



საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
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Academic Council of GTU
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Bachelor's Educational Program

Program Title

სურსათის მეცნიერება და ტექნოლოგია

Food Science and Technology

Faculty

ქიმიური ტექნოლოგიის და მეტალურგიის

Faculty of Chemical Technology and Metallurgy

Program Head/Heads

Professor Roza KHUTSISHVILI

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

Bachelor of Science In Food Technology

will be awarded if at least 240 credits are completed

by combining 230 credits of courses with content relevant to the primary field of study and 10 credits of free components

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 Program is developed based on recognized theoretical and practical experience in the field and considering the requirements of the labor market.

The Educational Program is based on the European Credits Transfer System ECTS system . 1 credit is equal to 25 hours, which includes both contact and independent work hours. The study year equals 60 ECTS credits. The duration of the Program is 4 years (8 semesters). One semester includes 20 weeks.

According to the student's individual workload, the number of credits in one year can be less or more than 60 credits, but no more than 75 credits. The qualification will be awarded by combining 230 credits of the main specialty and 10 credits of free components in the Educational Program.

72 credits are given to mathematics, subjects of natural science (physics, chemistry, biology), 13 credits to the general technical subjects, also, the Program includes two blocks of optional subjects in the field of food, one of them is intended to acquire competencies in terms of economic education (4 study courses, 5 credits each. The student elects two study courses - 10 credits), and the second block includes private food technologies (7 study courses, 5 credits each. The student elects 3 study courses - 15 credits). The Program also includes four blocks of foreign languages (English, German, French, Russian), 5 credits each.

The Program includes introductory practice - 5 credits and production practice - 10 credits.

Also, for the Bachelor's thesis - 10 credits.

Practice is a necessary component for the higher education, which helps the student to become a professional and allows him/her to develop the acquired theoretical knowledge in a practical environment. Practice gives the student an opportunity to test the acquired knowledge in a real working environment and further refine and develop the acquired competencies.

The Program has free components in the amount of 10 credits.

The Program is finished with the defense of a Bachelor's thesis, which will establish the student as a specialist corresponding to modern requirements. The rules for organizing the learning process, conducting and evaluating students' practice, the rules for completing a Bachelor's research project/thesis, evaluating student achievements, entering into educational and financial agreements with students, and accumulating credits by students, and other information are provided in the "Instructions for the Management of the Learning Process at the Technical University of Georgia".

Program Objective

The objective of the Educational Program is:

To provide the Graduate with accurate, natural science, fundamental theories and principles of food sciences, broad knowledge of technology, skills and professional competencies necessary for the field, corresponding to the modern requirements of the labor market, which will be focused on practical activities and continuing education at the next levels of higher education.

To teach student:

The scientific bases of food industry processes, product range, concept of food safety and quality, ongoing changes during processing of raw materials, features of technological operations, labor protection and safety provided by environmental and food legislation, issues of toxic compounds and metabolism in the surrounding environment and food, safe working conditions.

Develop physico-chemical analytical methods of characterization of food components; assessment of the impact of economic factors; ability to analyze innovations in food science and technology, develop and implement food technology projects.

Learning Outcomes/Competences (general and professional)

1. **Describes** established theories and principles in the field of food technology; the composition and properties of nutrients, the purpose of materials used in production, environmental protection and labor safety norms;
2. **Discusses** the basic mechanical, thermodynamic, biochemical, microbiological, colloidal processes of food technology and their theoretical foundations;
3. **Explains** the planning, design and development of products and processes related to chemical and physical changes;
4. Considering the scientific basis of food production, **participates** in the development of food technology projects - in order to improve the nutritional value, quality and safety of products;
5. Determining, analyzing and comparing factors influencing the course of technological processes of food products production, **making** a conclusion to solve a specific task;
6. Based on the knowledge of natural and engineering sciences, as well as technology and mathematics, **conducts** a research or practical project/work in accordance with predetermined guidelines;
7. With an audience of specialists and non-specialists, in forms appropriate for the context, using information and communication technologies, **produces** clear and understandable communication about ideas related to the field, existing problems and ways to solve them.
8. Taking into account the modern methodology of product quality control, storage of raw materials of various origins and the conditions of preparation for the technological process, **participates** in the implementation of technological processes of food technology,
9. **Understands** the importance of following the principles of safety, quality and availability in the production of food products for obtaining healthy food products.
10. Based on the critical evaluation of the acquired knowledge, **determines** the need to continue to the next level of 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):

Discussion/debate; collaborative work; Problem-based learning (PBL); Case study; Brain storming; demonstration; inductive; deductive; analysis; verbal or oral; written work; laboratory; practical; explanatory; activity-based learning; presentation; cooperative learning; heuristic; synthesis; role and situation plays.

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 getting FX in the component of the Educational Program, GTU is obliged to schedule an additional exam at least 5 days after the announcement of the results of the final exam. The number of points obtained in the final assessment is not added to the grade received by the student in the additional exam. The grade obtained at the additional exam is the final grade and is reflected in the final grade of the Educational Program component. In case of receiving 0-50 points in the final evaluation of the educational component, or if the student fails to overcome the minimum competence limit in the final/additional exam, the student will be assigned a grade of F-0.

The program part of the assessment of the level of achievement of the student's learning results in each component consists of an intermediate assessment and a final exam. The mid-term assessment in turn includes the ongoing activity and the mid-semester exam.

Each evaluation form and component has a specific share in the final evaluation from the total evaluation score (100 points). In particular, the maximum score of the intermediate assessment is no more than 60, and the maximum score of the final exam is no less than 40.

Each form of assessment includes an assessment component/components, including an assessment method/methods, and the assessment method/methods are measured by assessment criteria.

The right to take the final exam is granted to a student who has accumulated at least the minimum positive grade in the component(s) of the intermediate evaluations (at least 30 points in total), as well as completed and submitted on time the minimum amount of work specified by the program in the form of documentary material.

Detailed information regarding the evaluation system is provided on the website of GTU. In the "Instruction on management of the educational process at the Technical University of Georgia".

Fields of employment

Food industry enterprises, companies: bakery, pastry, pasta, meat and milk processing, beer, alcohol, lemonade and others. Specialized-disciplinary, certification and research laboratories, monitoring agencies and organizations.

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: 94