



## School of Agricultural and Natural Sciences

### Programme Title:

Food Processing Technology

### Qualification Awarded:

Bachelor's in Food Technologies 0104

### Programme Credits:

240 ECTS credits

### Language of Instruction:

Georgian

### Objectives of the Programme:

The aim of the educational program is to give graduates theoretical knowledge on the general principles of production and storage of food products. Graduates will be familiar with the contemporary methods of food technologies and will be able to use them. They will have knowledge and understanding on the international norms and regulations of food safety as well as develop practical skills in food technology.

If, the graduates of the Bachelor Program will be able to continue their studies on the next level of education, after completing the necessary procedures in accordance with the Law on Higher Education.

The program prepares food industry specialists for local and international labour markets.

### Career Options:

Graduates of the Bachelor's in Food Technologies program have a wide range of employment perspectives, namely:

- Agricultural raw material processing companies;
- Food industry companies;
- Ministry of Environment Protection and Agriculture of Georgia;
- NGOs of the relevant profile;
- Small farms;
- State and non-state organizations monitoring food safety;
- Grocery supermarkets

### Admission Prerequisites:

Admission to the programme is carried out in accordance with the Law of Georgia on Higher Education and in accordance with the provisions of the unified national examinations approved by Order N19/N of 18 February 2011.



To facilitate the mobility of high school graduates and prospective students, it is permissible to enrol in an educational programme without passing unified national examinations, in accordance with the rules and terms defined by the Ministry of Education and Science of Georgia, for those that are:

- foreign citizens or persons without citizenship, who received complete general education or its equivalent abroad;
- Georgian citizens who received complete general education abroad or its equivalent and during the last two years of complete general education had been studying abroad;
- foreign citizens, who have studied/ are studying and have received credits/qualifications abroad from a Higher Educational Institution recognized by the legislation of that country;
- Georgian citizens, who, for the term defined by the Ministry of Education and Science of Georgia, lived/are living, studied/are studying and have received credits/qualifications abroad from a Higher Educational Institution recognized by the legislation of that country.

Enrolment in educational programs is also possible through mobility, in accordance with the Rule of Transfer Between High Educational Institutions defined by the by Order N10/N of February 4, 2010 by the Minister of Education and Science of Georgia.

### Learning Outcomes (Competences)

After completion of the program graduates will know:

- physicochemical and microbiological bases of agricultural raw material processing and technological & biotechnological methods of processing;
- nutritional value of the specific products;
- physicochemical, gustatory and microbiological characteristics, in accordance with international standards;
- physicochemical and microbiological methods of quality control;
- about the general principles of the machinery, used in food industry.

On the basis of this knowledge, the graduates of the Bachelor Program will be able to:

- process various agricultural raw materials in order to obtain food products with appropriate organoleptic, chemical and microbiological indicators; keep them in compliance with the appropriate conditions;
- plan and design various assortment of foodstuffs, store and distribute products, select appropriate machinery and equipment to calculate the economic parameters of production.

The graduates will study the international rules and regulations of certification and standardization of food products.

After completing the Bachelor's Degree, graduates will own general and specific competencies listed below:



## **General Competences:**

Graduates will be able to:

- apply critical thinking, discuss and debate;
- professionally write and communicate in native language;
- write and communicate scientific material in foreign languages (English) ;
- adapt and act in unfamiliar and changing environments;
- work in a group;
- continuously learn and deepen the knowledge;
- process scientific literature, analyse it and publicly discuss it;
- use modern information and communication technologies;
- plan a research, conduct it, analyse the results and draw conclusions;
- appreciate and respect differences and cultural diversity.

## **Specific Competences:**

Graduates will have:

- knowledge of the physicochemical, biochemical and microbiological processes used in food production technology, fermentation and enzymatic technologies;
- ability to carry out physicochemical and microbiological control of food products;
- understand the international and local regulations of standardization and certification of food products and the importance of food safety issues for human health;
- knowledge of the production and storage of food products, machinery and their classification, general principles of calculation of the food processes;
- understanding of the importance and use of functional foods, various additives, nutraceuticals;
- knowledge of technological principles of processing various raw materials;
- ability to process different raw materials of vegetable and animal origins;
- knowledge of the basics of the design of food enterprises, economic calculation and management.

Competences developed in the Program are evaluated in accordance with the six criteria for the first level of Higher Education set by the National Qualification Framework:

## **Knowledge and Understanding:**

Graduates will have:

- knowledge of information needed for food processing technology;
- understanding of the impact of the human factor on the technological processes;
- knowledge of the basic principles of food processing technology;
- understanding of the basic biochemical processes, based on the production of food products;
- knowledge of the methods of thermodynamic analysis of technological processes. Principles of the phenomena of heat and mass transfer in technological processes;
- knowledge of the relevant terminology and classification;



- understanding of the impact of research on research facilities and the environment.

### **Applying Knowledge to Practice:**

Graduates will be able to:

- conduct adequate analyses using specific modern methods;
- master and use experimental methods of biochemistry to independently acquire modern complex technologies related to the production of food products;
- independently master and use computer programs for new statistical analysis;
- to collect and analyse data independently or in a group.

### **Ability to Make Conclusion:**

Graduates will be able to:

- collect data, analyze and formulate the findings in order to solve a problem;
- make conclusions about the development of different fields of food processing technology;
- make rational and adequate decisions;
- conduct an independent analysis of new and established data and / or situations using appropriate field methods and scientific knowledge;
- make conclusions and take adequate measures for production hygiene, waste management and environmental protection;
- identify alternative solutions of the problem, as well as justify and safeguard the made decisions;
- describe the business environment in which food products are manufactured and understand the impact of management principles in the decision-making process;
- make conclusions regarding the completion of the food production process and how relevant it is in accordance with the existing legislation.

### **Communication Skills:**

Graduates will be able to:

- use modern computer and communication technologies;
- communicate with colleagues and field specialists regarding the technological processes and engineering issues in English language;
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- participate in discussions with the relevant specialists of the field;
- use relevant informational databases and prepare their abstracts;
- express their opinion to a professional audience.

### **Ability to Learn:**

Graduates will be able to:



- evaluate and plan consistent and multilateral learning processes, as well as to determine further learning needs, such as seminars; professional skills and internships; obtaining an academic degree; study trainings or exchange programs.
- find information and experimental data from the existing literature and electronic sources;
- expand its knowledge of food technologies and nutriology, using scientific methods.

#### **Values:**

Graduates will be able to:

- actively participate in the formation of moral and professional values and contribute to the establishment of these values, as well as protection of professional values (transparency, punctuality, accuracy, objectivity, organization and other), ethics and morals.
- identify and criticize the methods of nutritional health researches of the population and their compliance with biomedical norms;
- critically evaluate the importance of new food products for human health.

### **Learning and Teaching Methods**

In order to achieve learning outcomes, the purpose of each study course is to determine the appropriate learning and teaching methods. In the frame of the program, the following methods are used: the verbal method, discussions / debates, demonstration method, group work, case-studies, brainstorming, inductive method, deductive method, role and situational games, practical and laboratory studies and analysis.

Within the framework of academic freedom, the lecturer is entitled to specify and use methods that are not included in the program and/or not use any of the learning and teaching methods from the program, based on the course content.

The following evaluating tools are used in order to measure the learning outcomes: homework assignments, tests, practical exams, presentation of completed works, projects and other tools. According to the training courses, teaching methods are written in syllabus.

### **Knowledge Assessment System**

Student's knowledge is assessed by a score system out of 100 points. The assessment is multicomponent and meets the rules of calculating higher educational program credits, approved by the Order N3 issued on 5 January 2007 by the Minister of Education and Science of Georgia.

During the assessment of student's knowledge, all the academic staff and any invited personnel are obliged to use the above-mentioned rule. Following scheme is used to assess the knowledge:

#### **1. Five types of positive assessment:**

- (A) Excellent – score between 91-100;



- (B) Very good – score between 81-90;
- (C) Good – score between 71-80;
- (D) Satisfying – score between 61-70;
- (E) Sufficient – score between 51-60.

## 2. Two types of negative assessment:

(FX) Fail to pass – score between 41-50, which means that the student needs to work more and he or she is able to redeliver exam after the independent preparation;

(F) Fail – score 40 and below, which means that work done by students is not sufficient and he or she must study the course again.

During the assessment of study outcomes forming and summary assessment forms are used. These include, but are not limited to: homework tasks, laboratory work, tests, oral and written exams, presentations, essays, projects.

### Study plan (Curriculum)

Curriculum and semester plan are available. The description of the study components is described in the syllabi.

### Human and Material resources

Agricultural University of Georgia employs outstanding academic and invited personnel with successful experience (see annex) for its educational programmes.

Educational programmes are financially and materially supported. For implementation of the programmes university allocates relevant financial resources. Programmes are also supported materially. Educational programmes are taught at Kakha Bendukidze University Campus, which is equipped with all the necessary inventory and other resources needed for high quality education.