საქართველოს ტექნიკური უნივერსიტეტი
GEORGIAN TECHNICAL UNIVERSITY

Approved by
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Bachelor's Educational Program

Program Title

საკვები პროდუქტების გადამუშავება და სამაცივრო ტექნოლოგია
Processing of Food Products and Refrigeration Technology

Faculty

სატრანსპორტო სისტემებისა და მექანიკის ინჟინერიის ფაკულტეტი
Faculty of Transport Systems and Mechanical Engineering

Program Head/Heads

Professor Givi GOLETIANI

Qualifications to be awarded and the extent of the program in terms of credits

Bachelor of engineering in food technology Will be awarded in the case of completion of a combination of 225 credits of education courses and 15 credits of free components corresponding to the primary field of study if at least 240 credits are completed.

Language of Teaching

Georgian

Prerequisite for admission to the program

Only the person with a state certificate confirming complete general education or a document equivalent to it, has the right to study at the bachelor's level who will be enrolled in accordance with the procedure established by the legislation of Georgia.

Program Description

The undergraduate educational program: "Food Processing and Refrigeration Technology" was created in the field of local as well as foreign universities (Food Engineering, Polytechnic University of Catalonia, Barcelona, Spain https://www.upc.edu/en/bachelors/food-engineering-castelldefels-eeabb Food, Agricultural and Biological Engineering, Specialization in Food Engineering, The Ohio State University, Columbia (USA) www.fabe.osu.edu https://fabe.osu.edu/future-students/majors/food-agricultural-and-biological-engineering/food-engineering Food engineering. University of Galati, Galati, Romania https://www.en.ugal.ro/faculties/faculty-of-food-science-and-engineeringFood Engineering (Food Production Engineering) Massey University New Zealand https://www.massey.ac.nz/study/all-qualifications-and-degrees/bachelor-of-food-technology-with-honours-UHFDT/
Food engineering. Erjays University, Kayseri, Turkey
https://dbp.erciyes.edu.tr/Program/Learn.aspx?Learn=H7NrhoyAODc=
Machines and devices for food and biotechnological production. Plovdiv University of Food Technology. Plovdiv, Bulgaria https://uft-plovdiv.bg/mashini-aparati/) Based on experience and taking into account labor market requirements.
The educational program is compiled according to the requirements of the European Credit Transfer System (ECTS). 1 credit is equal to 25 academic hours, which includes both contact and independent work hours. The volume of the academic year is 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 than or more than 60 credits, but not more than 75 credits.
In order to be awarded the degree "Bachelor of Engineering in Food Technology", the student must accumulate at least 240 credits, which ensures the achievement of the program goals and the results necessary for the main qualification at the level of the bachelor's degree descriptor of the higher education qualifications framework.
The educational program is made up of education courses and free components corresponding to the main field of study. Courses of content corresponding to the main field of study are presented in the form of compulsory and elective courses:199 credits of compulsory education courses, 5 credits of internship, 6 credits of Bachelor's thesis, and 15 credits of elective education courses in the specialty. The program includes free components with a capacity of 15 credits.
Internship is a necessary component of higher education, which helps the student to become a professional and allows him/her to develop the theoretical knowledge he/she has acquired in a practical environment.
The program is completed with the defense of a Bachelor's thesis, which will establish the student as a specialist corresponding to modern requirements - Bachelor of Engineering in Food Technology.
The rules for organizing the educational process, conducting and evaluating students' internship, the rules for completing the undergraduate research project/thesis, evaluating student achievements, students' educational and financial agreements, and the accumulation of credits by students, etc., are provided on the website of the Department of Learning Process Management.

Program Objective

The objective of the program is to prepare a Bachelor of Engineering in Food Technology who is competitive in the labor market, highly qualified, equipped with theoretical knowledge and practical skills who will know how to manage the technological processes of processing and packaging of food products and beverages in compliance with quality and safety norms, the selection, design and operation of technology used in cold storage and distribution in modern technological processes.

Learning Outcomes/Competences (general and professional)

Describes widespread theories and principles related to food processing and refrigeration technological processes based on some aspects of the latest knowledge;
Understands the safe operation of equipment used in the production, packaging and distribution of food products, beverages, taking into account technological regulations, for conducting work in a typical and complex environment;

Analyzes data required for processing food products and beverages in compliance with quality and safety norms/regulations, using standard, latest methods in accordance with guidelines;
Discusses theories and principles of planning, designing, packaging of food products, beverages and refrigeration plants, taking into account quality and environmental safety norms;
Justifies the economic side of food products, beverage production, packaging and distribution processes;
Chooses the materials used in the technological processes of production and processing of food products and beverages, the latest methods and approaches for the rational selection of technologies and techniques, in accordance with the guidelines;
Calculates data related to the design and operation of technological equipment used in food production, cold storage and distribution, using cognitive and practical skills, under the instructions of the supervisor.
Participates in solving problems in the technological processes of food processing equipment by communicating with specialists.
Presents arguments, conclusions regarding ways to solve problems in food processing/cold storage technology with specialists and non-specialists using modern information and communication technologies;
Assesses the need for further learning independently, following ethical principles,

Methods of achieving learning outcomes (teaching-learning)

☒ Lecture ☒ Seminar (group work) ☒ Practical ☒ Laboratory
☒ Practice ☒ Course work/Project ☒ Consultation ☒ Independent work

In the educational 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/debates; cooperative learning; collaborative work; case study; brain storming; role-playing and situational games; demonstration; analysis; synthesis; verbal or oral; written work; explanatory; action-oriented learning; Project development and presentation

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 - 41-50 assessment points, which means that the student needs more work to pass and is allowed to take the additional exam once with independent work;
- **(F)** - Failed - 40 evaluation points and less, which means that the work done by the student is not enough and he/she has to study the subject again.

In case of receiving FX in the component of the educational program, GTU will 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 at 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, taking into account the evaluation received at the additional exam, the student will be assigned an F-0 score.
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 current activity and the mid-semester exam.
Each assessment form and component has a specific share in the final evaluation total (100 points). In particular, the maximum score of the intermediate assessment is no more than 60, while the maximum score of the final

exam is no less than 40. Each evaluation form includes an assessment component/components, which includes the evaluation method/ methods, and the evaluation method/methods are measured by assessment criteria.
The right to pass the final exam is granted to a student who passed the minimum competence limit (scored at least 30 points) in the intermediate assessment. The dates of the mid-semester exam and final/supplementary exams will be specified in the Rector's order on the semester schedule.
Detailed information about the Rules for conducting and evaluating the internship of students of the Georgian Technical University and the Rules for the execution of the bachelor's research project/thesis is provided on the website of GTU.

Fields of Employment

The field of employment of the bachelor of engineering in food technology is the enterprises of the food industry: bread, pasta, tea, canning, confectionery, dairy, wine, beer, non-alcoholic beverages, meat, fish, combined food, refrigeration units, terminals, public catering facilities, distribution companies, refrigeration and air conditioning equipment repair enterprises.

The possibility of continuing education

Master's degree educational programs

Human and material resources necessary for the implementation of the program

The program is provided with appropriate human and material resources. Detailed information is provided in the attached documentation

Number of attached syllabi: 80