



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
Resolution № 733 of the Academic
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Bachelor's Educational Program

Program Title

სასურსათო ტექნოლოგია

Food Technology

Faculty

აგრარული მეცნიერებების და ბიოსისტემების ინჟინერინგი

Faculty of Agricultural Science and Bio-system Engineering

Program Head/Heads

Associate Professor Malkhaz BEREZHIANI

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

Bachelor of Food Technology

Will be awarded by combining the 170 credits in the program, free components (10 credits) and optional modules (60 credits) 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

The duration of the program is 4 years (8 semesters). From here, all students take the first six semesters. In the said six semesters, one semester includes 20 weeks, of which the learning process

lasts 15 weeks, starting from the seventh semester a module is chosen.

In the first module (two semesters), one semester includes 20 weeks, of which the learning process lasts 15 weeks. In the first semester of the first module 8 weeks are allocated to industrial internship.

In the second module 16 weeks are allocated to industrial internship (according to the contract).

The program is composed using the ECTS system. For the first six semesters and the first module, 1 credit is equal to 25 hours. The hour loading of 1 credit of the second module is determined according to the specificity of the subjects, which implies both contact and independent working hours. The distribution of credits is presented in the program curriculum.

The academic calendar is issued by Rector GTU before the beginning of the semester and published on the website.

The first semester includes five compulsory courses in the specialty and foreign language - 5 credits. The total is 30 credits.

The second semester includes four required courses in the specialty, a foreign language - 5 credits, an elective course in humanitarian sciences - 3 credits, for a total of 30 credits.

The third semester includes five compulsory courses in the specialty, a free elective course - 5 credits - for a total of 30 credits;

The fourth semester includes five compulsory courses in the specialty, free elective course - 5 credits - for a total of 30 credits;

The fifth semester includes five compulsory courses in the specialty, for a total of 31 credits;

The sixth semester includes five compulsory courses in the specialty for a total of 29 credits;

The fourth year (seventh and eighth semesters), one of two elective modules is chosen. The number of credits for each module is 60.

Module I, the seventh semester - includes three compulsory courses in the specialty (15 credits total) and an industrial internship in food technology (15 credits), for a total of 30 credits;

The eighth semester includes two compulsory courses in the specialty and a compulsory elective course in the specialty from which the student chooses - 20 credits, for a total of 30 credits;

Module II. The module is implemented according to Appendix 1, following the agreement signed between the GTU and University of Rennes 1 (see Appendix 1). This module has prerequisites for admission. In particular: a person who has completed three bachelor's degree courses (180 credits) and has English language level B2 is eligible for the Dual Bachelor's Degree Program. The applicant must present a certificate of English language proficiency - level B2. In the absence of the above certificate, the applicant will take an examination at the GTU Examination Center.

Module II, the seventh semester includes 14 courses of the specialty, which are incorporated in 4 groups: harmonization, knowledge of the enterprise and its environment, team and workshop management skills; production and technological knowledge necessary for the production of dairy products; performance management of the global enterprise: driving factors. A total of 32 credits.

Module II, the eighth semester includes project management and industrial practice for a total of 28 credits.

Detailed information about the learning process is provided in the Instructions for Managing the Educational Process at Georgian Technical University at the following electronic address.

Program Objective

The objective of the program is to prepare specialists in the field of food technology, who will be aware of the technology of production of bakery, sugar, spirituous, confectionery, alcoholic and non-alcoholic beverages, meat and dairy products, canning; technological schemes of food production, physico-chemical processes in production, characteristics of waste used, physico-chemical analysis of food products.

Learning Outcomes/Competences (general and sectoral)

- Understands the broad field of food technology, including theories and principles.
- Identifies complex food technology issues;
- Interrelates key areas and explains food technology terminology.
- Distinguishes between methods and tools for safe operation of processes and devices, standards for maintenance and operation of devices and systems, environmental protection, regulatory, technical and organizational issues of occupational health and safety;
- Uses typical and unique methods in food technology to solve problems and plans to implement a research or practical project according to predetermined guidelines;
- Is able to safely operate equipment, machinery and facilities used in food technology, to ensure protection of technological parameters.
- Participates in the implementation of technological processes of food technology, uses modern methods of product quality control;
- Plans to participate in the implementation of innovative methods, modern technical and technological means in accordance with established methodological guidelines and instructions;
- Examines and analyzes the safety of the main and auxiliary raw materials of various origins used in food technology, as well as the mode and conditions of preparation for the technological process.
- Plans the implementation of individual study components in accordance with pre-agreed recommendations and guidelines;
- Considers the operation of technical and technological facilities in compliance with safety and environmental requirements and takes into account management and marketing suggestions in technological processes.
- Explains data specific to food technology - physico-chemical characteristics of raw materials, process regime parameters, product quality indicators, cost of production. Plans profitability - collection of production and independently prepares a report.
- Is able to analyze the obtained data using standard and some unique methods, optimally assess individual stages of technology, respond to risk factors and form a reasonable conclusion;
- Orally communicates detailed information on ideas and problems related to food technology, as well as elimination of existing problems to specialists and non-specialists in Georgian and foreign languages, creative use of modern information and communication technologies;
- Evaluates own learning process and determines the need for further learning; deepens the level of knowledge.

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 teaching-learning methods are used, which are given in the relevant education course programs (syllabi):

Discussion/debate is one of the most common methods of interactive learning activities. A discussion process greatly increases the quality of students' involvement and their activity. A discussion may turn into an argument and this process is not merely confined to the questions posed by the teacher. This method develops students' skills in reasoning and substantiating their own ideas.

Collaborative work - using this method implies dividing students into separate groups and giving each group its own task. The group members work at their issues individually and at the same time share their opinions with the rest of the group. According to the problem raised, it is possible to shift the functions among the group members in this process. This strategy ensures the students' maximum involvement in the learning process.

Demonstration method - this method of activity implies a visual presentation of information. It is quite effective in terms of achieving results. In many cases, it is better to present the material to students in both audio and visual form simultaneously. The material being studied can be demonstrated by both the teacher and the student. This method helps to make visible the different stages of understanding the learning material, to clarify what students will have to do independently; At the same time, this strategy visualizes the essence of the issue/problem. The demonstration can take a simple form.

Method of analysis - helps to break down the learning material as a whole into its component parts. This facilitates detailed coverage of individual issues within a complex problem.

Explanatory method - is based on discussing a given issue. In the process of explaining the material, the teacher brings concrete examples, the detailed analysis of which is made in the framework of the given topic.

Verbal or oral method - this method includes storytelling, conversation, etc. During the process, the teacher conveys and explains the learning material through words, and students actively perceive and internalize it by listening, memorizing and understanding.

Laboratory work - is more visual and allows perception of an event or process. In the laboratory, the student learns how to conduct an experiment. In laboratory work, the student must be able to set up, adjust, and operate equipment. 2. The skills developed in experimental teaching laboratories allow understanding the theoretical material heard in lectures. It involves the following types of actions: staging tests, showing video material, dynamic material, etc.

Cooperative learning - this is a teaching strategy in which each group member is required not only to learn independently, but also to help his teammate learn the subject better. Each group member works on a problem until everyone has mastered it.

Problem-based learning (PBL) - an activity that uses a specific problem as the initial stage of the process of acquiring and integrating new knowledge.

Practical work - the aim is to gradually learn theoretical material by solving specific problems, which is the basis for the formation of skills of independent use of theoretical material. The supervisor of practical education should focus on the methodology of problem solving.

Project development and presentation - during work on the project the student uses the acquired knowledge and skills to solve a real problem. Project-based learning increases students' motivation and responsibility. Project work includes the stages of planning, research, practical activity and presentation of results in accordance with the chosen problem.

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.

The syllabi provide for appropriate forms and methods of assessing the student's knowledge.

Fields of employment

- Factories and small businesses of bread, pasta, sugar, spirits, beer, confectionery, non-alcoholic and alcoholic beverages, juices, canned foods, milk and milk products, and meat products.
- Laboratories of food examination.
- Structural units regulating food production.
- Food markets.

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: 73