



# EDUCATIONAL PROGRAM

**6B07 - Engineering, Manufacturing and Civil engineering**  
(Code and classification of the field of education)

**6B072 - Manufacturing and processing**  
(Code and classification of the direction of training)

**0720**  
(Code in the International Standard Classification of Education)

**B068 - Food production**  
(Code and classification of the educational program group)

**6B07202 - Technology of Food Products**  
(Code and name of the educational program)

**Bachelor**  
(Level of preparation)

**Semey**

## **Educational program**

**6B07 – Engineering, manufacturing and construction industries**  
(Code and classification of the field of education)

**6B072 - Industrial and manufacturing branches**  
(Code and classification of the direction of training)

**0720**  
(Code in the International Standard Classification of Education)

**B068 - Food production**  
(Code and classification of the educational program group)

**6B07202 - Technology of Food Products**  
(Code and name of the educational program)

**bachelor**  
(Level of preparation)

# PREFACE

## Developed

The educational program 6B07202 - Technology of Food Products in the direction of preparation 6B072 - Industrial and manufacturing branches on the basis of the State Compulsory Standards of Higher and Postgraduate Education approved by the Order of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No 2 (as amended by the order) was developed by the Academic Committee dated 20.02.2023 No 66).

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## Reviewed

at a meeting of the Academic Quality Committee of the Faculty of Engineering and Technology  
Protocol No. 3 dated 15.01.2024

at a meeting of the Academic Quality Committee of the Research School of Food Engineering  
Recommended for approval by the Academic Council of the University  
Protocol No. 1 , dated 06.06.2024

## Approved

at a meeting of the University Academic Council by protocol No. 6/1 of January 19, 2024.

at a meeting of the University Academic Council by protocol No. 11 of June 28, 2024.

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# 1.Introduction

## 1.1.General data

The department "of Food Production Technology and Biotechnology" of the Research School of Food Engineering provides training for the educational program "6B07202 Technology of food products."

This educational program was developed taking into account the needs of the labor market in the food industry. The modular organization of the program is aimed at the gradual acquisition by students of the competencies necessary for the quality performance of their professional activities.

The peculiarity of the educational program lies in the highly qualified teaching staff - about 70% of the teaching staff have PhD, candidate and doctor of sciences degrees. There is the material and technical equipment of the educational program; international credit mobility, external and internal mobility were introduced; a close relationship has been established with employers and graduates of the educational program, there is an opportunity to continue postgraduate education.

When implementing the educational program, it is planned to use artificial intelligence tools in the educational process, thereby developing digital competencies among students in a rapidly changing technological environment.

The educational program provides for the education of a student with special educational needs in the conditions of a higher educational institution, as well as his socialization and integration into society.

## 1.2.Completion criteria

The main criterion for the completion of the educational process for the preparation of bachelors is the mastering by students of at least 205 credits of theoretical training, as well as at least 27 credits of practical training,8 credits of final certification.

A total of 240 credits.

1.3.Typical study duration: 4 жыл

## 2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Formation of a competitive competent specialist of the food industry, the most relevant to the requirements of modern industrial production
<b>2.2.Map of the training profile within the educational program</b>	
Code and classification of the field of education	6B07 - Engineering, manufacturing and construction industries
Code and classification of the direction of training	6B072 - Industrial and manufacturing branches
Code in the International Standard Classification of Education	0720
Code and classification of the educational program group	B068 - Food production
Code and name of the educational program	6B07202 - Technology of Food Products
<b>2.3.Distinctive features of the OP (double degree/joint, OVPO-partner, Double major, innovative)</b>	-
<b>2.4.Qualification characteristics of the graduate</b>	
Degree awarded / qualification	Bachelor of engineering and technology in the educational program
Name of professional standard	<ol style="list-style-type: none"> <li>1. Ет және ет өнімдерін өндіру.</li> <li>2. Сүт және сүт өнімдерін өндіру.</li> <li>3. Жарма өндірісі.</li> <li>4. Қантты кондитерлік өнімдер мен какао ұнтағын өндіру.</li> <li>5. Макарон өнімдерін өндіру.</li> <li>6. Ірімшік өндірісі.</li> <li>7. Сүт өнімдерін өндіру.</li> <li>8. Шұжық өнімдері мен гастрономиялық ет өндірісі.</li> <li>9. Нан-тоқаш және ұн кондитерлік өнімдерін өндіру.</li> </ol>
Atlas of new professions	-
Regional standard	-
Name of the profession / list of positions of a specialist	<ul style="list-style-type: none"> <li>- Technologist</li> <li>- Technician-technologist of the production laboratory</li> <li>- Technologist calculator</li> <li>- Shop foreman</li> <li>- Technician-laboratory assistant of the production laboratory</li> <li>- Specialist in research laboratories</li> <li>- Laboratory assistant in educational institutions</li> <li>- Specialist of design organizations</li> <li>- Methodist in education departments</li> </ul>
OQF qualification level (industry qualification framework)	6
Area of professional activity	The area of professional activity of the bachelor is the food industry, ensuring the development of technological processes and production of food products, design and research organizations, as well as companies of various forms of ownership.
Object of professional activity	<ul style="list-style-type: none"> <li>- Meat factories</li> <li>- Sausage shops</li> </ul>

	<ul style="list-style-type: none"> <li>- Fish canning factories</li> <li>- Dumplings shops</li> <li>- Dairy factories</li> <li>- Confectionery shops</li> <li>- Catering establishments (canteens, cafes, restaurants)</li> <li>- Laboratories for food production and veterinary and sanitary control;</li> <li>- Scientific research institutes and laboratories</li> <li>- Design organizations</li> <li>- Educational establishments</li> </ul>
Types of professional activity	<ul style="list-style-type: none"> <li>- organization of technological processes; improvement of technological operations and participation in the development of resource-saving technological processes; analysis of technical equipment and production activities of enterprises, taking into account the requirements of ecology, labor protection, fire explosion safety and industrial sanitation;</li> <li>- organization of work of labor collectives, management decisions; analysis of technical and economic indicators of enterprises and marketing activities; performance of work on standardization and certification of food products;</li> <li>- development and design of technological schemes for food industry enterprises and public catering enterprises; reconstruction of existing food industry and public catering enterprises;</li> <li>- study and analysis of scientific and technical information, domestic and foreign experience in the food industry;</li> <li>- work in the field of education.</li> </ul>
<b>2.5. Graduate Model</b>	<p>Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technologies taking into account current trends in the development of society;</p> <ul style="list-style-type: none"> <li>- To use the basics of natural science knowledge and methodology to identify production problems and solve professional problem;</li> <li>- To apply scientific knowledge gained during general engineering training to improve technological processes;</li> <li>- To apply knowledge of general methods of exposure to raw materials in professional activities;</li> <li>- To ensure the production of high-quality food products in accordance with the requirements of regulatory documents and modern nutrition science;</li> <li>- To organize the technological process of production at the enterprises of the food industry;</li> <li>- To organize the technological process of production at the enterprises of the food industry;</li> <li>- To manage the activities of food industry enterprises;</li> <li>- To develop design standards for the organization of the enterprise.</li> </ul>

### **3. Modules and content of the educational program**

#### **Module 1. Fundamentals of social and humanitarian knowledge**

##### **Brief description of the module content**

This module reveals such aspects as: socio-cultural, economic-legal, environmental knowledge, communication skills, the use of information technology taking into account modern trends in the development of society.

##### **Module disciplines**

Foreign language

Kazakh(Russian) language (1)

Bases of economics, law and ecological knowledge

Physical Culture

Foreign language

History of Kazakhstan

Kazakh(Russian) language (2)

The module of socio-political knowledge (sociology, political science, cultural studies, psychology)

Physical Culture

Physical Culture

World of Abai

Information and communication technology

Physical Culture

Philosophy

#### **Module 2. Natural science knowledge**

##### **Brief description of the module content**

The module is aimed at obtaining key competencies that contribute to obtaining natural science literacy. The module contributes to the construction of knowledge aimed at the formation of basic logical, research actions, the ability to work with information. The purpose of the module is to form an active civic position among the student on issues related to the development of natural sciences and the application of achievements. As a result of learning the module, the student will be able to scientifically explain phenomena, will understand the features of natural science research, will be able to scientifically interpret data and use evidence to draw conclusions.

##### **Module disciplines**

Introduction to the technology of food productions

Mathematics

Physics

Chemistry

#### **Module 3. characteristics of raw materials and technological processes**

##### **Brief description of the module content**

The module will facilitate the application of fundamental knowledge (mathematical, natural sciences, engineering and economics) to identify, formulate and solve problems in professional activities. The module will facilitate the use by students of effective methods of working with information using modern information and communication technologies, planning and conducting experimental and industrial tests, reading technical documents, the ability to recognize drawings, diagrams. The module will provide an opportunity to study domestic and foreign experience in the field of food engineering.

##### **Module disciplines**

Educational practice

Engineering Graphics

Microbiology of food products

Biochemistry

Technological equipment of meat, dairy industry and public catering enterprises

Technological equipment of the baking, macaroni and confectionery industry

#### **Module 4. Ensuring the quality of food products**



### **Brief description of the module content**

The module is aimed at obtaining knowledge on the classification of food raw materials used in various branches of the food industry, on the scientific foundations of technological processes in the food industry, technologies for obtaining basic types of products by branches of the food and processing industry, storage conditions of raw materials and finished products, assessment of their quality, application of new, most advanced methods of processing raw materials will be considered. The module is aimed at studying food technology - the science of converting raw materials (raw materials) into products of production necessary for society, with the lowest labor, raw materials and energy costs per unit of production due to increased labor productivity for given conditions and time.

#### **Module disciplines**

General technology of processing industries  
General technology of food production  
Grain science with the basics of crop production  
Production practice I  
Physical methods of food processing

### **Module 5. Ensuring the quality of food products**

#### **Brief description of the module content**

The module is designed to form a professional position of students in the field of production of high-quality and safe food products. The module contributes to the formation of knowledge, skills and practical skills necessary for production, technological and research activities, quality control and safety of raw materials and finished products, as well as factors ensuring the production of high-quality and safe products. Students will acquire knowledge on the quality indicators of agricultural products, the requirements of the regulatory framework for the quality of agricultural raw materials and products of its processing.

#### **Module disciplines**

Technological bases of physiology, hygiene and sanitation of nutrition  
Commodity research of grain products  
Commodity research of food products  
Scientific basis of food production research  
Control and assessment of the quality of raw materials and food products  
Technochemical control of processing industries

### **Module 6. Technology of production of animal and vegetable products**

#### **Brief description of the module content**

The module is aimed at studying the organization and management of the technological process at enterprises, improving and improving the efficiency of technological processes to increase the yield and quality of finished products, calculating technical and economic indicators of food production enterprises, ensuring the production of high-quality, competitive products that meet the requirements of standards. After completing the module, the student will demonstrate knowledge and understanding in the field of food technology, solve problems in the field of food technology; interpret information in the field of food technology to form ethical and scientific considerations.

#### **Module disciplines**

Technology of grouts industry  
Technology of macaroni industry  
Technology of public catering products production  
Technology of whole milk production  
Modern technologies of storage of meat, dairy products and public catering  
Modern technologies of storage of bakery, pasta, confectionery products  
Technology of flour production  
Sausage production technology  
Butter and cheese technology  
Technology of elevator industry  
Production practice II  
Service and maintenance in catering  
Special technologies of processing industries

Technology of vegetarian and dietary dishes at catering establishments  
Technology of sugar confectionery and chocolate  
World cuisine  
Technology of flour confectionery  
Technology of canned meat and fish production  
Technology of breadmaking  
Technology of functional foods production  
Technology of fermentation industries  
Technology of children and dietary milk products  
Technology of combined feed industry  
Technology of production of meat products for children and dietary nutrition  
Vegetable oil production technology  
Technology of dry dairy products and canned milk

## **Module 7. Organization of the companys activities**

### **Brief description of the module content**

The module is aimed at studying the management activities of enterprises, the design of food industry enterprises, and the organization of production of economic activities. The module contributes to the formation of skills in carrying out technological calculations related to the selection of equipment and the design of food processing lines; in the use of regulatory documents for the design of technological lines of food production; for timely and reliable reflection of operations for the acceptance of raw materials, its consumption of finished products, systematic control over the consumption of raw materials, compliance with established norms of consumption of raw materials, materials. Upon completion of its study, the module helps students to develop organizational and economic measures aimed at developing the economic potential of the enterprise, increasing its efficiency and strengthening competitiveness.

### **Module disciplines**

Organization and planning of production  
Designing of enterprises of the meat, dairy industry and public catering  
Designing of the enterprises of the baking, macaroni and confectionery industry  
Technological reporting at the enterprises of deep processing of grain  
Technological reporting at the enterprises of the meat, dairy industry and public catering  
Cost management  
Economics of enterprise  
Pre-diploma practice  
Production practice III

## **Final examination**

### **Brief description of the module content**

Writing and defending a graduation project or preparing and passing a comprehensive exam.

### **Module disciplines**

Diploma project  
Comprehensive exam

**4. Summary table on the scope of the educational program  
«6B07202 - Technology of Food Products»**

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
<b>Module 1. Fundamentals of social and humanitarian knowledge</b>										
Foreign language	GER/CC	1	5	150		45		35	70	Examination
Kazakh(Russian) language (1)	GER/CC	1	5	150		45		35	70	Examination
Bases of economics, law and ecological knowledge	GER/US	1	5	150	15	30		35	70	Examination
Physical Culture	GER/CC	1	2	60		60				Differentiated attestation
Foreign language	GER/CC	2	5	150		45		35	70	Examination
History of Kazakhstan	GER/CC	2	5	150	15	30		35	70	Qualification examination
Kazakh(Russian) language (2)	GER/CC	2	5	150		45		35	70	Examination
The module of socio-political knowledge (sociology, political science, cultural studies, psychology)	GER/CC	2	8	240	30	45		55	110	Examination
Physical Culture	GER/CC	2	2	60		60				Differentiated attestation
Physical Culture	GER/CC	3	2	60		60				Differentiated attestation
World of Abai	BS/US	3	3	90	15	15		20	40	Examination
Information and communication technology	GER/CC	4	5	150	15	15	15	35	70	Examination
Physical Culture	GER/CC	4	2	60		60				Differentiated attestation
Philosophy	GER/CC	5	5	150	15	30		35	70	Examination
<b>Module 2. Natural science knowledge</b>										
Introduction to the technology of food productions	BS/US	1	3	90	15	15		20	40	Examination
Mathematics	BS/US	1	5	150	15	30		35	70	Examination
Physics	BS/US	1	3	90	15	15		20	40	Examination
Chemistry	BS/US	3	5	150	15	15	15	35	70	Examination
<b>Module 3. characteristics of raw materials and technological processes</b>										
Educational practice	BS/US	2	2	60						Total mark on practice
Engineering Graphics	BS/US	3	5	150	15	30		35	70	Examination
Microbiology of food products	BS/US	3	5	150	15	15	15	35	70	Examination
Biochemistry	BS/US	4	5	150	15	15	15	35	70	Examination
Technological equipment of meat, dairy industry and public catering enterprises	BS/CCh	5	5	150	15	30		35	70	Examination and term work/Project

Technological equipment of the baking, macaroni and confectionery industry	BS/CCh	5	5	150	15	30		35	70	Examination and term work/Project
<b>Module 4. Ensuring the quality of food products</b>										
General technology of processing industries	BS/CCh	3	5	150	15		30	35	70	Examination
General technology of food production	BS/CCh	3	5	150	15		30	35	70	Examination
Grain science with the basics of crop production	BS/CCh	4	5	150	15	15	15	35	70	Examination
Production practice I	BS/US	4	5	150						Total mark on practice
Physical methods of food processing	BS/CCh	4	5	150	15	15	15	35	70	Examination
<b>Module 5. Ensuring the quality of food products</b>										
Technological bases of physiology, hygiene and sanitation of nutrition	BS/US	2	5	150	15	30		35	70	Examination
Commodity research of grain products	BS/CCh	3	3	90	15	15		20	40	Examination
Commodity research of food products	BS/CCh	3	3	90	15	15		20	40	Examination
Scientific basis of food production research	BS/US	5	5	150	15	15	15	35	70	Examination and term work/Project
Control and assessment of the quality of raw materials and food products	BS/CCh	6	5	150	15		30	35	70	Examination
Technochemical control of processing industries	BS/CCh	6	5	150	15		30	35	70	Examination
<b>Module 6. Technology of production of animal and vegetable products</b>										
Technology of grouts industry	AS/CCh	4	5	150	15	15	15	35	70	Examination
Technology of macaroni industry	AS/CCh	4	5	150	15	15	15	35	70	Examination
Technology of public catering products production	AS/CCh	4	5	150	15	15	15	35	70	Examination
Technology of whole milk production	AS/CCh	4	5	150	15	15	15	35	70	Examination
Modern technologies of storage of meat, dairy products and public catering	BS/CCh	5	5	150	15		30	35	70	Examination
Modern technologies of storage of bakery, pasta, confectionery products	BS/CCh	5	5	150	15		30	35	70	Examination
Technology of flour production	AS/CCh	5	5	150	15	15	15	35	70	Examination
Sausage production technology	AS/CCh	5	5	150	15	15	15	35	70	Examination
Butter and cheese technology	AS/CCh	5	5	150	15	15	15	35	70	Examination
Technology of elevator industry	AS/CCh	5	5	150	15	15	15	35	70	Examination
Production practice II	BS/US	6	5	150						Total mark on practice
Service and maintenance in catering	BS/CCh	6	5	150	15	15	15	35	70	Examination
Special technologies of processing industries	BS/CCh	6	5	150	15		30	35	70	Examination
Technology of vegetarian and dietary dishes at catering establishments	BS/CCh	6	5	150	15		30	35	70	Examination
Technology of sugar confectionery and chocolate	BS/CCh	6	5	150	15	15	15	35	70	Examination
World cuisine	AS/CCh	6	5	150	15		30	35	70	Examination
Technology of flour confectionery	AS/CCh	6	5	150	15		30	35	70	Examination

Technology of canned meat and fish production	AS/CCh	6	5	150	15	15	15	35	70	Examination
Technology of breadmaking	AS/CCh	6	5	150	15	15	15	35	70	Examination
Technology of functional foods production	BS/US	7	6	180	30		30	40	80	Examination
Technology of fermentation industries	AS/CCh	7	6	180	30		30	40	80	Examination
Technology of children and dietary milk products	AS/CCh	7	6	180	30		30	40	80	Examination
Technology of combined feed industry	AS/CCh	7	5	150	15	15	15	35	70	Examination
Technology of production of meat products for children and dietary nutrition	AS/CCh	7	6	180	30		30	40	80	Examination
Vegetable oil production technology	AS/CCh	7	6	180	30		30	40	80	Examination
Technology of dry dairy products and canned milk	AS/CCh	7	5	150	15	15	15	35	70	Examination
<b>Module 7. Organization of the companys activities</b>										
Organization and planning of production	BS/CCh	7	3	90	15	15		20	40	Examination
Designing of enterprises of the meat, dairy industry and public catering	BS/CCh	7	6	180	30	30		40	80	Examination and term work/Project
Designing of the enterprises of the baking, macaroni and confectionery industry	BS/CCh	7	6	180	30	30		40	80	Examination and term work/Project
Technological reporting at the enterprises of deep processing of grain	BS/CCh	7	5	150	30	15		35	70	Examination
Technological reporting at the enterprises of the meat, dairy industry and public catering	BS/CCh	7	5	150	30	15		35	70	Examination
Cost management	BS/CCh	7	3	90	15	15		20	40	Examination
Economics of enterprise	BS/CCh	7	3	90	15	15		20	40	Examination
Pre-diploma practice	AS/CCh	8	15	450						Total mark on practice
Production practice III	AS/CCh	8	15	450						Total mark on practice
<b>Final examination</b>										
Diploma project		8	8	240						
Comprehensive exam		8	8	240						

**NON -PROFIT LIMITED COMPANY «SHAKARIM UNIVERSITY OF SEMEY»**

**THE DEVELOPMENT PLAN OF THE EDUCATIONAL PROGRAM**

6B07202 "Technology of food products"

for 2024-2028

**Semey 2024**

## Content

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**1. Passport of the Development Plan of the Bachelor's EP 6B07202 - « Food technology»**

1	Basis for development	Development program of the Non -Profit Limited Company «Shakarim University of Semey» for 2023-2029. School Work Plan
2	Implementation deadlines	2024-2028
3	Expected results of implementation	Obtaining deep theoretical and practical knowledge and skills, assuming a clear orientation of students to successful professional activity, personal growth that meets the requirements of employers. Achieving a high level of quality of higher education that meets the needs of the labor market, the tasks of industrial and innovative development of the country, the individual and corresponds to the best world practices in the field of education



## **2. Analytical justification for the EP**

### **2.1 Information about the educational program**

The educational program has been developed in accordance with the National Qualifications Framework and Professional Standards, according to the Dublin Descriptors and the European Qualifications Framework. The typical period of mastering the bachelor's degree program is 4 years.

The main criterion for the completion of the educational process is the development of at least 240 credits, with the award of a bachelor's degree in Food Technology.

The content of the educational program is established by the following documents:

- License to conduct an educational program;
- The state mandatory standard of education at all levels of education. (Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604. Registered with the Ministry of Justice of the Republic of Kazakhstan on November 1, 2018 No. 17669).

The University has documented the procedures and forms for the development, approval, quality assessment and improvement of the OP ("Regulations on the modular educational program"; "Regulations on the Academic Council"; "Plans for the development of the OP"; "Graduate models").

According to this educational program, the schedule of the educational process (academic calendar), the catalog of elective disciplines, working curricula for the entire period of study, including the corresponding cycles of disciplines – general education, basic and profiling, have been approved. Each cycle consists of disciplines of a mandatory component, a university component, a component of choice.

The total amount of theoretical training is 240 credits 7200 hours (1 credit is equal to 30 hours), including:

OOD cycle(OK) – 51 credits (1530 hours)

OD(VC) cycle -5 credits (150 hours)

DB, PD (VC, KV) cycle – 176 credits (5280 hours)

FSC– 8 credits (240 hours)

The educational program is implemented for students by the graduating department of " Department of Food Technology "

The uniqueness of the program lies in the opportunity for students to participate in scientific programs, startup projects, realize their creative possibilities through scientific research, creative projects, sports events, as well as continue further studies in master's and doctoral studies.

## 2.2 Information about students

Academic year	2024-2025 academic year	2025-2026 academic year	2026-2027 academic year	2027-2028 academic year
Basics of training				
Grant	110	110	110	110
Contract	7	8	9	10
Total	117	118	119	120

## 2.3 Internal and external conditions for the development of educational programs

For the development and implementation of the educational program 6B07202– Food technology, the department has created favorable and optimal conditions such as:

- highly qualified teaching staff;
- high material and technical equipment of the OP;
- close cooperation with employers;
- modern educational and methodological base, with students' access to information and analytical resources of the world scientific world;
- application of modern and interactive TSO ;
- academic mobility (external and internal);
- high-quality professional infrastructure (educational resources);
- there are educational laboratories equipped with special equipment and materials for conducting laboratory and practical classes.
- The provision of educational programs with educational and methodological complexes of disciplines is 100%.
- The teaching staff of the department have personal computers and free Internet access.

The availability of high-quality professional infrastructure (educational resources) necessary for the implementation of the OP is a guarantee of the training of highly qualified specialists of modern times.

At the department, the base of practice is determined for students according to the educational program, agreements and contracts are concluded with enterprises for passing educational, industrial and pre-graduate practices. Currently , there are concluded and valid agreements on the passage of production technological practices in the following enterprises:

1. Sausage shop of IP "Masaeva A.T.", Semey
2. K\X "Kalikanuly", Semey, (Aisha)
3. IP "Alpieva G.A." Restaurant "Ken dala", Semey
4. Bagration LLP , Semey
5. Halva LLP, Semey

- 6. IP "Alteev B.R." Sausage shop "Asau", Semey
- 7. Vostok-Moloko Corporation LLP, Ust-Kamenogorsk, East Kazakhstan region

Internal and external academic mobility is carried out for students. The University has a corresponding regulation "P 042-1.08-2019 Regulation on academic Mobility of Shakarim University". Among the partner universities for academic mobility there are both leading domestic universities (Almaty Technological University, S. Seifullin KATU, Zhangir Khan West Kazakhstan State University) and foreign universities (Pamukkale University, Turkey; Czech Agrotechnical University, Czech Republic, Prague). A memorandum of cooperation was signed with Northwest China University of Agriculture and Forestry - Northwest A&F University (China, Xinyang, Shaanxi Province)

#### 2.4 Information about teaching staff implementing the educational program

<b>№</b>	<b>Indicators</b>	<b>Units of measurement</b>	<b>2024-2025 academic year</b>	<b>2025-2026 academic year</b>	<b>2026-2027 academic year</b>	<b>2027-2028 academic year</b>
1	Share of teaching staff with an academic degree in EP	%	54	55	55	56
2	Including the share of teaching staff with an academic degree in the cycle of general education disciplines	%	26	27	27	28

#### 2.5 Characteristics of the achievements of the EP

In 2021, the educational program 6B07202 "Food Technology" was accredited for a period of 3 years by the Independent Accreditation and Rating Agency ENQA (16.04.021-15.04.2024), Number AB 3265.

#### 3. Main objectives of the EP development plan

The educational program "Technology of food products" was created based on the request of employers.

The main goal of the OP and its development is the formation of a competitive competent specialist in the food industry that meets the requirements of modern industrial production as much as possible.

The main objectives of the development plan are the following:

№	Name of the task	Terms of development	Stages of development
	Training of in-demand personnel with higher and postgraduate education, meeting the needs of the internal and external labor market	The entire period of study 2024 – 2028	Planning the work of the department in accordance with the criteria and requirements for assessing the quality of education of state and international accreditation centers (NCAOKO, NAAR, ACQUIN, RRA)
1	Providing conditions for obtaining a full-fledged, high-quality professional education	The entire period of study 2024 – 2028	Development of measures to improve the quality of educational services for the development of professional skills of future specialists
2	Formation of the main professional competencies of future specialists	The entire period of study 2024 – 2028	Updating the content of the OP. Acquisition of professional competencies in the field of food production.
3	Graduation of competitive specialists with knowledge of a professional foreign language	The entire period of study 2024 – 2028	<ul style="list-style-type: none"> <li>- increase in the proportion of students studying at least one semester in foreign universities in a foreign language (from 5 to 10 until 2023);</li> <li>- study of a foreign language teaching staff of the department;</li> <li>- participation in international competitions for language internships of teaching staff abroad.</li> </ul>
4	Interaction of the university with employers to assess the competencies of university graduates, satisfaction with the quality of graduate training	The entire period of study 2024 – 2028	<ul style="list-style-type: none"> <li>involvement of employers in the development and implementation of an educational program;</li> <li>- conclusion of contracts for practical training on the basis of leading food enterprises;</li> <li>- increasing the share of the dual training system (up to 3-4 disciplines by 2026) at leading food and industrial enterprises</li> </ul>
5	Increasing the research potential of the EP	The entire period of study 2024 – 2028	<ul style="list-style-type: none"> <li>- active participation of scientists in state competitions for grant funding of research projects;</li> <li>-involvement of students in research activities with subsequent publication of research results in foreign scientific publications with a non-zero impact factor</li> </ul>

#### 4. Risk Analysis of the Educational Program

№	Name of risks	Measures to eliminate
1	Reduction of the contingent of students in the EP	Strengthening career guidance
2	Insufficient level of language knowledge for the introduction of trilingual education	Advanced training of teaching staff through language courses
3	Decrease in the level of employment	Conducting a graduate fair
4	Insufficient development of external and internal academic mobility of students and teaching staff	To activate the mobility of teaching staff and students, to develop an action plan for academic mobility
5	The risk of reducing the settlement of PPS in the PLO	Increasing the degree of settling down by defending doctoral dissertations
6	Insufficient provision of educational and methodological literature on professional disciplines in the state and English languages	To plan the annual release by scientists and teaching staff of scientific and educational literature in the state and English languages, according to the working curriculum of students
7	The traditional way of conducting classes	To improve and introduce into the educational process innovative technologies of teaching and providing educational services at the level of world standards
8	Outdated educational and laboratory facilities	Creation of modern educational, research and laboratory facilities on the basis of public-private partnership, purchase of modern laboratory equipment
9	Small academic groups of students in Russian	Formation of a contingent of students of this profile through career guidance and information and advertising work, creation of multilingual learning groups
10	To intensify work on improving the qualifications of teaching staff in research institutes and Universities abroad for the implementation of academic mobility;	Completion of advanced training courses in leading universities
11	To take an active part in competitions announced by the Ministries of the Republic of Kazakhstan and international organizations for grants of funded research works;	To intensify work among teaching staff to participate in competitions announced by the Ministries of the Republic of Kazakhstan and international organizations for grants of funded research works;

## 5. Action plan for the development of EP

№	Критерии	Ожидаемые результаты	Ед. изм.	2024-2028	2025-2026	2026-2027	2027-2028
<b>Direction 1. Educational and methodological support</b>							
1.1	Updating the educational program based on professional standards, taking into account the recommendations of employers	Conducting an examination of the Educational program «6B07202 - Food technology » in order to increase practice orientation and develop professional competencies of graduates	fact.	-	+	-	+
1.2	Monitoring and updating catalogs of elective disciplines in accordance with the development of key and professional competencies and labor market demands	Improving the quality of the content of educational programs by including elective courses aimed at developing key and professional competencies of graduates in accordance with the demands of the labor market	fact.	+	+	+	+
1.3	Introduction into the educational process of modern teaching technologies that contribute to the development of cognitive activity and communicative ability of students	Improving the quality of teaching academic disciplines, taking into account the novelty and variety of forms of work that contribute to the development of cognitive activity	fact.	+	+	+	+
1.3.1	Introduction into the educational process of massive open online courses (MOOC) according to the educational program «6B07202- Food technology »	Introduction of disciplines into the educational process Improving the quality of teaching academic disciplines, taking into account the novelty and variety of forms of work that contribute to the development of cognitive activity	unit	-	1	1	1

<b>1.4</b>	Involving social partners and employers in the development and examination of the implementation of educational programs	Improving the quality of implemented educational programs taking into account market demands and employer recommendations	unit	1	1	1	1
<b>1.5</b>	Development and implementation of elective courses in English	Introduction of disciplines in English into the educational process	unit	-	-	1	1
<b>1.6</b>	Conducting seminars and round tables on the use of innovative technologies in the educational process	Introduction of innovative technologies into the educational process	unit	1	1	2	2
<b>1.7</b>	Publication of educational, educational-methodological and scientific literature on implemented educational programs	Improving educational and methodological support in the disciplines of implemented educational programs	unit	1	2	2	2
<b>1.8</b>	Concluding agreements with foreign and domestic partner universities in order to develop academic exchange of students of all levels and teaching staff	Creation of a base of foreign and domestic universities - partners for the development of academic exchange of students of all levels and teaching staff	unit	-	1	1	1
<b>1.9</b>	Inviting students from partner universities to study for a semester, short-term internships, practice, etc.	Development of international recognition of educational programs, implementation of academic mobility programs for students	number of people	-	1	1	1
<b>1.10</b>	Participation of teaching staff and students in international academic exchange programs	Development of international cooperation with foreign universities implementing educational programs in the field of Biotechnology	number of people	1	1	1	1
<b>1.11</b>	Development of outgoing academic mobility of teaching staff and students in the direction «6B05102-Biotechnology»	Improving the educational program based on the experience of implementing similar programs in leading foreign universities	number of people	1	1	1	1

<b>Direction 2. Teaching staff</b>							
<b>2.1</b>	Increasing the professional level and training of scientific and pedagogical personnel for the implementation of educational programs once every 5 years	The share of teaching staff who have undergone advanced training at the republican and international level is at least 20%	number of people	2	2	2	2
<b>2.2</b>	Completion of advanced training, retraining, internship of teaching staff at the international level	Completion of at least 2 teachers in advanced training, retraining, and internship programs for teaching staff at the international level	number of people	1	1	1	1
<b>2.3</b>	Promotion of publications of teaching staff works in international publications indexed by the Web of Science and Scopus databases	Increasing the share of teaching staff who have published the results of scientific research in publications indexed by the Web of Science and Scopus databases - at least 30% of the total number of teaching staff	%	30	31	32	33
<b>2.4</b>	Involving specialists from the practical field of activity in teaching and scientific activities	Participation in the implementation of educational programs of practitioners (at least 20% of specialists)	%	20	20	21	21
<b>Direction 3. Internationalization of educational programs</b>							
<b>3.1</b>	Concluding agreements on international cooperation with foreign universities	Implementation of joint projects, preparation of scientific publications with foreign partners, creation of bases for scientific internships for students	unit	-	1	1	1
<b>3.2</b>	Attracting foreign students to study under the educational program «6B07202-Biotechnology»	Increase in the number of foreign students	number of people	-	-	1	1



<b>3.3</b>	Organization of joint scientific and practical events with international partners	Increasing the efficiency of scientific and scientific-methodological activities of teaching staff, exchange of experience with foreign partners	unit	1	1	1	1
<b>3.4</b>	Inviting foreign specialists to give lectures and provide consultations on master's projects and dissertations	Improving the content component of educational programs based on the introduction of the experience of foreign specialists in the implementation of educational programs	unit	-	1	1	1
<b>3.5</b>	Expanding cooperation with leading foreign scientific and educational organizations in order to attract the most qualified foreign specialists to the implementation of educational programs	Formation of key and professional competencies in accordance with the practice of leading universities	number of people	1	1	1	1
<b>Направление 4. Материально-техническое обеспечение и цифровизация</b>							
<b>4.1</b>	Stage-by-stage equipment of classrooms with technical teaching aids (projectors, panels, interactive and multimedia boards, multifunctional devices, webcam, projector screen, etc.)	Equipping classrooms assigned to the department with technical teaching aids (projectors, panels, interactive and multimedia boards, multifunctional devices, webcam, projector screen, etc.)	unit	<b>1</b>	1	1	1
<b>4.2</b>	Carrying out automation of the educational process (testing, session management, student movement, dean's office, department, teaching staff load, schedule, library, syllabuses)	Information management based on automation of the educational process (testing, session management, student movement, dean's office, department, teaching load, schedule, library, syllabuses)	fact.	+	+	+	+
<b>4.3</b>	Replenishment of the full-text database of scientific research results of teaching staff and students, teaching staff (articles, monographs, etc.)	Increasing the number of results of scientific works of scientists, research of teaching staff and students, teaching staff (articles, monographs, etc.)	unit	10	11	12	12

4.4	Expansion of the fund of scientific and educational literature, including on electronic media for ongoing educational programs	Ensuring the implementation of educational programs based on modern educational and information resources, including on electronic media	%	10	11	12	12
4.5	Monitoring the content and improvement of the faculty website	Formation of the faculty website on various aspects of the implementation of educational programs.	%	20	21	22	22

Head of the department           Kasymov           Kasymov S.K.

**REVIEWED**

at the meeting of the Commission on Academic Quality  
of the Research School of Food Engineering  
Protocol of the meeting No. 1 dated 06.06.2024

Chairman           Toleubekova           Toleubekova S.S

**AGREED**

Dean           Nurymkhan           Nurymkhan G.N.  
06.06.2024