NJSC SHAKARIM UNIVERSITY OF SEMEY

DEVELOPMENT PLAN
EDUCATIONAL PROGRAM

7M07103 - Technological machinery and equipment

Semey

NJSC "SHAKARIM UNIVERSITY OF SEMEY"

APPROVED

Member of the Board – Vice-Rector for Academic Affairs

_____ I. Oralkanova

"25" _____ 2023

EDUCATIONAL PROGRAM DEVELOPMENT PLAN

7M07103 – "Technological machines and equipment" (code and name of OP)

for 2023-2025

Semey 2023

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1. Passport of the Development Plan for the master's degree program Technological machines and equipment
(name of OP)

1	Basis for development	Shakarim University Strategic Plan for 2021-2025. Faculty work plan.
2	Implementation deadlines	202 3 -202 5 yy
3	Expected results of implementation	Formation of a qualified specialist and a "perfect personality" who has absorbed national values. Training competitive specialists to work in the field of technological machines and equipment for the food and meat and dairy industries, capable of quickly adapting to rapidly changing socio-economic conditions, as well as meeting the individual's needs for comprehensive professional and intellectual development

2. Analytical justification of the OP

2.1 Information about the educational program

The educational program is developed in accordance with the National Qualifications Framework and Occupational Standards, ***in accordance with*** the Dublin Descriptors and the European Qualifications Framework. The typical period for completing a master's degree program is 2 years.

EP "7M07103 – "Technological machines and equipment"" was developed by the Academic Committee

Considered at a meeting of the Quality Assurance Commission of the Faculty of Engineering and Technology (Minutes No. 3 No. 4/6 of 04/10/2023)

Approved at a meeting of the University Academic Council (Minutes No. 8 of 04/25/2023).

The educational program "Technological Machinery and Equipment" is aimed at training competitive specialists to work in the field of technological machines and equipment for the food and meat and dairy industries, capable of quickly adapting to rapidly changing socio-economic conditions, as well as meeting the individual's needs for comprehensive professional and intellectual development.

The training of bachelors in OP 6B07105 - "Technological machines and equipment", masters 7M07103 - "Technological machines and equipment" is carried out by the educational department "Technological equipment and mechanical engineering" of the Faculty of Engineering and Technology (ITF) on the basis of :

–Appendix to license No. KZ38LAA00018432, issued 2 5 .0 6 .20 20 ,

–Law of the Republic of Kazakhstan dated July 27, 2007 No. 319-III "On Education";

–State compulsory standards of higher and postgraduate education. Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 2 dated July 20, 2022; AP 042-1.01 -2021 Rev. No. 3 dated September 12, 2022

–Standard rules for admission to training in educational organizations implementing professional educational programs of higher education, approved by Decree of the Government of the Republic of Kazakhstan dated October 31, 2018 No. 600;

–State program for the development of education and science of the Republic of Kazakhstan for 2020 - 2025, approved by Decree of the Government of the Republic of Kazakhstan on December 27, 2019 No. 988.

The educational program is developed in accordance with the National Qualifications Framework and professional standards, aligned with the Dublin Descriptors and the European Qualifications Framework.

The EP "Technological machines and equipment" is implemented through curricula, a catalog of elective disciplines, a list of disciplines of the university component, syllabuses of disciplines, as well as methodological instructions for laboratory and practical classes.

2.2 Information about students

Currently, 6 students are studying in EP 7M07103 – "Technological machines and equipment" Master of Antes .

The management of the EP "Technological Machinery and Equipment" plans for the following 2 years of students:

Academic year / Basics of training	2023-2024 academic year	2024-2025 academic year
Grant	5	7
Agreement	1	0
Total	6	7

2.3 Internal and external conditions for the development of EP

The academic policy of the department "Technological Equipment and Mechanical Engineering", which implements the EP "Technological Machinery and Equipment", is aimed at the use of innovative teaching technologies based on the best practices of teaching modern general education, basic and major disciplines, on the quality of teaching using modern teaching strategies, modern methods teaching in higher education. Students and teaching staff of the Department of Technological Equipment and Mechanical Engineering have unlimited access to information and educational resources and electronic library systems necessary to carry out independent educational and research work. Information electronic resources: full access to databases - Scopus, ScienceDirect, Electronic library system "Polpred", Cyberleninka, Presidential Library. B.N. Yeltsin, as well as limited access to some electronic databases.

The educational and laboratory classrooms of the Department of Technological Equipment and Mechanical Engineering are equipped with modern equipment and comply with current sanitary standards, fire safety requirements, and qualification requirements for the activities of educational organizations. These classrooms are used both for conducting classes in the disciplines of the EP "Technological Machinery and Equipment" and for students' independent work, completing coursework and diploma projects. The EP "Technological machines and equipment" is sufficiently provided with basic teaching materials for the disciplines taught.

The auditoriums of the Department of Technological Equipment and Mechanical Engineering are connected to the WI - FI network for holding online conferences, lectures, seminars with the participation of leading scientists from Kazakhstan, near and far abroad. The Educational Resources Portal operates at Shakarim University in Semey (http:// ais .semgu.kz/), which contains lectures, videos, hyperlinks, assignments for self-testing, presentations on topics, tutorials and other educational content in the studied disciplines of the EP, the content of which the teaching staff applies in the classroom, and to which students have round-the-clock access. The most common innovative methods developed by teaching staff of departments for giving lectures, conducting practical and laboratory classes, defense and pre-defense of final works include: video lectures, presentation slides, working with an interactive whiteboard, using the graphic editor KOMPAS , AutoCAD .

All types of internships implemented within the framework of the EP are carried out in accordance with the end-to-end internship program approved by the Vice-Rector for Academic Affairs , the academic calendar, agreements with practice bases, as well as on the basis of P 042-1.10-2019 "Regulations on internships for master's students/PhD doctoral students" and order of the university rector. Practice bases are the bases of the university, the Scientific Center for Radioecological Research, T O O "K ondiz " , Semnan LLP, SF KazNIIPPP LLP, Alteev IP. Practice bases meet the requirements and content of practice.

2.4 Information about teaching staff implementing the educational program

The teaching staff of the department "Technological equipment and mechanical engineering", ensuring the implementation of the EP "Technological machines and equipment" is :

No.	Indicators	Unit.	2023-2024 academic year	2024-2025 academic year
1	Share of teaching staff with an academic degree in EP	%	**100**	**100**
2	Including the share of teaching staff with an academic degree in the OOD cycle	%	**100**	**100**

The Department of Technological Equipment and Mechanical Engineering carries out the educational process at three levels of study: bachelor's, master's and PhD doctoral studies. The formation of scientific and pedagogical personnel at the department is carried out through training through master's programs, PhD doctoral studies, and advanced training of teaching staff.

Currently in the educational program 7M07103 – "Technological machines and equipment" 6 master's students .

EP teachers undergo advanced training at leading universities in Kazakhstan (according to the FPK plan) and training seminars conducted by the Ministry of Education and Science of the Republic of Kazakhstan, universities and other organizations. Teacher training is confirmed by certificates and certificates. The university teaching staff undergo scientific internships at universities near and far abroad, at universities and research institutes of the Republic of Kazakhstan. The qualified staff of teachers is able to provide high-quality educational process, meets the qualification requirements, level and specifics of the educational program.

The teaching staff of the EP "Technological machines and equipment" takes part in competitions for grant financing, program-targeted financing of projects administered by the Ministry of Education and Science of the Republic of Kazakhstan, the Ministry of Agriculture of the Republic of Kazakhstan, and development institutions. The scientific direction of the department is associated with research in the field of improving technological machines and equipment, processes and apparatus of the food, meat and dairy and processing industries. The teaching staff of the department has high scientific and methodological publication activity. The results of the scientific activities of teachers are reflected in scientific publications with an impact factor. Scientists of the Department of Maintenance and Mechanics have the Hirsch index (h-index) in the WebofScience and Scopus databases.

2.5 Characteristics of the achievements of the EP

EP "Technological machines and equipment" in 20 2 1 successfully passed international specialized accreditation at the Independent Agency for Accreditation and Rating (IAAR) for a period of 5 years (certificate No. AB 3267 dated 1 6 April 20 2 1).

3. Main objectives of the EP development plan

In accordance with the Strategic Development Plan of the University for the effective implementation of the EP "Technological Machinery and Equipment" the following tasks have been identified

- Ensuring high-quality training of competitive specialists
- Development and implementation of scientific projects
- Development of human resources
- Strengthening the material and technical base
- Development of international cooperation

The expected final results include: participation in funded grant projects, publication activity of teaching staff in rating publications with a non-zero impact factor, development and operation of joint educational programs with foreign universities, implementation of scientific research results in the educational process, involvement of students in scientific research, academic mobility students and teaching staff

4. Risk analysis of OP

Identification and assessment of risks of the EP "Technological Machinery and Equipment" is carried out in accordance with the Strategic Development Plan of the University until 2025. The mechanism for monitoring possible risks of the EP "Technological Machinery and Equipment" is surveys and questioning of students on satisfaction with the organization of the educational process, quality of teaching, material and technical base . In order to assess the quality of the implemented EP, meetings are held with specialists, graduates of previous years, and students. Employers' questionnaires are systematically monitored to assess the quality of specialist training. The results of the survey and monitoring of EP risks are analyzed and used in the future when updating educational programs.

No.	Name of risks	Corrective measures
1	Decrease in the number of EP students	Strengthen career guidance work

2	Insufficient level of language knowledge to introduce trilingual education	Foreign language courses
3	Decline in employment	Attracting employers , graduate fair
4	Insufficient development of external and internal academic mobility of students and teaching staff	Identification of universities for academic mobility and conclusion of agreements
5	The risk of reducing the degree of teaching staff in the EP	-

5. Action plan for the development of EP

No.	Criteria	Expected results	Unit change	2022-2023		2023-2024	
				plan	Actual Execution	plan	Actual Execution
Direction 1. Educational and methodological support							
1.1	Updating the educational program based on professional standards , taking into account the recommendations of employers	Conducting an examination of the Educational program " Technological machines and equipment" 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**	
1.3.1	Introduction into the educational process of massive open online courses (MOOCs) according to the educational program " Technological machines and equipment "	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.	units _	-		-	
1.4 _	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	units _	**1**		**1**	
1.5 _	Development and implementation of elective courses in English	Introduction of disciplines in English into the educational process	units _	-		-	

1.6 _	Conducting seminars and round tables on the use of innovative technologies in the educational process	Introduction of innovative technologies into the educational process	units _	-		**1**	
1.7 _	Publication of educational, educational , methodological and scientific literature on implemented educational programs	Improving educational and methodological support in the disciplines of implemented educational programs	units _	**1**		**1**	
1.8	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	units _	-		-	
1.9	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	people	-		-	
1.10	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 " Technological machines and equipment "	people	-		-	
1.11	Development of outgoing academic mobility of teaching staff and students in the field of " Technological machines and equipment "	Improving the educational program based on the experience of implementing similar programs in leading universities of the Republic of Kazakhstan	people	-		-	
Direction 2. Faculty							
2.1	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 level is at least 20%	people	**1**		**1**	

2.2	Completion of advanced training, retraining, internship of teaching staff at the international level	Walkthrough at least 2 teachers advanced training, retraining, internship programs for teaching staff at the international level	people	-		**2**	
2.3	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 %**		**3 0 %**	
2.4	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 %**		**2 0 %**	
Direction 3. Internationalization of educational programs							
3.1	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	units _	-		-	
3.2	Attracting foreign students to study under the educational program " Technological machines and equipment "	Increase in the number of foreign students	people	-		-	
3.3	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	units _	-		-	

3.4	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	units _	**1**		-	
3.5	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	people	-		**1**	
Direction 4. Logistics and digitalization							
4.1	Phased equipping 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.)	units _	**1**		**1**	
4.2	Carrying out automation of the educational process (testing, session management, student movement, dean's office, department, teaching 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 .	+		+	
4.3	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.)	units _	**3**		**4**	
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 %**		**10 %**	

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 %**		**20 %**	

Head of the department _____ **Zhumadilova G**

REVIEWED
at a meeting of the Quality Assurance Commission
Faculty of Engineering and Technology
Protocol No.5 from "25" 05. 2023
Chairman of the QAC _____ Abdilova G.

AGREED

Dean of the Faculty _____ Nurymkhan G.
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