საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 15 of the joint meeting of the Academic Council and Senate of GTU dated December 16, 2020

Amended by
Resolution № 01-05-04/178 of the Academic Council of GTU dated December 02, 2021

Bachelor's Educational Program

Program Title

აგროინჟინერია

Agroengineering

Faculty

აგრარული მეცნიერებების და ბიოსისტემების ინჟინერინგის

Agricultural Science and Biosystems Engineering

Program Head/Heads

Associate Professor Dimitri NATROSHVILI

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Qualification to be Awarded and the Extent of the Program in terms of Credits

Bachelor of Engineering in Agroengineering
will be awarded by combining general, sectoral and elective courses (225 credits), free and elective components (15 credits) of the primary specialty in educational program, if at least 240 credits are completed.

Language of Teaching

Georgian

Prerequisite for Admission to the Program

Only the holder of a state certificate proving complete general education, or an equivalent person enrolled in accordance with the procedure established by Georgia law, shall have the right to study at the Bachelor's Educational Program.

Program Description

Bachelor's Educational Program Agroengineering is based on the ECTS system; 1 credit is equal to 25 hours,

which includes both contact and independent work hours. The distribution of credits is presented in the program curriculum. The duration of the program is 4 years (8 semesters).
The Bachelor's program comprises 240 credits (ECTS), which ensures the achievement of the program objectives and learning outcomes required to obtain a basic qualification at a level corresponding to the Bachelor's level descriptor of the Framework of Qualifications for Higher Education.
The distribution of credits is presented in the curriculum. The program consists of general and industry-specific courses in the specialty (225 credits), a free and elective component (15 credits);
The courses provided by the curriculum of the Bachelor's educational program "Agroengineering" are arranged in a logical order: from general to sectoral and from simple to complex. The curriculum contains information about the prerequisites for enrollment in the courses. One semester includes 20 weeks, of which the learning process takes 15 weeks.
The academic calendar is issued by the Rector of GTU before the beginning of the semester and is published on the website.
In the first semester - the student takes one 5-credit foreign language course; also takes 26 credits of the primary specialty (general) courses, for a total of 31 credits;
In the second semester, the student takes one 5-credit foreign language course, 19 credits of general and sectoral courses of the primary specialty, and one 5-credit course from elective education course in humanitarian sciences, for a total of 29 credits;
In the third semester -the student takes one 5-credit foreign language course, two 10-credit courses of the free components, a 15-credit course of the primary specialty, for a total of 30 credits;
In the fourth semester - the student takes one 5-credit foreign language and 25 courses in the primary specialty for a total of 30 credits;
In the fifth semester - the student takes sectoral courses in the primary specialty, for a total of 30 credits;
In the sixth semester, the student takes sectoral courses in the primary specialty, for a total of 30 credits;
In the seventh semester - the student takes 10-credits sectoral courses in the primary specialty, 5-credits elective courses in the primary specialty, and takes a 15-credit internship in agroengineering, for a total of 30 credits;
In the eighth semester - the student takes 25-credits sectoral courses in the primary specialty, develops and defends a 5-credit Bachelor's thesis. The total is 30 credits**.**

The program is prepared in accordance with accreditation standards.
The program is prepared taking into account the experience of foreign programs:

1. Iowa State University (Iowa, USA)
   https://catalog.iastate.edu/collegeofengineering/agriculturalengineering/#curriculumtext
2. BOKU - University of Natural Resources and Life Sciences (Vienna)
3. https://boku.ac.at/en/nas/ilt/courses#/en/lehrveranstaltungen/lva/287279
4. Weihenstephan-Triesdorf University (Germany)
   https://www.hswt.de/en/studies/degree-programmes/agricultural-engineering/profile.html

Program Objective

The objective of the educational program is to prepare a qualified specialist in the field of agro-engineering that meets the requirements of the modern labor market; to teach the application of machine technologies as well as melioration system in agriculture; implementation of crop irrigation and land drainage projects using modern machine technology; identification of agricultural, construction and land reclamation machines and organization of the service for the performance of agricultural and land reclamation works; determination of the parameters of operation of the appropriate complex of machines for the performance of agricultural and land reclamation works and basic regulations in accordance with agrotechnical requirements; to provide graduates with a solid foundation for further study and ongoing professional development to contribute to current work in the field of agroengineering.

Learning Outcomes/Competences (general and professional)

- Has a broad knowledge of the field of agroengineering, including a critical understanding of theories and principles as well as some of the newest aspects;
- Can use practical skills specific to the field of agroengineering to solve complex and unforeseen problems;
- Given natural and climatic, terrain conditions and agrotechnical requirements, selects machinery technologies for crop production, parameters for operation of agricultural, construction and land reclamation machinery;
- In accordance with agrotechnical requirements, selects and applies the rules of regulating the working bodies of agricultural, construction and land reclamation machines;
- Organizes maintenance of tractors, agricultural, construction and land reclamation machines in compliance with relevant norms;
- Manages water management systems in accordance with operational parameters;
- On the basis of data specific to the field of agricultural engineering, explains operational parameters of irrigation and drainage systems taking into account soil and natural-climatic conditions;
- Plans to realize practical projects related to the use of land reclamation according to predetermined directions;
- Analyzes information obtained in the course of agricultural and land reclamation works and draws appropriate conclusions before the scientific and professional community in compliance with ethical norms;
- Self-evaluates his/her own learning process, plans and directs the need for further education.

Methods of Achieving Learning Outcomes (teaching-learning)

☒ Lecture ☒ Seminar (group work) ☒ Practical ☒ Laboratory ☒ Practice

☒ Course work/Project ☒ Consultation ☒ Independent work

In the learning process, depending on the specifics of a particular study course program, the following activities of the teaching-learning methods are used, which are outlined in the relevant study course programs (syllabi):

Oral or verbal work, Written work, Explanation, Induction, Deduction, Case study, Discussion/debate, Collaborative work, Demonstration, Project development and presentation, Laboratory work, Action-oriented learning, Practical work; Cooperative learning, Brain storming, Problem-based learning (PBL), Synthesis.

Student's Knowledge Assessment System

The student's knowledge is assessed on a 100-point

scale. 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) - Failed to pass – 41-50 points, which means that the student needs more work to pass and is allowed to take an additional exam once with independent work;
- (F) - Failed - 40 points or less, which means that the work done by the student is insufficient and he/she will have to study the subject again.

In case of receiving an FX grade, a supplementary examination is scheduled no later than 5 days after the announcement of the results. The grade received in the supplementary examination shall not be added to the grade received in the final assessment.

Detailed information is provided on the GTU website: Instructions for Managing the Educational Process at Georgian Technical University.

Fields of Employment

- Ministry of Agriculture of Georgia: structural subdivisions in the field of agricultural mechanization;
- District municipalities - sectoral commissions;
- Research Center - sectoral structural subdivisions;
- District Information and Consultation Service - consultant in the field of agricultural mechanization;
- Vocational colleges, state colleges, and institutions of higher education relevant to the field;
- Tractor and farm equipment dealer companies;
- Farms, regional service centers;
- Georgian Amelioration LLC, service centers;
- United Water Supply Company of Georgia;
- Georgian Water and Power;
- Ministry of Regional Development and Infrastructure;
- JSC Georgian Water Project;
- Sando 1996 LLC;
- Objects of nature protection significance.

Opportunities for continuing education

Master's degree educational programs

Human and material resources needed to implement the program

The program is provided with adequate human and material resources. For additional information, please find the attached documentation

Number of attached syllabi: 82