applicants are also admitted to the educational programme through internal mobility. The time frames and procedures for internal mobility are established by a legal act of the University, and the information is posted on the University website.

The educational programme is public and accessible to all interested persons. Information on the processes and procedures for enrolment in educational programmes is posted on the website of Georgian Technical University, both in the news section and on the website of the Study Process Management Service. The educational programmes are posted on the faculty website, where any interested person has the opportunity to become acquainted with both the admission prerequisites of the programme and its content.

Programme Goal

The goal of the doctoral programme in Agricultural Engineering is to prepare a highly qualified specialist, educator and researcher with knowledge of modern technologies that meet the international standards of the field of agricultural engineering, who, through the wide application of the theoretical and practical knowledge and scientific research results acquired, will be able to: make effective agricultural engineering decisions; carry out land reclamation measures for agricultural activities effectively; plan, conduct and analyse multifactorial experiments. Using modern technologies: solve issues of crop cultivation and care and increase crop yields; manage water resources effectively; maintain the agroecological sustainability of agricultural lands and assess water erosion processes and debris flow (mudflow) events. Protect agricultural lands from natural hazards and research and scientifically assess the related problematic issues; substantiate the measures to be implemented and introduce them into practice. The graduate of the doctoral programme is oriented towards the labour market, is competitive and meets modern requirements.

Learning Outcomes/Competences (General and Professional)

- Is familiar with the modern forms of new scientific research methods in agricultural engineering; the modern measures necessary for maintaining agroecological balance and the conditions required for their implementation; the latest research findings on the sustainability of nature; the latest technologies of preventive measures for protection against eco-risks;
- Is able to develop new modern research and analytical methods, apply modern technical achievements, carry out agricultural engineering measures, forecast water erosion processes of soils and grounds, determine the operational characteristics of systems as a result of independent research, and provide agricultural engineering services based on new principles of modern management;
- Determines the agroecological condition of agricultural lands using new approaches; establishes the sustainability of agroecosystems in accordance with modern research;
- Evaluates the importance of the use of land reclamation systems using the latest approaches; applies new modern approaches and, on the basis of the results of independent research, substantiates the need to implement agricultural engineering measures;
- Conducts independent research based on new achievements in the field of agricultural engineering and plans the implementation of relevant measures related, taking modern approaches into account, to soil degradation and the identification of its causes; agricultural mechanisation; the investigation of water erosion processes; the use of groundwater for irrigation; the removal of excess water from drained areas; the engineering calculations required for slope stability; the use of natural resources, groundwater, reservoirs and rivers for agricultural purposes, and economically efficient management for the purposes of agricultural activity;
- Using the latest technologies, assesses the complexity of the agricultural engineering condition of the object under study and, when considering problematic issues, takes into account the long-term vision of the environmental infrastructure and the conditions for its arrangement and use for agricultural purposes. Uses modern agricultural engineering technological installations and equipment to protect agricultural lands. Gives priority to the introduction and application of new methodology;
- Makes independent decisions and gives sound recommendations for solving current problems in the field of agricultural engineering, and on the sustainability and technical improvement of ongoing processes of agricultural engineering measures;
- Uses knowledge based on the latest achievements by combining teaching and learning methods, and takes care to consolidate and further improve it. In scientific research activities, is oriented towards the latest technological forms of modern research; in the process of analysing the results obtained, takes into account the relevant methods and criteria of evaluation derived from the research. Is able to critically analyse, synthesise and evaluate new, complex and contradictory ideas and approaches;
- Upholds the norms of ethical and professional responsibility and presents new knowledge in the field of agricultural engineering in a well-substantiated manner. Applies the experience gained through independent research to strategies and concepts formulated on the basis of new visions. Demonstrates the values of professional engineering conduct: punctuality, objectivity, organisation and a commitment to integrity, and respect for the profession.

Student Knowledge Assessment System

Assessment is carried out on a 100-point scale.

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, 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 scientific research component/components:

- Excellent (summa cum laude) – an outstanding piece of work;
- Very good (magna cum laude) – a result that exceeds the set requirements in every respect;
- Good (cum laude) – a result that exceeds the set requirements;
- Average (bene) – a work of average level that meets the basic set requirements;
- Satisfactory (rite) – a result that, despite shortcomings, still meets the set requirements;
- Unsatisfactory (insufficient) – a work of unsatisfactory level that does not meet the set requirements due to significant shortcomings in it;
- 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.

Subject	Credits
Scientific Communication Techniques	4
Teaching Methods	6
Research Methods in Agricultural Engineering	6
Soil Degradation and Water Erosion Processes	5
Reservoirs for Land Reclamation Purposes and the Possibilities of Their Use	5
Water Resources Quality and Agroecological Farming	4
Thermal and Hydric Properties of Soil and Ongoing Thermodynamic Processes	5
Conditions of Debris Flow Movement and Methods for Solving Some Engineering Problems	5
Agriculture, Management of Economic Efficiency and the Circular Economy	5

Water Demand and Water Supply of Agricultural Lands	5
Sustainability of Agroecosystems and Protection of Agricultural Lands	
Professor's Assistantship in Agricultural Engineering	5
Thematic Seminar in Agricultural Engineering	5
Research Component	-
Total	60