Non-commercial joint-stock company
«Kazakh National Agrarian Research University»

AGREED
Deputy Chairman of the Board LTD
«SPC of Agricutural Enginering»
_____ D. Karmanov
«__» _____ 2024 y.

AGREED
Director of LTD «AuylTech»
_____ A. Adilsheyev
«__» _____ 2024 y.

APPROVED
Chairman of the Board –
Rector
_____ A.Kurishbaev
«__» _____ 2024 y.

EDUCATIONAL PROGRAM

«6B08701 – Agricultural Machinery and Technology»

Awarded degree: Bachelor of Agriculture under the educational programme
«6B08701 – Agricultural Machinery and Technology »

ALMATY 2024

Approved at the meeting of the Department «Agricultural machinery and mechanical engineering»
Protocol № 6 , « 12 » 01 2024

Head of the department _____ Zh. Zhumagulov

Considered at meetings Academic committee of the Faculty of «Engineering - technical»
Protocol № 6 , « 26 » 01 2024

Chairman of the AC of the faculty _____ U. Ibishev

Reviewed by the Educational Methodological Council of the University and recommended to the Academic Council
Protocol № 4 , « 01 » 02 2024

Chairman of the EMS of the University _____ A. Abdyrov

The educational program was approved at the meeting of the Academic Council of KazNARU
Protocol № 9 , « 01 » 03 2024

Developers:

Dean of the Faculty		L. Aldibaeva
Head of department		Zh. Zhumagulov
Associate Professor		Kalym Kabdyrakhim
Student		S. Sariyev
Graduate of 2023		A. Yerzhan

Employers:

Deputy Chairman of the Board LTD «SPC of Agricutural Enginering»		D. Karmanov
Director of LTD «AuylTech»		A. Adilsheyev

Agreed:

Head of the Educational Program Design Office		Zh. Kussainova

Scope of application

It is intended for the implementation of bachelor's training in the educational program «6B08701–Agricultural machinery and technology» in the NAO «Kazakh national agrarian research university».

Normative documents

«On Education» The Law of the Republic of Kazakhstan dated 27 July, 2007 No. 319-III;

Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 №2;

Classifier of training programs for personnel with higher and post-graduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan of October 13, 2018 No. 569;

Standard Rules for the activities of educational organizations implementing educational programs of higher and (or) postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan of October 30, 2018 No. 595;

Rules of the organization of the educational process on credit technology of training. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 12, 2018 No. 563;

Algorithm of inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan No. 665 dated December 4, 2018;

Professional standard. Appendix No. 72 to the order of the Deputy Chairman of the Board of the National chamber of entrepreneurs of the Republic of Kazakhstan "Atameken" dated 11.12.2018 No. 339

Appendix No. 15 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 26.12.2019 No. 263

1. Passport of the educational program

Code and classification of the field of education	6B08 Agriculture and bioresources
Code and classification of training areas	6B087 Land Management
Code and name of the educational program	6B08701 – Agricultural machinery and technology
Type of educational program	Functioning
The aim of the educational program	Training of specialists in the field of organization and management of production and technical operation of tractors, machinery and equipment in the agricultural sector, using innovative technologies and technical means.
ISCED level	6
NQR level	6
SQF level	6
Application number to the license on the direction of staff training	KZ89LAA00031870 05 August 2021 №004
Accreditation of the EP Name of the accreditation agency Validity of accreditation	Certificate №2020 KE 0277 KAZSEE 23.12.2020-22.12.2025y.
Awarded academic degree	Bachelor of Agriculture in the educational program «6B08701 - Agricultural machinery and technology»
Learning outcomes	Table 2
List of qualifications and positions	- head of the machine yard in all types of agricultural units; - Head of the mechanical repair shop in all types of agricultural units, auto-transport enterprises and technical service stations; - Engineer for fuel and lubricants in all types of agricultural enterprises, road transport enterprises and technical service enterprises; - engineer on mechanization of labor-intensive processes in all types of agricultural formations; - engineer for machine and tractor fleet operation in all types of agricultural units and technical service enterprises; - teacher in agricultural educational institutions; - Researcher in research and design organizations in the direction of agricultural machinery and technology.
Field of professional activity	- organization of production and technical operation of the machine-tractor fleet; - organization of repair, maintenance and storage of machine and tractor fleet; - development of a plan and schedule for machine use, action plans to improve the operation of machines; - organization of the management of the supply of petrochemical and tractor fleet; - organization of work on the introduction and maintenance of means of mechanization and automation on animal-water farms and complexes; - design of machines, equipment and their complexes, mechanized technologies in plant growing and animal husbandry; - The organization of logistics and postavki new agri-

	cultural equipment.
Sphere and object of professional activity	- agricultural formations of all types (Farmers, farms and their cooperatives); - machine-technology stations (MTS); - social business complexes (SEC); - processing and supplying enterprises and plants; - design and engineering organizations, - organization of technical operation and service of transport and technological machines; - dealer centers; - car parks; - district, regional and republican bodies of agriculture management; - educational institutions of technical and vocational education (colleges, universities); - research organizations (RO).
Functions of professional activity	- organization of mechanized production of agricultural products competitive in the domestic and foreign markets; - development and implementation of an operating technology for organizing the use of a machine-tractor fleet, ensuring efficient production and technical operation of agricultural equipment; - ensuring the introduction of resource and energy saving machines and technologies, equipment and their complexes; - implementation of technological processes of enterprises for the processing of crop and livestock products; - development of machines, equipment and their complexes, mechanized technologies in plant growing and animal husbandry and the study of their quality and energy indicators, production and economic assessments. - monitoring the safety rules and regulations of environmental protection.
Types of professional activity	1. Estimated: - an estimate of the cost of engineering and technical support for the production, storage and processing of agricultural products; - to collect and analyze materials to assess the effectiveness of the functioning of agri-formations. 2. Constructive: - calculation and design of working bodies and machine units, drawing up flow charts for the production, storage and processing of agricultural products, as well as maintenance of machinery and equipment; - research work on the assessment of quality, energy and economic indicators of the developed units, machines and complexes. 3. Information technology:

	- production and processing of crop products, livestock, the choice of machines and their complexes, the organization of highly efficient use of agricultural equipment, technological equipment in the production, processing and storage; - operation and maintenance of modern technology, the implementation of input quality control of raw materials, production control of processed products and process parameters; - installation, adjustment of machines and equipment that are directly in contact with living biological objects, maintaining their operation modes and set parameters of electrified technological processes; - operation and disposal of agricultural waste and processing enterprises; - organization of production, storage, transportation and processing of agricultural products based on resource-saving machine technologies; - ensuring high performance of machines, mechanisms and process equipment; - organization of the work of the team of performers, making sound management decisions in the light of the requirements of life safety and environmental protection.
To be competent	- to own native and foreign languages, knowledge in the field of communication technology, communication strategies, skills and skills of constructive dialogue; - demonstrate fundamental knowledge in matematic, natural science and technical disciplines that contribute to the formation of a highly educated personality with a broad outlook and culture of thinking; - be able to apply and use information technologies (digital) in professional activities as a user, own primary programming skills using modern tools; - apply knowledge and understanding at the professional level of agricultural production technology, ensuring the introduction of resource- and energy-saving machines, technologies, equipment, complexes and digitalization; - in monitoring the safety rules and regulations of environmental protection, the organizer of production of agricultural products that are competitive on the domestic and foreign markets; - in the development of projects in the field of professional activity; - in the design of technological processes of enterprises for processing of plant-growing and livestock products; - in organizing the activities of various agricultural entities (farmer and peasant households, firms, enterprises), machine-technological stations, socio-entrepreneurial complexes, processing and supplying

	enterprises and factories, design and engineering organizations, technical operation and hanging transport-technological machines, car parks, as well as the functioning of district, regional and republican bodies of agriculture management.

2. Learning outcomes by discipline

Codes	**Learning outcomes**
LO 1	Demonstrate knowledge and understanding in the basic foundations in the field of natural science disciplines that contribute to the formation of a highly educated person with a broad outlook and a culture of thinking.
LO 2	Understand the meaning and principles of the valuation of the main production resources and the application of elements of economic analysis in practice; the basics of economic knowledge in various fields of professional activity in a market economy
LO 3	To collect and interpret information about technologies and methods of performing work in agriculture, the main cultivated plants and breeds of farm animals and methods of their breeding and maintenance.
LO 4	Apply theoretical and practical knowledge to solve typical problems, using the basic laws of natural science disciplines in professional activity; search, store, process and analyze information from various sources and databases using information, computer and network technologies.
LO 5	Solve problems using images obtained by the method of parallel projection; apply the rules of the unified system of design documentation, as well as read, execute and detail general-view drawings using computer programs.
LO 6	Calculate the simplest DC and AC circuits, as well as the characteristic operating modes of three-phase electrical circuits; heat exchangers and thermal installations
LO 7	Have training skills in the selection of structural materials and methods of their processing in the use of tools and measurement techniques; on the justification of optimal parameters and operating modes of working bodies, mechanisms of agricultural machinery and equipment; management and effective use of tractors, cars and agricultural machinery in production conditions; performing adjustments and adjustments of their components and mechanisms for high-performance, high-quality and safe performance of work.
LO 8	Be able to perform operations on the management of agrotechnological machines of animal husbandry, tuning to the specified conditions of their optimal functioning; possess the practical application of the theory and calculations of optimal parameters of technological processes and working bodies of machines and equipment.
LO 9	Know the methods of scientific research and apply them in the development of operational technology of mechanized work, the design of mechanized production lines; in the organization of effective production and technical operation of machines and aggregates; effective technologies for maintenance, repair of machines and equipment with the restoration of their worn parts
LO 10	Understand the meaning and principles of the valuation of the main production resources and the application of elements of economic analysis in practice; the basics of economic and legal knowledge in various fields of professional activity in a market economy
LO 11	Be able to use systems of categories and methods necessary to solve typical tasks in the field of labor psychology; scientific foundations of professional and pedagogical activity; knowledge, skills and abilities on new pedagogical technologies of training and education; forms and methods of organizing the educational process in the disciplines of

	agricultural machinery, tractors and automobiles and repair and maintenance of machinery.
LO 12	Possess theoretical and practical knowledge and acquire skills in the field of designing livestock enterprises and industry facilities for the development of competitive animal husbandry, reconstruction of existing and construction of new farms and complexes

3. Content of the educational program «6B08701 - Agricultural machinery and technology»

Module code	Module name	Discipline cycle	Discipline component	Code of subject	Subject name	Academic credits	Academic study period	Control in the academ-ic period			Number of hours								Distribution of credits per academic period							
												Classroom work					IWS		1 course		2 course		3 course		4 course	
																			1	2	3	4	5	6	7	8
																			Number of weeks in the academic period							
								Экзамены	Дифференциалды сынақ	Курстық жұмыс/жоба	Total	Lectures	Laboratory trainings	Practice	Studio lessons	Practice	IWSF	IWS	15	15	15	15	15	15	15	15
Жалпы модульдер/Общие модули/General modules																										
1	Гуманитарлық және тілдік модулі/ Гуманитарный и языковой модуль/ Humanities and Language module	ЖБП/ ООД/ GER	МК/ ОК/ CS	ShT/ IYa/ FL 1102	Шетел тілі/ Иностранный язык/ Foreign language	5	1	1			5/150			45			30	75	5.0							
2		ЖБП/ ООД/ GER	МК/ ОК/ CS	KOT/ KRYa/ KRL 1103	Қазақ (Орыс) тілі / Казахский (Русский) язык/ Kazakh (Russian) language	5	1	1			5/150			45			30	75	5.0							
3		ЖБП/ ООД/ GER	МК/ ОК/ CS	KT/ IK/ HK 1101	Қазақстан тарихы (МЕ)/ История Казахстана (ГЭ)/ History of Kazakhstan	5	1	1			5/150	15		30			30	75	5.0							
4		ЖБП/ ООД/ GER	МК/ ОК/ CS	KOT/ KRYa/ KRL 1106	Қазақ (Орыс) тілі / Казахский (Русский) язык/ Kazakh (Russian) language	5	2	2			5/150			45			30	75		5.0						
5		ЖБП/ ООД/ GER	МК/ ОК/ CS	ShT / IYa/ FL 1105	Шетел тілі/ Иностранный язык/ Foreign language	5	2	2			5/150			45			30	75		5.0						
6		ЖБП/ ООД/ GER	МК/ ОК/ CS	Fil/ Phil 2109	Философия/ Philosophy	5	3	3			5/150	15		30			30	75			5.0					
7	Әлеуметтік-саясаттану білім және салауатты өмір салты модулі/ Модуль социально-политических знаний и здоровый образ жизни/ Module of Socio-political	ЖБП/ ООД/ GER	МК/ ОК/ CS	DSh / FK/ PT 1104	Дене шынықтыру/ Физическая культура/ Physical Training	2	1	1			2/60			30			30		2.0							
8		ЖБП/ ООД/ GER	МК/ ОК/ CS	ASBMASMP / MSPZSPKP/ MSPK SPSCSP 1107	Әлеуметтік-саясаттану білім модулі (әлеуметтану, саясаттану, мәдениеттану, психология)/ Модуль социально-политических знаний (социология, политология, культурология, психология)/ Module of socio-political knowledge (sociology, political science, cultural studies,	8	2	2			8/240	30		45			60	105		8.0						

	knowledge and healthy lifestyle				psychology)																					
9		ЖБП/ ООД/ GER	МК/ ОК/ CS	DSh / FK/ PT 1108	Дене шынықтыру/ Физическая культура/ Physical Training	2	2	2			2/60			30			30			2.0						
10		ЖБП/ ООД/ GER	МК/ ОК/ CS	DSh/ FK/ PT 2111	Дене шынықтыру/ Физическая культура/ Physical Training	2	3	3			2/60			30			30				2.0					
11		ЖБП/ ООД/ GER	МК/ ОК/ CS	DSh / FK/ PT 2112	Дене шынықтыру/ Физическая культура/ Physical Training	2	4	4			2/60			30			30					2.0				
12	Кәсіби және коммуникативті модулі/ Профессиональный и коммуникативный модуль/ Professional and communication module	ЖБП/ ООД/ GER	ТК/ КВ/ ES	TAK / BZh/ LS 1113	Тіршілік әрекетінің қауіпсіздігі/ Безопасность жизнедеятельности/ Life safety	5	1	1			5/150	15		30			30	75	5.0							
13		ЖБП/ ООД/ GER	ТК/ КВ/ ES	Ecol/ Eko 1114	Экология/ Ecology	5	1	1			5/150															
14		ЖБП/ ООД/ GER	ТК/ КВ/ ES	Eko/ Eco1115	Экономика/ Economy	5	1	1			5/150															
15		ЖБП/ ООД/ GER	ТК/ КВ/ ES	Kas / Pre / Ent 1116	Кәсіпкерлік/ Предпринимательство/ Entrepreneurship	5	1	1			5/150															
16		ЖБП/ ООД/ GER	ТК/ КВ/ ES	KSZhKM/ PAK/ LAC 1117	Құқық және сыбайлас жемқорлыққа қарсы мәдениет/ Право и антикоррупционная культура/ Law and anti-corruption culture	5	1	1			5/150															
17		ЖБП/ ООД/ GER	ТК/ КВ/ ES	GZN / ONI/ FOSR 1118	Ғылыми зерттеулердің негіздері / Основы научных исследований/ Fundamentals of scientific research	5	1	1			5/150															
18		ЖБП/ ООД/ GER	МК/ ОК/ CS	АКТ/ IKT/ ICT 2110	Ақпараттық-коммуникациялық технологиялар/ Информационно-коммуникационные технологии / Information and Communication Technologies	5	3	3			5/150	15		30			30	75			5.0					
Мамандық/білім беру бағдарламасы модульдері/ Модули специальности/образовательной программы/ Modules of specialty/education programm																									
19	Модуль 1. Жаратылыстану ғылымдары және графика негіздері/ Естественные науки и основы графики/ Natural sciences and fundamentals of graphics	БП/ БД/ BS	ЖК/ ВК/ UC	M 1201	Математика 1/ Mathematics 1	5	1	1			5/150	15		30			30	75	5.0							
20		БП/ БД/ BS	ЖК/ ВК/ UC	SGIG/ NGIG/ DGAEG 1202	Материалтану және конструкциялық материалдар технологиясы / Начертательная геометрия и инженерная графика/ Descriptive Geometry and Engineering Graphics	5	1	1			5/150	15		30			30	75	5.0							
21		БП/ БД/	ЖК/ ВК/	M 1203	Математика 2/ Mathematics 2	5	2	2			5/150	15		30			30	75		5.0						

		BS	UC																							
22		БП/ БД/ BS	ЖК/ ВК/ UC	Fiz/ Phy 2206	Физика/ Physics	6	3	3			6/180	15	30.0	15			30	90			6.0					
23		БП/ БД/ BS	ТК/ КВ/ ES	KG/ CG 2211	Компьютерлік графика / Компьютерная графика/ Computer graphics	6	4	4			6/180	15	30.0	15			30	90				6.0					
24		БП/ БД/ BS		UOG/ TG/ DG 2211	Үш өлшемді графика / Трехмерная графика/ 3D graphics			4			6/180															
25	Модуль 3. Материалтану және өзара ауыстырымдылық негіздері/ Материаловедение и основы взаимозаменяемости/ Materials science and basics of interchangeability	БП/ БД/ BS	ЖК/ ВК/ UC	MKMT/ MTKM/ MSATOSM 1204	Материалтану және конструкциялық материалдар технологиясы/ Материаловедение и технология конструкционных материалов/ Materials science and technology of structural materials	5	2	2			5/150	15	15.0	15			30	75		5.0							
26		БП/ БД/ BS	ЖК/ ВК/ UC	OP/ UP/ TP 1205	Оқу практикасы / Учебная практика/ Training practice	2	2				2/60					20		40		2.0						
27		БП/ БД/ BS	ТК/ КВ/ ES	OASTO/ VSTI/ ISATM 2210	Өзара ауыстырымдылық, стандарттау және техникалық өлшемдер / Взаимозаменяемость, стандартизация и технические измерения/ Interchangeability, standardization and technical measurements	6	3	3			6/180	15	30.0	15			30	90			6.0						
28		БП/ БД/ BS		OAN/ OV/ BOI 2210	Өзара ауыстырымдылық негіздері/ Основы взаимозаменяемости/ Basics of interchangeability			3			6/0															
29		БП/ БД/ BS	ЖК/ ВК/ UC	OP/ PP 2224	Өндірістік практика / Производственная практика/ Production practice	5	4				5/150					50		100				5.0				
30	Модуль 2. Ауылшаруашылық негіздері және экономика/ Основы сельского хозяйства и экономики/ Fundamentals of agriculture and economics	БП/ БД/ BS	ТК/ КВ/ ES	OSHN/ OR/ FOCP 2209	Өсімдік шаруашылығы негіздері/ Основы растениеводства/ Fundamentals of crop production	6	3	3			6/180	15		45			30	90			6.0						
31		БП/ БД/ BS		Top/ Poch/ SS 2209	Топырақтану/ Почвоведение/ Soil science			3			6/180															
32		БП/ БД/ BS	ТК/ КВ/ ES	MSHOOT / TPPZh/ TOPOLP 2212	Мал шаруашылығы өнімдерін өндіру технологиясы/ Технология производства продукции животноводства/ Technology of production of livestock products	5	4	4			5/150	15		30			30	75				5.0					
33		БП/ БД/ BS		MSHN / OZh/ FOAH 2212	Мал шаруашылығы негіздері/ Основы животноводства/ Fundamentals of animal husbandry			4			5/150															

34		БП/ БД/ BS	ТК/ КВ/ ES	ETS / EAS/ EAAS 4217	Экономикалық талдау және статистика/ Экономический анализ и статистика/ Economic Analysis and Statistics	5	7	7			5/150	15		30			30	75							5.0	
35		БП/ БД/ BS		AU / OA/ AO 4218	Агробизнесті ұйымдастыру / Организация агробизнеса/ Agribusiness organization			7			5/150														
36	Модуль 4. Теориялық және қолданбалы механика / Теоретическая и прикладная механика/ Theoretical and applied mechanics	БП/ БД/ BS	ЖК/ ВК/ UC	ТМ 2207	Теориялық механика / Теоретическая механика/ Theoretical mechanics	6	4	4			6/180	15	30.0	15			30	90				6.0				
37		БП/ БД/ BS	ЖК/ ВК/ UC	ММТ / ТММ/ TOMAM 3220	Механизмдер мен машиналар теориясы/ Теория механизмов и машин/ Theory of mechanisms and machines	5	5	5			5/150	15	15.0	15			30	75					5.0			
38		БП/ БД/ BS	ЖК/ ВК/ UC	МК / SM/ SOM 3219	Материалдар кедергісі/ Сопротивление материалов/ Strength of materials	5	5	5			5/150	15	15.0	15			30	75					5.0			
39		БП/ БД/ BS	ЖК/ ВК/ UC	MBKN/ DMOK/ MPADB 3223	Машина бөлшектері және конструкциялау негіздері/ Детали машин и основы конструирования/ Machine parts and design basics	5	6	6			5/150	15	15.0	15			30	75						5.0		
40	Модуль 6. Технологиялық машиналар мен жабдықтар / Технологические машины и оборудование/ Technological machines and equipment	БП/ БД/ BS	ЖК/ ВК/ UC	АМК / SMU/ AMD 3221	Ауылшаруашылық машиналары (құрылысы)/ Сельскохозяйственные машины (устройство)/ Agricultural machines (device)	5	5	5			5/150	15	15.0	15			30	75					5.0			
41		БП/ БД/ BS	ЖК/ ВК/ UC	АМТ/ SMT/ AMT 3222	Ауылшаруашылық машиналары (теория) / Сельскохозяйственные машины (теория)/ Agricultural machinery (theory)	5	6	6			5/150	15	15.0	15			30	75						5.0		
42		БП/ БД/ BS	ТК/ КВ/ ES	КТМ / РТМ/ LATV 3215	Көтеру-тасымалдау машиналары/ Подъемно-транспортные машины/ Lifting and transport vehicles	5	6	6			5/150	15	15.0	15			30	75						5.0		
43		БП/ БД/ BS		GG/ HPDAHPA 3215	Гидропневможетек және гидропневмоавтоматика/ Гидропневмопривод и гидропневмоавтоматика/ Hydraulic pneumatic drive and hydraulic pneumatic automation			6			5/150															
44		БеП/ ПД/ AS	ЖК/ ВК/ UC	MSHM/ MZh/ MOAH 3306	Мал шаруашылығын механикаландыру / Механизация животноводства/	5	6	6			5/150	15	15.0	15			30	75						5.0		

					Mechanization of animal husbandry																					
45		БеП/ ПД/ AS	ЖК/ ВК/ UC	ОР/ РР 3307	Өндірістік практика / Производственная практика/ Production practice	5	6				5/150					50		100						5.0		
46	Модуль 5. АӨК-нің цифрландыру мен электр және жылу техникасы/ Цифравизация и электро-и теплотехника в АПК/ Digitalization and electrical and thermal engineering in the AIC	БП/ БД/ BS	ТК/ КВ/ ES	AGEEZh/ EEA/ ETAEEITAI C 3213	АӨК-гі электротехнология және электр жабдықтары / Электротехнологии и электрооборудование в АПК/ Electrical technologies and electrical equipment in the agro-industrial complex	5	5	5			5/150	15	15.0	15			30	75					5.0			
47		БП/ БД/ BS		ASHET / ESH/ EIA 3213	Ауыл шаруашылығындағы электрлік технологиялар / Электротехнологии в сельском хозяйстве/ Electrotechnology in agriculture			5			5/150															
48		БП/ БД/ BS	ТК/ КВ/ ES	SGM / MZhG/ FAGM 3214	Сұйық және газ механикасы / Механика жидкости и газа/ Fluid and gas mechanics	5	5	5			5/150	15	15.0	15			30	75					5.0			
49		БП/ БД/ BS		GZhTN/ OGT/ FOHAHE 3214	Гидравлика және жылу техникасы негіздері / Основы гидравлики и теплотехники/ Fundamentals of hydraulics and heat engineering			5			5/150															
50		БП/ БД/ BS	ТК/ КВ/ ES	ACT / CTA/ DTIA 3216	Агроинженериядағы цифрлық технологиялар/ Цифровые технологии в агроинженерии/ Digital technologies in agroengineering	5	6	6			5/150	15		30			30	75					5.0			
51		БП/ БД/ BS		NASH / TSH/ PA 3216	Нақты ауыл шаруашылығы / Точное сельское хозяйство/ Precision Agriculture			6			5/150															
52	Модуль 8. Автотракторлық техника, машиналарды пайдалану және жөндеу / Автотракторная техника, эксплуатация и ремонт машин/ Automotive equipment, operation and repair of	БеП/ ПД/ AS	ЖК/ ВК/ UC	TAK / OUTA/ TGAOTAC 2304	Тракторлар мен автомобильдер құрылысы/ Общее устройство тракторов и автомобили/ The general arrangement of tractors and cars	6	4	4			6/180	15	30.0	15			30	90				6.0					
53		БеП/ ПД/ AS	ЖК/ ВК/ UC	TAT/ TTA/ TOTAA 3305	Тракторлар мен автомобильдер теориясы/ Теория тракторов и автомобилей/ Theory of tractors and automobiles	5	5	5			5/150	15	15.0	15			30	75					5.0			
54		БеП/ ПД/ AS	ЖК/ ВК/ UC	MTPP/ EMTP/ OOTMATF 4308	Машина-трактор паркін пайдалану I / Эксплуатация машино-тракторного парка I/	5	7	7			5/150	15	15.0	15			30	75						5.0		

	machines				Operation of the machine and tractor fleet I																					
55		БеП/ ПД/ AS	ЖК/ ВК/ UC	ЕК/ ОТ/ LP 4319	Еңбекті қорғау/ Охрана труда/ Labor protection	5	7	7			5/150	15		30			30	75							5.0	
56		БеП/ ПД/ AS	ЖК/ ВК/ UC	MTPPI / EMTPI/ OOTMATFI 4320	Машина-трактор паркін пайдалану II / Эксплуатация машино-тракторного парка II/ Operation of the machine and tractor fleet II	5	8	8			5/150	15	15.0	15			30	75								5.0
57		БеП/ ПД/ AS	ЖК/ ВК/ UC	MZhS/ NRM/ RAROM 4321	Машина жөндеу және сенімділік / Надежность и ремонт машин/ Reliability and repair of machines	6	8	8			6/180	15	30.0	15			30	90								6.0
58		БеП/ ПД/ AS	ЖК/ ВК/ UC	КР/ PP 4322	Кәсіби практика Профессиональная практика Professional practice	5	8				5/150					50		100								5.0
59	Модуль 7. Өңдеуге және сақтауға арналған машиналар мен кәсіпорын-дарды жобалау / Машины для переработки и хранения и проектирование предприятий/ Processing and storage machines and enterprise design	БеП/ ПД/ AS	ТК/ КВ/ ES	OSHODSM / MZHRP/ MOHASOCP 4301	Өсімдік шаруашылығы өнімдерін дайындау мен сақтауды механикаландыру / Механизация заготовки и хранения растениеводческой продукции/ Mechanization of harvesting and storage of crop products	5	7	7			5/0													5.0	
60		БеП/ ПД/ AS		OSHOAOSA MZh/ MODPPHPR/ MAEFTPPA SOCP 4301	Өсімдік шаруашылығы өнімдерін алғашқы өңдеуге және сақтауға арналған машиналар мен жабдықтар / Машины и оборудование для первичной переработки и хранения продукции растениеводства/ Machinery and equipment for the primary processing and storage of crop products			7			5/150														
61		БеП/ ПД/ AS	ТК/ КВ/ ES	ABT/ TAU / TTOAC 4303	Автоматты басқару теориясы / Теория автоматического управления/ The theory of automatic control	5	7	7			5/150	15		30			30	75							5.0	
62		БеП/ ПД/ AS		ASHOTPA / ATPSP/ AOTPOAP 4303	Ауыл шаруашылығы өндірісінің технологиялық процестерін автоматтандыру / Автоматизация технологических процессов сельскохозяйственного производства/ Automation of technological pro-			7			5/150														

					cesses of agricultural production																						
63		БеП/ ПД/ AS	ТК/ КВ/ ES	MSHODS/ MZHZhP/ MOHASOLP 4302	Мал шаруашылығы өнімдерін дайындау мен сақтауды механикаландыру / Механизация заготовки и хранения животноводческой продукции/ Mechanization of harvesting and storage of livestock product	5	7	7			5/150	15	15.0	15			30	75							5.0	
64		БеП/ ПД/ AS		MSHOAOSAMZh/ MODPPHPZh/ MAEFPPASOLP 4302	Мал шаруашылығы өнімдерін алғашқы өңдеуге және сақтауға арналған машиналар мен жабдықтар / Машины и оборудование для первичной переработки и хранения продукции животноводства/ Machinery and equipment for primary processing and storage of livestock products			7			5/150														
65		БеП/ ПД/ AS	ТК/ КВ/ ES	AZhN / OPA/ FOAPD 4323	Агроөндірістерді жобалау негіздері/ Основы проектирование агропроизводство/ Fundamentals of agricultural production design	6	8	8			6/180	15	30.0	15			30	90								6.0
66		БеП/ ПД/ AS		MSHKZh / PZhP/ DOLE 4323	Мал шаруашылығы кәсіпорындарын жобалау/ Проектирование животноводческих предприятий/ Design of livestock enterprises			8			6/180														
Қосымша модульдер/Дополнительные модули, выходящие за рамки квалификации/Additional modules beyond qualification																											
Таңдау бойынша модульдер/Модули по выбору/Modules of choice																											
Орташа апталық жүктеменің сағат саны/ Средняя недельная нагрузка в часах/ Weekly average workload at hours																		0	0	0	0	0	0	0	0		
1	**Орта білім беру пәндері(ЖБП)/ Общеобразовательные дисциплины(ООД)/ General education subjects(GER)**					**56**		**13**	**0**	**0**	**1680**	**90**	**0**	**465**	**0**	**0**	**420**	**705**	**22**	**20**	**12**	**2**	**0**	**0**	**0**	**0**		
	Міндетті компонент(ЖБП/МК)/ Обязательный компонент(ООД/ОК)/ Core subjects(GER/CS)					51		12	0	0	1530	75	0	435	0	0	390	630	17	20	12	2	0	0	0	0		
	ЖОО компоненті(ЖБП/ЖК)/ Вузовский компонент(ООД/ВК)/ University component(GER/UC)					0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Таңдау бойынша компонент(ЖБП/ТК)/ Компонент по выбору(ООД/КВ)/ Electives(GER/ES					5		1	0	0	150	15	0	30	0	0	30	75	5	0	0	0	0	0	0	0		

2	**Базалық пәндер(БП)/ Базовые дисциплины(БД)/ Base requirements(BS)**	**112**		**20**	**0**	**0**	**3360**	**300**	**255**	**420**	**0**	**70**	**600**	**1715**	**10**	**12**	**18**	**22**	**25**	**20**	**5**	**0**
	Міндетті компонент(БП/МК)/ Обязательный компонент(БД/ОК)/ Core subjects(BS/CS)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ЖОО компоненті(БП/ЖК)/ Вузовский компонент(БД/ВК)/ University component(BS/UC)	64		11	0	0	1920	165	150	210	0	70	330	995	10	12	6	11	15	10	0	0
	Таңдау бойынша компонент(БП/ТК)/ Компонент по выбору(БД/КВ)/ Electives(BS/ES)	48		9	0	0	1440	135	105	210	0	0	270	720	0	0	12	11	10	10	5	0
3	**Профильді пәндер(БеП)/ Профилирующие дисциплины(ПД)/ Profession requirements(VRS)**	**68**		**11**	**0**	**0**	**1890**	**150**	**165**	**180**	**0**	**100**	**300**	**995**	**0**	**0**	**0**	**6**	**5**	**10**	**25**	**22**
	Міндетті компонент(БеП/МК)/ Обязательный компонент(ПД/ОК)/ Core subjects(VRS/CS)	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	ЖОО компоненті(БеП/ЖК)/ Вузовский компонент(ПД/ВК)/ University component(VRS/UC)	47		7	0	0	1410	105	120	120	0	100	210	755	0	0	0	6	5	10	10	16
	Таңдау бойынша компонент(БеП/ТК)/ Компонент по выбору(ПД/КВ)/ Electives(VRS/ES)	21		4	0	0	480	45	45	60	0	0	90	240	0	0	0	0	0	0	15	6
Оқу жоспары бойынша барлығы/ Итого по учебному плану/ Total on curriculum		**236**			**0**	**0**	**6930**	**540**	**420**	**1065**	**0**	**170**	**1320**	**3415**	**32**	**32**	**30**	**30**	**30**	**30**	**30**	**22**

4	**Оқытудың қосымша түрлері/ Дополнительные виды обучения/ Additional courses**		**Кредиттер саны/ Количество кредитов/ Number of credits**	**Академиялық кезең/ Академический период/ Academic period**	**Сағаттар саны/ Количество часов/ Number of hours**	**Апта саны/ Количество недель/ Number of weeks**
5	**Қорытынды аттестаттау модулі (ҚАМ)/ Модуль итоговой аттестации (МИА)/ Module of final certification (MoFC)**		**8**		**240.0**	
Қорытынды ҚА ескерілуімен/ Итого с уч. ИА/ Total including FC			**244**		**7320.0**	

1Notes:

№	Факультет / Кафедра	
	ҚАЗАҚ ТІЛІНДЕ	**IN ENGLISH**
I	**Агробиология**	**Agrobiology**
1	Агрономия, селекция және биотехнология	Agronomy, breeding and biotechnology
2	Жеміс-көкөніс шаруашылығы, өсімдік қорғау және карантин	Horticulture, plant protection and quarantine
3	Топырақтану, агрохимия және экология	Soil science, agrochemistry and ecology
II	**Ветеринария**	**Veterinary**
4	Акушерлік, хирургия және өсіп-өну биотехнологиясы	Obstetrics, Surgery and Reproductive Biotechnology
5	Биологиялық қауіпсіздік	Biosecurity
6	Клиникалық ветеринариялық медицина	Clinical Veterinary Medicine
7	Микробиология, вирусология және иммунология	Microbiology, virology and immunology
8	Ветеринариялық санитариялық сараптау және гигиена	Veterinary sanitary examination and hygiene
9	Н.У.Базанова атындағы «Физиология, морфология және биохимия»	"Physiology, morphology and biochemistry" named after N.U. Bazanova
III	**Су, жер және орман ресурстары**	**Water, land and forest resources**
10	Орман ресурстары, аңшылықтану және балық шаруашылығы	Forest resources, hunting and fisheries
11	Жер ресурстары және кадастр	Land resources and cadastre
12	Су ресурстары және мелиорация	Water resources and melioration
IV	«Бизнес және құқық» жоғары мектебі	Higher School "Business and Law"
13	Есеп, аудит және қаржы	Accounting, audit and finance
14	Х.Д.Чурин атындағы «Менеджмент және агробизнесті ұйымдастыру»	"Management and organization of agribusiness" named after H.D. Churin
15	Құқық	Right
V	**Зооинженерия және тағам өндірісінің технологиясы**	**Zooengineering and food production technology**
16	Зооинженерия	Zooengineering
17	Тағам өнімдерінің технологиясы және қауіпсіздігі	Technology and food safety
VI	Инженерлік-техникалық	Engineering
18	Аграрлық техника және механикалық инженерия	Agricultural machinery and mechanical engineering
19	И.В.Сахаров атындағы «Машина пайдалану»	"Machine use" named after I.V. Sakharov
20	Энергия үнемдеу және автоматика	Energy saving and automation
21	IT-технологиялар және автоматтандыру	IT technologies and automation
VII	**Басқарма Төрағасы - Ректордың орынбасары**	**Deputy Chairman of the Board- Rector**
22	Жалпы білім беру пәндер	General university department
23	Дене тәрбиесі және спорт	Physical education and sports
24	Әскери кафедра	Military department

4. Modules Competency Map

Codes	Module	Educational competence	Learning outcomes
MC1	**Module. Humanities and language**	aimed at the formation of fundamental source and historiographic materials, as well as for the achievement of modern historical science of Kazakhstan; to determine the role of the history of Kazakhstan in the system of humanitarian knowledge; on revealing the specifics of the object and subject of history of Kazakhstan for the analysis of topical problems of the modern stage of development; on creation of scientifically grounded concept of history of Kazakhstan based on integral and objective coverage of the main stages of ethnogenesis of the Kazakh people, evolution of forms of statehood and civilization in the Great Steppe; on systematization of knowledge of the main events of the modern history of Kazakhstan.	- demonstrate knowledge and understanding of the main stages of development of the history of Kazakhstan - correlate the phenomena and events of the historical past with the general paradigm of world-historical development of human society through critical analysis; - possess the skills of analytical and axiological analysis in the study of historical processes and phenomena of modern Kazakhstan - be able to comprehend objectively and comprehensively the immanent features of the modern Kazakhstan model of development - to systematize and give a critical assessment of historical phenomena and processes in the history of Kazakhstan.
MC2		form a system of general competencies that ensure the socio-cultural development of the personality of the future specialist based on the formation of his ideological, civic and moral positions;	- to evaluate the surrounding reality on the basis of ideological positions, formed by the knowledge of the fundamentals of philosophy, which provide scientific understanding and study of the natural and social world by methods of scientific and philosophical knowledge; - to interpret the content and specific features of the mythological, religious and scientific worldview; - to give assessment to everything happening in the social and industrial spheres;
MC3		develop the ability to interpersonal social and professional communication in the state, Russian and foreign languages;	- implement the use of language and speech tools based on a system of grammatical knowledge; analyze information in accordance with the situation of communication; - to carry out the use of linguistic and speech means based on the system of grammatical knowledge; analyze information in accordance with the communication situation;
MC4	**Module. Professional and communi**	The development of information literacy through the mastery and the use of modern information and communication technologies in all ar-	- evaluate the actvities and actions of communication participants. - to use in personal activities various types of information and communica-

	cative	eas of life and work;	tion technologies: Internet resources, cloud and mobile services for searching, storing, processing, protecting and distributing information;
MC5		Have an intolerant attitude toward corrupt behavior, respectful of legislation and law.	- analyze events and actions from the point of view of the area of legal regulation and be able to refer to the necessary regulatory acts; - to be guided in the current legislation; using the law, to protect their rights and interests, - to carry out professional activities on the basis of a developed legal awareness, legal thinking and legal culture; - to acquire a sufficient level of legal awareness; - be able to assess the facts and phenomena of professional activity from an ethical point of view; - apply moral rules and norms of behavior in specific life situations
MC6		Be competent to analyze and obtain information in accordance with the basic knowledge of the economy; use the basics of economic knowledge in various fields;able to apply this knowledge in solving situational and practical problems.	- to know the fundamental problems of the functioning of the economy, the mechanism of action and manifestation of economic laws, as well as the main features of the leading schools and areas of economic science; - to be aware of economic terms and categories, use them in their educational activities; - to understand and know the main events of the world and domestic economic history, the course of ongoing reforms in the light of the strategy "Kazakhstan - 2050", development trends in the field of modern business; - to distinguish and compare the behavior of market agents in different types of market structures; - to explain the interaction of economic agents in macroeconomic markets; - to compare the impact of macroeconomic policies in different countries; - to argue their own views on modern macroeconomic phenomena; - to use the knowledge gained in

			practice to assess the results of economic reforms in Kazakhstan
MC7		To be competent in the application of methods for the implementation of low-waste production and the assessment of the environmental efficiency of economic activity.	- know the contents of the basic terms in the field of ecology, environmental management; modern global and regional environmental problems and their solutions; - be able to apply environmental knowledge to solve and predict possible environmental problems; - apply methods for the implementation of low-waste production and assess the environmental performance of economic activity. - establish causal relationships between phenomena occurring in nature and society, - apply environmental knowledge to solve and predict possible environmental problems.
MC8		Contribute to the ability to apply this knowledge to address the issues of safety and reliability of operation of machinery and equipment and knowledge of the issues of social protection of workers.	- to know the main legislative acts on industrial safety, labor protection, environmental protection and civil protection; - apply the knowledge gained to address the safety and reliability of the operation of machinery and equipment; - ability to evaluate machinery and process equipment in terms of exposure to abnormal situations.
MC9	**Module. Socio-political knowledge and a healthy lifestyle**	form the skills of self-development and education throughout life;	-to assess situations in various spheres of interpersonal, social and professional communication, taking into account the basic knowledge of sociology, political science, cultural studies and psychology; - to synthesize knowledge of these sciences as a modern product of integrative processes; - to use scientific methods and approaches of research of a specific science, as well as the entire socio-political cluster; - develop their own moral and civic position; - operate with the social, business, cultural, legal and ethical norms of Kazakhstan society; - demonstrate personal and professional competitiveness; - to put into practice knowledge in the

			field of social sciences and humanities, having international recognition; - to make a choice of methodology and analysis; - summarize the results of the study; - to synthesize new knowledge and present it in the form of humanitarian socially significant products;
MC10		form a personality capable of mobility in the modern world, critical thinking and physical self-improvement.	- to build a personal educational trajectory throughout life for self-development and career growth, focus on a healthy lifestyle to ensure full social and professional activities through methods and means of physical culture.
		Basic Competences	**Learning outcome**
MC 11	**Module 1. Introduction to the specialty**	Possession of basic knowledge in the field of General theoretical disciplines that contribute to the formation of the foundations of the scientific worldview, the development of logical thinking, the ability to analyze physical processes, the ability and willingness to participate in the development of modern theoretical and experimental research methods. To contribute to the formation of students ' General understanding of the technologies and methods of work in agricultural production, to apply the basics of economic knowledge in various fields of professional activity.	- know the main crops, their classification, cultivation technology and ways to increase yields; - to know the main breeds of farm animals and methods of their breeding and maintenance.
MC 12	**Module 2. Natural Sciences and electrical engineering**	Formation of students ' knowledge and skills of using fundamental laws and theoretical provisions of physics; Mastering knowledge of the basic laws of electrical engineering, electric drive and power supply, methods of calculation of electric circuits of direct, sinusoidal current and methods of calculation of three-phase electric circuits; Contribute to the use of the basic laws of natural Sciences in professional activities.	- to formulate methods of solving mathematical problems and theoretical conclusions with bringing the solution to a practically acceptable result; - apply the basic laws of electric circuits, methods of calculation of electric circuits of direct and sinusoidal current, methods of calculation of three-phase electric circuits; - solve mathematical problems on heat transfer processes, process and analyze experimental data; - apply theoretical knowledge to solve specific physical problems and situations, analyze the results of physical experiment, simulate physical situations using the methods of information technology; - learn to calculate the state of working

			bodies, thermodynamic processes and cycles, heat exchange processes, apparatus and other basic technical devices industry.
MC 13	**Module 3. Materials science and basics of interchangeability**	To facilitate the reasonable selection of material and processing techniques to retrieve the properties providing high reliability of the parts, principles of manufacturing products, providing the possibility of assembling independently manufactured mating parts, to correctly calculate and assign different landing in zavisimosti from the operating conditions of the mating parts.	- to determine the relationship between the structure, properties of metals and alloys, patterns of change in properties as a result of their thermal and chemical-thermal treatment; - to develop an operational map of the manufacture of parts, select the accuracy parameters of the tables of the Unified system of Tolerances and Fit, perform various types of machine parts processing; - to be competent in matters of the state system of standardization, in its basic provisions, concepts and role in the development of scientific and technological progress, in the intensification of production and in improving the quality of agricultural machinery.
MC 14	**Module 4. Theoretical and applied mechanics**	Form a system of General competencies that provide understanding of the fundamental laws of mechanical motion and equilibrium of a material point and bodies, their application in solving specific problems of modern technology. They form the skills of solving engineering problems using the basic laws of theoretical and applied mechanics.	- explain the terminology, basic concepts and definitions of solid mechanics, the basic laws of motion of bodies; - to make the design scheme of the loaded device, the kinematic scheme of the mechanism, to determine the static, kinematic and dynamic characteristics; - own methods of abstraction, generalization, mathematical methods of solving problems; - explain the main types of loads acting on the parts and their elements, the main mechanical characteristics of structural materials, to use the basic theory and calculation of parts and assemblies of machines, their properties and application bases in the selection of rational parameters of parts and assemblies; it is rational to choose a computational model and carry out the necessary calculations in the design process and evaluate performance of a part design; is graphic, graphic-analytical, analytical and numerical methods of calculation and analysis of structures, calculation of details of structures for

			strength, stiffness, stability and choose the parameters of the material and design on the criteria of their performance; - perform structural, kinematic, kinetostatic analysis of mechanisms by graphic, graphic-analytical and analytical methods; - determine the mobility and maneuverability of robots and manipulators.
MC 15	**Module 5. Basics of graphics and design of machinery**	Aimed at the formation of understanding in the spatial representation of the student, the theoretical foundations of the drawing, preparation and handling of technical and design documentation; Form the ability to solve geometric problems on a computer; apply autocad graphics systems; skills in the analysis and engineering calculations of parts and assemblies of machines, design of machines and mechanisms, taking into account the set of requirements for engineering products.	- demonstrate methods of obtaining images of spatial forms; - build images of different kinds of compound parts most common in the specialty; - have the skills to read drawings of Assembly units, as well as be able to perform drawings in accordance with ESKD standards; - use the graphics capabilities of Word, Excel, Paint, Power Point; AutoCAD graphic primitives; - apply calculation methods of machine parts according to the criteria of efficiency; the study of the device, application and design of parts and assemblies of machinery, a critical comparison of different designs of parts and assemblies of machines for selecting the best design under given conditions, as well as finding the causes of the poor performance of the machines to alert them of outages and faults; - solve the problems of designing machines using methods of analysis and optimization based on digital technology.
MC 16	**Module 6. Innovative technologies and technical means and production practice**	They are aimed at the formation of understanding of innovative technologies and technical means in crop and livestock production, possession of digital technologies in the management of working processes of machines and equipment.	- be able to work with precision farming equipment; - use information technologies of precision agriculture; - to possess the skills of using on-Board computers as a means of information management, the ability to use information technologies of precision agriculture and smart farm; - select digital control technology machines and equipment in crop and livestock; - have knowledge of the use of digital

			production management technology for the selection of machines and equipment, and their production and technical operation in the workplace.
MC 17	**Module 7. Technological machines and business activities**	Forms an understanding of the devices, operating principles and settings of technological machines and equipment in animal husbandry; Form skills for the implementation of safety regulations, industrial sanitation, fire safety and health and nature protection standards; Skills for the management of machine-tractor units, mechanized processes and productions as a whole.	- to know the purpose, structure, theoretical description of working processes, and adjustment of different models of agricultural machinery of animal husbandry; - to use digital technologies of control of machines and equipment in animal husbandry, in processing and processing of animal raw materials; - demonstrate the main provisions of the regulations of the Republic of Kazakhstan in the field of labor protection, occupational safety management system; - to know the production processes causing violation of requirements for labor protection; - apply the multi-functional activities of professionals needed to solve security problems; - to solve specific engineering tasks for the prevention of industrial injuries, to own methods of application of means of protection from dangerous and harmful factors; - anticipate and timely prevent possible hazards and hazards in the workplace; - to build economic and organizational decision-making; - use the rules of fair valuation of subjects in market conditions; - to improve the society of automated information on the state of environmental monitoring, the main theoretical approaches to economic and legal issues.
		Professional competencies	**Learning outcomes**

MC 18	**Module 8. Machinery and equipment for agricultural production**	The acquired professional knowledge contributes to mastering the basics of project management and decision-making techniques used in the development, design and operation of machine technologies and machine systems for the production, storage and transportation of crop and livestock products. Forms an understanding of the devices, operating principles and configuration of modern machinery and equipment in agriculture.	- know the purpose of the device, workflows and regulation of basic machinery; possible malfunction of machinery, methods of detection and elimination; - set up the machine for a given mode of operation and manage it; - own technology for processing agricultural products, machinery and technology in agriculture, technology and equipment works in soil treatment; machines for planting and seedlings; harvesting, processing, storage of cereals, etc.; - to use innovative technologies and technological machines and equipment in feed production; - use digital control technology of machine and tractor units; - to analyze and classify the methods and means of small-scale mechanization, design parameters and modes of operation of small-scale mechanization in the peasant (farmer) farms; - to carry out selection of technical means and to provide their effective use.
MC 19	**Module 9. Agro-technological machines and the design of livestock and processing enterprises**	Forms an understanding of technology and technical means of production of crop, livestock, primary processing and processing of raw materials, the design of livestock processing enterprises in agriculture.	- to know the purpose, device, working processes and adjustments of technological machines and equipment in animal husbandry; - detect possible malfunctions of machines, perform operations to eliminate them; - to use innovative technologies and technical means at preparation and storage of agricultural production; - to acquire knowledge about the design and principle of operation of the equipment used in the preparation and storage of agricultural products, methods of technological calculation in the design; - use of the basic provisions and modern methods of design of livestock and processing enterprises of agriculture, methods of selection of machinery and equipment, taking into account the technical specifications; - use computer programs for the design of livestock processing

			enterprises.
MC 20	**Module 10. Automotive engineering, operation and repair of machines**	Forms an understanding of the design and principles of systems, mechanisms and tractors and cars, production and technical operation of the machine Park, the ability to use innovative technologies of maintenance, repair and restoration of worn parts of machines and machines in General.	- know the design and principle of operation of systems, mechanisms and tractors and cars in General; - use the basics of calculating the mechanisms and systems of the engine, tractor and car; - to compare the working conditions and design features of machines, to determine the properties of compliance of the tractor and the car to its functional purpose; - to be able to choose an energy vehicle for a given technological process in agriculture, to use advanced technologies, to organize technical operation, to form the optimal composition of the machine and tractor fleet on the basis of the introduction of modern machines and technological complexes; - use the basic provisions and rules of design, construction and calculation of technological equipment and devices; basic provisions for rational operation, maintenance, repair and modernization of technological equipment of the author-mount enterprises.

5. Summary table showing the amount of credits mastered by the modules of the educational program

Course of Study	Semester	The number of studied disci-plines			Number of academic credits						Total in academic hours	Military training	Amount	
		MC	UC	CC	Theoretical training	Educational practice	Internship	Undergraduate practice	Final examination	Total			Examination	Differential Test
I	**1**	4	2	–	32	–	–	–	–	32	960	–	6	
	2	4	2	1	30	2	–	–	–	32	960	–	6	1
II	**3**	3	1	2	30	–	–	–	–	30	900	–	6	
	4	1	3	2	25	–	5	–	–	30	900	–	6	1
III	**5**	–	4	2	30	–	–	–	–	30	930	–	6	
	6	–	4	2	25	–	5	–	–	30	900	–	6	1
IV	**7**	–	2	4	30	–	–	–	–	30	900	–	6	
	8	–	3	1	17	–	–	5	8	30	900	–	5	1
Итого		**12**	**21**	**14**	**219**	**2**	**10**	**5**	**8**	**244**	**7350**		**47**	**3**

Appendix to the educational program

Application 1

Information about the disciplines

№	Name of the discipline	Short description of the discipline (30-50 words)	Number of credits	Formed competencies (codes)
The cycle of general education disciplines (University component / Optional component)				
1	History of Kazakhstan (SE)	The study of the course is aimed at the formation of students the concept of modern history of the Fatherland, based on a holistic and objective coverage of the problems of ethnogenesis of the Kazakh people, the evolution of forms of statehood and civilization in the great steppe and the totality of the most significant historical facts and events. Systematization of historical knowledge about the main events of modern history, forming a scientific worldview and citizenship. Creation of ideological and spiritual basis for consolidation of multi-ethnic and multi-confessional Kazakhstan society	5	CC1
2	Foreign language	Learning a foreign language sets tasks for the development of foreign language communicative competence in the totality of its components: **Speech competence** - the development of communication skills in four main types of speech activity; **Language competence** - mastering new language means (phonetic, spelling, lexical, grammar); **Socio-cultural competence** - the formation of the ability to represent your country, its culture; **Educational and cognitive competence** - familiarity with the methods available to learners and methods of independent study of languages and cultures	10	CC3
3	Kazakh (Russian) language	Discipline is intended for the development of the linguistic identity of the student who is able to carry out cognitive and communicative activities in the Russian language in the areas of interpersonal, social, professional, intercultural communication in the context of the implementation of state programs of trilingualism and spiritual modernization of national consciousness. Discipline implies the successful mastery of the types of speech activity in accordance with the level training.	10	CC3
	Philosophy	The course aims to form students` concepts	5	CC2

		of philosophy as a special form of knowledge of the world, its main sections, problems and methods, as well as skills of self-analysis and moral self-regulation, the development of research abilities and the formation of intellectual and creative potential. Special attention is paid to the problems of preserving national identity, the assimilation of such key ideological concepts as justice, dignity and freedom, and the role of philosophy in modernizing public consciousness and solving global problems of modernity.		
5	Information and communication technology	Formation of the ability to critically evaluate and analyze processes, methods of searching, storing and processing information, ways of collecting and transmitting information through digital technologies. Mastering the conceptual fundamentals of computer systems, operating systems and networks. Formation of knowledge about the concepts of development of network and web applications, information security tools.	5	CC1, CC2
	The module of socio-political knowledge (sociology, political science, cultural studies, psychology)			
6	Sociology	studies society, revealing the internal mechanisms of its structure and the development of its structures (structural elements: social communities, institutions, organizations and groups); patterns of social actions and mass behavior of people, as well as relations between the individual and society, sociology explains social phenomena, collects and summarizes information about them.	2	CC2; CC9
7	Political science	the science of politics, the laws of the emergence of political phenomena (institutions, relationships, processes), the methods and forms of their functioning and development, the methods of managing political processes, political consciousness, culture, etc.	2	CC2; CC9-
8	Culturology	studies on culture, its history, essence, patterns of functioning and development, which can be found in the works of scientists representing various options for understanding the phenomenon of culture. In addition, cultural studies are engaged in studying the system of cultural institutions, through which the upbringing and education of a person are carried out and which produce, store and transmit cultural information.	2	CC2; CC9

9	Psychology	is a science which goal is to study the mechanisms of the functioning of the human psyche. It examines the patterns of people's behavior in various situations, the resulting thoughts, feelings and experiences. Psychology is something that helps us to get to know ourselves more deeply, to understand our problems and their causes, to recognize our weaknesses and strengths. Studying Psychology contributes to the development of moral character and morality in man.	2	CC2; CC9
10	Physical training	Discipline covers a range of issues related to physical culture, as part of human culture, healthy lifestyle, its main components, socio-biological basis of human adaptation to physical and mental activity, preparation for independent physical culture and sports, age physiology, self-control physical condition, psychophysical basis of physical culture and sports, hygiene.	8	CC10
	The cycle of general education disciplines Optional component			
11	Law and anticorruption culture	The course will allow you to learn the concepts and content of law and professional ethics in legal activity, possible ways to resolve moral conflict situations in the professional activity of a lawyer; be able to evaluate the facts and phenomena of professional activity from an ethical point of view, apply moral rules and norms of behavior in specific life situations	5	CC7-LO10
	Economy	Formation of a complex of knowledge in the field of economy and foreign economic policy; on the basic laws governing economic processes; on the problems of inflation, unemployment.	5	CC7, LO2
	Ecology	It provides theoretical knowledge in the field of ecology, contributes to the improvement of environmental literacy of students, forms environmental thinking, as well as the ability to apply this knowledge in professional and other activities.	5	CC8, LO10
	Life safety	Forms a professional culture of safety, which is understood as the willingness and ability of an individual to use in professional activities the acquired set of knowledge, skills and abilities to ensure safety in the field of professional activity.	5	CC9, LO1, LO10
Cycle of basic disciplines (University component / Component of choice)				

12	Basics of agroengineering	Discipline is aimed at shaping the students a general understanding of technologies and methods of performing work in agricultural production, the general patterns of occurrence and the main stages of development of agricultural technology, production processes in crop production and animal husbandry.	4	CC7, LO1, LO8
	Introduction to the specialty	Students gaining theoretical knowledge about the path traveled by researchers and builders of agricultural machinery, their strengths and weaknesses - developing students" skills in analyzing existing machines and acquiring the ability to make money into the future.	4	CC7, LO3
13	Business ethics	The nature and essence of professional ethics. Ethics of business relations in business. Features of business ethics. Elements and varieties of business ethics. Ethical norms, principles and laws in business. Ethics and corporate culture. Ethics of modern business. Managerial ethics and ethics of managerial communication. Executive ethics.	4	CC7, LO2
	Business correspondence	General requirements and features of business correspondence. Business letter in Kazakhstan. Legislative and regulatory-methodological bases of correspondence in Kazakhstan. Rules for the design of a business letter. Business letter forms. Letters on general issues. The structure of a business letter. Informative and convincing business letter. Types of writing. The specifics of written genres. The system of organizational and distribution documentation. Types and features of foreign trade partners. Business etiquette and protocols.	4	CC7, LO2
14	Basics of crop and livestock	The discipline examines the main crops, their importance, history and distribution, botanical and biological features, patterns of growth and development, as well as characteristics of the main types of farm animals, the main areas of productivity and breed resources.	6	CC7, LO1, LO3
	Production technology of crop and livestock products	Discipline is designed to familiarize students with the current state of science on patterns of growth, plant development and crop formation, features of the production of environmentally safe products in plant growing and animal husbandry, the development of network schedules for the cultivation of field crops, technologies of livestock pro-duction, meat product quality research, cat-tle processing technology	6	CC7, LO1, LO3

15	Mathematics	The mathematics course is the main foundation of a specialist""s mathematical education. The sections (linear algebra, vector algebra, analytical geometry and elements of mathematical analysis) contain modern methods of analysis and are focused on the application of mathematical methods in applied problems.	5	CC8, LO1, LO4
16	Physics	Formation of an in-depth understanding of the structure of matter, the nature of the phenomena occurring in it, which determines the development of natural science and scientific and technological progress. The relationship of physics with other natural sciences and related disciplines. The role of physics in the creation and development of new branches of technology and new technologies. The influence of technology on the development of physics. Methods of physical research: experience, hypothesis, experiment, theory.	6	CC8, LO1, LO4, LO6
17	Theoretical foundations of electrical engineering	The course is aimed at developing students"" knowledge of the laws and methods of calculating electrical circuits of electrical devices and electrical power systems, skills of calculating and analyzing the parameters of currents and voltages in the established modes of linear equivalent circuits of electrical circuits.	6	CC8, LO6
	Theoretical fundamentals of heat engineering	Formation of knowledge of the basics of energy conversion, laws of thermodynamics and heat and mass transfer, thermodynamic processes and cycles, properties of essential working fluids for the industry, calculation of heat exchangers, methods of heat exchange, principle of operation and arrangement of heat exchangers, heat power plants and other heat engineering devices used in the industry, heat supply systems .	6	CC8, LO6
18	Materials science and technology of structural materials	Formation of a complex of knowledge about the properties and structure of materials, methods of production and hardening, patterns of hot processing and cutting of structural materials, equipment, machine tools and tools, the impact of technological methods of production and processing of workpieces on the quality of parts, modern methods of producing parts with specified operating characteristics necessary for the informed choice of the material of the part and processing technology.	5	CC9, LO7
	Modern advanced	The purpose of development of the disci-	5	CC9,

	materials and methods of their processing	pline "Modern perspective materials and methods of their processing" is to consolidate, expand and deepen the students ' knowledge, skills and competencies in the study, design development research, modification of production processes, processing and processing of nanomaterials of semi-finished products and products, preparation of tasks for the development of design technological solutions and processes.		LO7
19	Basics of interchangeability	The discipline "Basics of interchangeability" studies the role of interchangeability in improving the quality of machines, common principles for building systems of tolerances and fits of smooth cylindrical joints of the ESDP. The characteristics of the types of errors and the accuracy of the shapes and the location of the processing surfaces in the manufacture and restoration of machine parts and their impact on the reliability of machines are given. The interchangeability of smooth conical joints, threaded, keyed and spline joints and gears is considered.	5	CC9, LO5, LO7
	Interchangeability, standardization and technical measurements	«Interchangeability, standardization and technical measurements» studies the role of interchangeability in improving quality, uniform principles for building tolerance systems and fit smooth cylindrical and flat joints, standardization of deviations of surfaces of machine parts, tolerances and fit standard parts, assembly units and connections. Various methods for calculating size chains are given.	5	CC9, LO5, LO7
20	Educational practice	In the course of practical training, students solve problems related to the study of the basics of production and technological processes; get acquainted with machine-building equipment, tools, tools and equipment, organize work at the enterprise, and also acquire practical skills in mechanical, welding, and metalwork-Assembly areas.	2	CC9, LO5, LO7, LO9
21	Theoretical mechanics	Theoretical mechanics gives an idea about the mechanics of a material point and a mechanical system, about a qualitative description of equilibrium and motion states, the characteristic properties of a moving body, a point and a mechanical system; about the prospects for the application of new achievements of mechanics to improve the mechanisms and machines	6	CC10, LO7
	Mechanical engineering	Axioms of statics. Equilibrium of bodies under the influence of converging forces.	6	CC10, LO7

		Equilibrium of bodies under the action of a plane system of forces. Equilibrium of forces taking into account friction. The theory of forces and pairs in space. The moment of force about the axis. The balance of forces under the influence of spatial forces. Kinematic problems. Point motion laws. The speed and acceleration of a point in different ways of specifying the movement. Plane motion of a rigid body. Determination of speeds using the instantaneous center of speeds. Acceleration of body points during plane motion. Dynamics laws and tasks.		
22	Material resistance	Resistance of materials forms a complex of knowledge among students in the field of engineering calculations for simple and complex types of deformations for strength, stiffness and stability of structural elements, determining the required dimensions for safe operation under static and dynamic loads.	5	CC10, LO7
	Material strength	The strength of materials forms the ideas of students about the basic methods of this science as a section of mechanics on the strength calculation of structural elements and machines, the acquisition of skills for solving problems of strength calculation, the development of algorithms for solving them..	5	CC10, LO7
23	Theory of mechanisms, machines and manipulators	Familiarization with the basic types, principles of construction of the structure of mechanisms and machines, the principles of individual mechanisms, and their interaction in the machine. Finding the kinematic and dynamic parameters of the specified mechanisms and machines and the optimal parameters of the designed mechanisms for a given kinematic and dynamic properties. The study of General methods of research and design schemes of mechanisms necessary for the creation of machines.	5	CC10, LO7, LO8 LO9
	Mechanics of machines	Theoretical basis of design, calculation and construction of parts and assemblies of all technological machines. The main types of plane and spatial mechanisms. Structural synthesis and analysis of mechanisms. General methods of synthesis of mechanisms	5	CC10, LO7, LO9
24	Engineering graphics	«Engineering graphics» is the formation of students' competencies that ensure the development of spatial imagination and constructive-geometric thinking, the ability to analyze and synthesize spatial forms and	5	CC11, LO5

		relationships based on graphical models of space, practically realized in the form of drawings of specific spatial objects and dependencies.		
25	Computer graphics and 3D modeling	Forms students worldviews in computer graphics and systematic mastery of students knowledge in the field of automating the execution of design graphic and text documentation, creating, processing and displaying digital graphic images, as well as instilling in students the skills of using computer-aided design systems for solving design problems.	6	CC11, LO5
	3D graphics	A set of methods and means of practical solution of engineering problems using computer equipment and applied information technologies, to create models of varying degrees of complexity, among which a special place is occupied by computer-aided design systems.	6	CC11, LO5
26	Machine parts and design basics	Studies the features of the work of machines and mechanisms, as well as familiarity with the details and components of general use; understanding the causes of failure of parts and components, the study of the basic methods of calculating parts and their design; study and calculations of various types of compounds used in engineering; calculations and design of various types of mechanical gears, shafts, bearings, couplings, connections, the choice of lubrication systems for parts in the course work.	6	CC11, LO7
	Modern lifting and transport vehicles	The design of modern hoisting machines, the principles of their action, the scope. calculation and design of mechanisms. comprehensive mechanization and automation of production processes, improving the reliability and performance of machines, as well as economic issues. New methods for calculating and designing machines	6	CC11, LO7

27	Digital technologies and technical means in crop production	Study of digital technologies and technical means in crop production: IT-technologies in crop production, devices, principle of work, technological adjustments for various conditions of work and management of them in the working process, automatic regulation of technological processes in crop production; electronic database of the production process; the introduction of the Internet of things and telematics services in the management processes of specialized agricultural enterprises, robotic systems in crop production.	5	CC12, LO3, LO4
	Technical support of precision agriculture	The main directions of development of coordinate (exact) agriculture; bases of creation and functioning of global navigation satellite systems; principles of remote sensing of the earth; navigation equipment; unmanned aerial vehicles and optical sensors are considered. Provides for laboratory work on intellectual technical means of agriculture, allowing to master the practical skills of precision farming systems.	5	CC12, LO3
	Engineering psychology	Studies methods in labor activity, psychological features of work management. Masters the functions of a person in the "Personnel Management System", "Person and management system" and "Man-machine". Psychological analysis of human characteristics in the conditions of labor automation. Confirms knowledge about "Scientific and technological progress and humanity" and about "Labor and humanity". Masters the psychological characteristics of human labor.	5	CC12, LO11
28	Production practice	Teach practical skills in the organization and technology of mechanized work in crop and animal husbandry, study the technology of production of the main crops for the region, identification and Troubleshooting of machines.	6	CC12, LO3, LO8

29	Digital technologies and technical means in animal husbandry	Digital technologies and technical means in animal husbandry are described: IT-technologies in animal husbandry, devices, the principle of works, adjustment on various conditions of works and management of them in working process, automatic regulation of technological processes in animal husbandry; electronic database of production process; robotization of processes in animal husbandry.	5	CC12, LO3, LO4, LO8, LO12
	Smart farm	Study of smart farm: used equipment and sensors, methods of their communication, data processing systems. Monitoring of the animal and its location; Monitoring of health, diet, life cycles; Feed, water supply, dosing; Management of lighting, ventilation and temperature of the farm;Collection and display of statistics on all monitored indicators; Remote access and control; programming and automatic execution of tasks for animal care.	5	CC12, LO3, LO8, LO12
	Pedagogy	The study of the general laws and features of education, upbringing and education of the young generation that meet the needs of society. Pedagogy – is the definition of the essence of education and upbringing, clarification, identification of specific laws of education and upbringing, definition of the influence of society, the individual in the interest. Preparing people for public life, providing a new generation, public historical experience.	5	CC12, LO11
30	Digital technologies of working process control of machines and equipment in animal husbandry	Directions of development of technical progress of machinery and equipment in animal husbandry. Understanding in implementation of preparation for work, use in the process of machines and equipment of coptrol systems, navigation and regulation of technological parameters of processes in animal husbandry and organization of agrotechnical service using digital technology	5	CC13, LO3, LO4, LO8
	Technological machines and equipment in animal husbandry	Production and preparation of coarse and succulent feed and factors affecting their quality; modern machines and equipment for complex mechanization of technological processes in animal husbandry; features of mechanization of production processes in farms; device, workflow, basics of operation of means of mechanization in animal husbandry; mechanization of veterinary and sanitary works.	5	CC13, LO3, LO8

	Methods of teaching agricultural disciplines	Considers the current state of use of agricultural machinery, advanced forms of organization of the use of machinery, the use of agricultural machinery, as a system of organizational, technical, technological and other measures implemented during the operation of the fleet of machines, the importance of the effective use of tractors, agricultural machinery and equipment in market conditions in the agro-industrial complex.	5	CC13, LO11
31	Production practice	Teach practical skills in technology and organization of mechanized works in crop and livestock, operation and maintenance of tractors, combines and machines for mechanization of livestock, learn how to make machine-tractor units, prepare units for mechanized works, identify and eliminate faults in machines.	7	CC13, LO8, LO10
32	Labor protection and industrial safety	Organizational and legal issues of labor protection. Analysis of injuries and occupational diseases, their prevention. Training, instructions, instructions for labor protection. Microclimate of industrial premises. Production noise and vibration. Industrial lighting. Technical means of security.	5	CC13, LO10
	Safety of technologi cal processes and production	Labor safety in the repair and maintenance of agricultural machinery. Labor safety when using lifting and transport and power equipment. Labor safety in transport and handling operations. Fire safety. Lightning protection of buildings and facilities.	5	CC13, LO10
33	Agribusiness organization	The course deals with the following issues: the concept, importance and characteristics of agribusiness, structure and current state of agribusiness in Kazakhstan, characteristics of food industries, the concept of raw materials, its classification and options for placing the raw material base, the organization of inter-economic and economic relations in the production, processing, storage and sale of agricultural products.	5	CC13, LO2
	Business planning	The discipline is aimed at developing the skills of planning the activities of business entities in a competitive economy. In the study of discipline provided fundamental training of the student in the field of business planning.	5	CC13, LO2
Cycle profiling discipline (University component/ Component of choice)				
34	Innovative agricultural machinery	Discipline envisages the studies of devices, principle of work of machines and instruments for treatment of soil; for sowing and	6	CC14, LO3

		landing; for top-dressing; for defence of plants; for the care of sowing; for cleaning up of herbares and silo cultures; for cleaning up of ear, leguminous and other cultures; machines, aggregates, complexes послеуборочный treatments and storages of harvest.		
35	Technological machines and equipment in feed production production	Possession of methods of collection and analysis of information source data for advanced technologies and technical means of feed production. Study of the structures, operation principles of various machines and equipments including foreign ones. Combined forage harvesting machines and units.	5	CC14, LO3
	The basics of production and operation of machines and devices in crop	The discipline deals with advanced technologies of crop production, modern methods of acquisition of resource-saving machine and tractor units, operational technologies of the main mechanized works, as well as the basics of the organization of the machine and tractor fleet and engineering and technical service of agricultural enterprises.	5	CC14, LO9, LO11
	Private teaching methods tractors and cars	The discipline studies the general devices of tractors and cars, internal combustion engines, power systems of gasoline and diesel engines, engine cooling and lubrication systems, transmission of tractors and cars, chassis and control mechanisms of wheeled tractors of cars, hydraulic equipment of tractors and motor vehicles.	5	CC14, LO11
36	Small farm mechanization	Designs of installations, mini-techniques of industrial production, and also self-made designs which are available for production by rural craftsmen are described. Mechanization of labor in the household and farms	5	CC14, LO3, LO8
	Complex mechanization of farms	The basics of livestock production technology are presented. Designs of plants, machines and equipment for complex mechanization of production processes are described. The rules of operation of systems of machines and equipment and the basics of technological design of farms and complexe s.	5	CC14, LO3, LO8
	Private methods of teaching agricultural machines	The discipline provides for the study of devices, the principle of operation of machines and tools for tillage; for sowing and planting; for fertilizing; for protecting plants; for caring for crops; for harvesting grasses and silage crops; for harvesting ears, legumes and other crops; machines, aggregates, complex-es for post-harvest processing and stor-	5	CC14, LO3, LO11

		age of crops.		
37	Production practice	To teach practical skills in technology and organization of mechanized works in crop and livestock, operation and maintenance of tractors, combines and machines for mechanization of livestock, to study the production technology of the main crops for this zone, to learn how to make machine-tractor units, to prepare units for mechanized works, to identify and eliminate malfunctions in machines.	5	CC14, LO8, LO10
38	Agrotechnological livestock machinery	Agrotechnological machines of animal husbandry studies the purpose, device, working processes and regulation of basic models of technological machines of animal husbandry, possible malfunctions of these machines, methods of their detection and elimination, methods of justification and calculation of the main parameters and modes of operation of working bodies and mechanisms of machines, units (complex), the basis of their safe operation.	6	CC15, LO3, LO8, LO12
39	Mechanization of harvesting and storage of agricultural products	Storage of agricultural products. The processes occurring during storage, and the storage conditions of crop production. Types of storage and their characteristics. Methods and modes of storage of agricultural products. Ventilation storage. Storage conditions of grain, fruits and vegetables in a normal atmosphere. Storage designs. Heat balance of storage facilities, cooling dynamics of the blown layer.	5	CC15, LO3, LO8
	Machines for processing and storage of products	Technological equipment for the preparation and processing of agricultural products by the methods of separation, compounding, molding, heat and mass transfer. Technological equipment for the shops of small and medium-sized enterprises for the processing of agricultural products.	5	CC15, LO3, LO8
40	Design of livestock enterprises	Classification of technological lines of livestock enterprises. Information-based processes. Initial data for design. Selecting a model project and linking it to local conditions. Drawing up the scheme of technological processes. Calculations for the selection of technological and auxiliary equipment. Development of the scheme of placing the equipment in the room.	6	CC15, LO5, LO8, LO12

	Designing and construction of livestock facilities	Information and recommendations necessary for the designing, construction and operation of livestock facilities. The technical solutions of enterprises for different species of animals that meet the modern requirements of increasing the quality of production intensification and environmental protection are presented.	6	CC15, LO5, LO8, LO12
41	Undergraduate practice	Undergraduate practice is carried out to perform the final qualifying work, is mandatory and is a type of training sessions directly focused on professional and practical training of students	6	CC15, LO8, LO10, LO11
42	Modern tractors and cars	The design of modern tractors and cars, engines, electrical equipment, chassis, hydraulic, working and auxiliary equipment. Fundamentals of the theory and calculation of the tractor and the car - traction balance of the tractor and the car, the energy balance of the tractor, traction dynamics of the tractor and the car, the handling and stability of the tractor and the car.	5	CC16, LO7, LO9
43	Machine using	The discipline considers the use of modern and advanced agricultural machinery, advanced forms of organization of the use of machinery, the use of agricultural machinery as a system of organizational, technical, technological and other activities carried out in the operation of the fleet of machines, the value of the effective use of tractors, agricultural machinery and equipment in market conditions in agriculture.	5	CC17, LO9, LO11
44	Reliability and repair of machines	Fundamentals of reliability of machines, maintaining them in working condition by maintenance of repair of machines, the theory and practice of maintaining the equipment used in working condition. Causes of malfunctions in the machines and the consequences; timely elimination of them, methods and techniques that reduce the impact of malfunctions on quality performance, calculation of reliability of machines.	6	CC18, LO7, LO9
	Technical service of machines	Services for production and technical and repair and maintenance of machines. Organization of repairs and maintenance in the conditions of technical service. Formation of a network of enterprises that perform technical services. Planning and organization of technical service of machines.	6	CC18, LO7, LO9

	Private teaching methods for machine repair	The private method of teaching the dissertation "Repair and maintenance of machines" studies the forms of organization of the educational process on the subject of Repair and maintenance of machines. The purpose of this discipline is to teach students the methods techniques and means of conducting theoretical and laboratory classes of this subject	6	CC18, LO7, LO9, LO11

Application 2

Practice base

№	Name of companies, enterprises, organizations	Contacts, phone, e-mail
1	LLP SPC «Agricultural Engineering»	050005, Almaty, Raiymbek ave. 312, Number.:8(727)2479600; fax:8(727)2479607 e-mail: kazniimech@yandex.kz
2	«ZKAP «Amiran» LLP	Almaty region., Talgar district. number.:8(72774)42301,fax:8(727)3074822 e-mail: amiran_almaty@mail.ru
3	LLP «Baiserke-Agro»	Almaty region, Ili district, Baiserke Konayev st, 1. Number.:87019916120, 87018813379 e-mail: bajserke-agro.all.biz
4	CE «Mamed»	Almaty region., Karasai districe. Number.:8(727)3728617, 87016664751 e-mail: kalit50@mail.ru
5	TOO «Engineering innovation A-A»	0500000 Almaty, Dosmukhamedov st. 11/32 Number.:8(327)3174061; fax: 8(727)2380721 e-mail: isi-aa@mail.ru
6	TOO «Almaz-trans»	010000 Almaty, Radostovets st.120 Number.: 8(7272)961313

РЕЦЕНЗИЯ

на образовательную программу
6В08701 – «Аграрная техника и технология»

В подготовке современных инженерных кадров особое значение имеет включение в образовательную программу изучение современных технологии и технические средства в АПК. Настоящая образовательная программа способствует качественной подготовке специалистов по образовательной программе 6В08701 – «Аграрная техника и технология» и 6В08703 – «Цифровые технологии в агропромышленном комплексе», которые будут обладать необходимыми трудовыми функциями: осуществлять выполнение производственно-технологическую, организационно-управленческую, экспериментально-исследовательскую и проектно-технологическую деятельности на предприятиях и в организациях агропромышленного комплекса.

В программе определены цели и задачи, направленные на освоение основного вида профессиональной деятельности и соответствующих профессиональных компетенции.

Выпускникам данной профессии свойственны умения и навыки организации проектно-изыскательных, производственно-технологических, организационно-управленческих, экспериментально-исследовательских работ, мониторинг реализации Государственных Программ, разработка инвестиционной программы по развитию сельского хозяйства.

Сегодня функционирование сельскохозяйственной отрасли связано, прежде всего, с применением цифровой технологии в управлении производственной и технической эксплуатации машинного парка. В связи с этим в деле подготовки инженерных кадров необходимо особо уделить внимание к освоению студентов современных инновационных технологии и технических средств в АПК.

На основе вышеизложенного предлагается ввести в модульную образовательную программу следующие дисциплины:

1. Основы гидравлики и теплотехники;
2. Цифровые технологии в агроинженерии;
3. Автоматизация технологических процессов сельскохозяйственного производства;
4. Основы проектирования агропроизводства.

Зам. руководителя
крестьянского хозяйства «Өтей» Е.Ниязбаев

«ҚАЗАҚ ҰЛТТЫҚ АГРАРЛЫҚ ЗЕРТТЕУ УНИВЕРСИТЕТІ»
коммерциялық емес акционерлік қоғамы

ИНЖЕНЕРЛІК-ТЕХНИКАЛЫҚ ФАКУЛЬТЕТІ

№6 ХАТТАМА КӨШІРМЕСІ

Алматы қаласы 17 қантар 2024 ж.

«Аграрлық техника және механикалық инженерия»
кафедрасының отырысы

Төраға - Жумагулов Ж.Б.
Хатшы - Дюсенбиева А.Х.
Қатысқандар: 14 адам

КҮН ТӘРТІБІ:

1. 2024 – 2028 оқу жылдарына арналған 6В08701 – «Аграрлық техника және технология» білім беру бағдарламасын талқылау.

1. ТЫҢДАЛДЫ:

1. Жумагулов Ж.Б. – кафедра меңгерушісі: 6В08701 – «Аграрлық техника және технология», 6В07103 – «Машина жасау» және 6В11201 – «Қоршаған ортаны қорғау және өмір тіршілік қауіпсіздігі» білім беру бағдарламаларын талқылау үшін, өндірістен «Агроинженерия ОҒӨК» ЖШС басқарма төрағасының орынбасары Д.Карманов, «АуылТех» ЖШС директоры А. Адильшеев және Қазселденқорғау ММ бас маманы Бостаева А. келіп отырғанын айтты.

СӨЗ СӨЙЛЕГЕНДЕР:

1. Жумагулов Ж.Б. – қауым.профессор, 6В08701 – «Аграрлық техника және технология» жұмыс оқу жоспары және бадарламалары жөніндегі комитет мүшесі. Білім беру бағдарламасы студенттерге сапалы білім беруді қамтамасыз ету үшін оқу бағдарламасын, пәндердің мазмұнын, оқу нәтижелерін және басқа материалдарды қамтитындығы туралы айтты. Сондай-ақ, білім беру бағдарламасы әрбір нақты құзыреттіліктің тұжырымдамасын, оның «білімін», «дағдысын» және оқу нәтижелері түріндегі құрылымын, сондай-ақ студент-түлектің құзыреттілігін қалыптастырудың белгіленген деңгейлерін қамтитын құзыреттілік паспорттарының жиынтығын қамтитыны туралы атап өтті.

2. А. Адильшеев - «АуылТех» ЖШС директоры. 6В08701 – «Аграрлық техника және технология» білім беру бағдарламасы саласындағы жоғары білікті мамандарды даярлауға бағытталған. Оның артықшылықтары кең профильді дайындықты, практикалық бағыттылықты, заманауи технологиялар мен әдістерге басымдық беруді қамтиды, бұл түлектерді еңбек нарығында сұранысқа ие етеді. Жалпы алғанда, бұл бағдарлама жоғары білікті мамандарды дайындау мақсатында қарастырып жасалынған.

3. Асылбек Г. – 2023 жылғы түлек. Аграрлық техника және технология білім беру бағдарламасын бітірген түлегімін. 2024 - 2028 жылға жасаған білім беру бағдарламасына қазіргі уақытта нарыққа керекті деп санаймын.

4. Рақымжанова А. - АТТ-21-01К тобының студенті. 2024 – 2028 жылға жасаған білім беру бағдарламаларыңыз өте дұрыс жасалған деп ойлаймын.

КАУЛЫ ЕТТІ:

1. 2024 – 2028 оқу жылдарына арналған 6В08701 – «Аграрлық техника және технология» білім беру бағдарламасының оқу жоспары «Инженерлік-техникалық» факультетінің академиялық комитетіне талқылауға ұсынылсын.

Төраға Жумагулов Ж.Б.

Хатшы Дюсенбиева А.Х.

«ҚАЗАҚ ҰЛТТЫҚ АГРАРЛЫҚ ЗЕРТТЕУ УНИВЕРСИТЕТІ»
коммерциялық емес акционерлік қоғамы
«Инженерлік-техникалық» факультетінің
Кеңес мәжілісінің

№6 ХАТТАМАСЫНАН КӨШІРМЕ

Алматы қаласы **27 қаңтар 2024 жыл**

Кеңестің төрайымы – Л.Алдибаева
Хатшы – Н.Самбеткулова
Кеңес мүшелері: Барлығы 17 адам
Қатысқандар: 16 адам

КҮН ТӘРТІБІ:

5. Әртүрлі мәселелер. 2024-2028 жылдарына арналған 6В08701 – «Аграрлық техника және технология» білім беру бағдарламасын талқылау.

ТЫҢДАЛДЫ: Факультет Кеңесінің төрайымы физика-математика ғылымдарының кандидаты, қауымдастырылған профессор Л.Алдибаева күн тәртібіндегі мәселе бойынша сөйледі. Факультетіміздегі 2024-2028 жылдарға арналған 6В08701 – «Аграрлық техника және технология» білім беру бағдарламаларын қарастырып, талқылау үшін сөз кезегін кафедра меңгерушілеріне берді.

СӨЗ СӨЙЛЕГЕНДЕР:«Аграрлық техника және механикалық инженерия» кафедрасының меңгерушісі Жумагулов Ж.Б.: 6В08701 – «Аграрлық техника және технология» білім беру бағдарламасы, жұмыс оқу жоспары студенттерге сапалы білім беруді қамтамасыз ету үшін оқу бағдарламасын, пәндердің мазмұнын, оқу нәтижелерін және басқа материалдарды қамтитындығы туралы айтты. Сондай-ақ, білім беру бағдарламасы әрбір нақты құзыреттіліктің тұжырымдамасын, оның «білімін», «дағдысын» және оқу нәтижелері түріндегі құрылымын, сондай-ақ студент-түлектің құзыреттілігін қалыптастырудың белгіленген деңгейлерін қамтитын құзыреттілік паспорттарының жиынтығын қамтитыны туралы атап өтті. Арнайы жұмыс берушілердің, бітіруші түлектердің және білім алушылардың пікірлері ескеріліп, бірлесіп қарастырылғанын айтып факультет кеңес мүшелеріне ұсынды.

Академиялық комитет төрағасы - Ибишев Умирбай Шарбекович 6В08701 – «Аграрлық техника және технология» білім беру бағдарламасы саласындағы жоғары білікті мамандарды даярлауға бағытталған. Оның артықшылықтары кең профильді дайындықты, практикалық бағыттылықты, заманауи технологиялар мен әдістерге басымдық беруді қамтиды. Жаңадан енгізілген пәндер кредиттік технологиясының оқыту ережесінің басты талаптарға сай екенін айтып өтті.

Қарастыруға ұсынылған 2024-2028 оқу жылдарына арналған білім беру бағдарламасын Кеңес мүшелері бірауыздан мақұлдап, Университеттің Ғылыми Кеңесіне қарастыруға ұсынды.

ҚАУЛЫ ҚАБЫЛДАНДЫ: 2024-2028 оқу жылдарына арналған 6В08701 – «Аграрлық техника және технология» білім беру бағдарламалардың өзгертулерін қарастырып, талқылау үшін Университеттің Ғылыми Кеңесіне ұсынылсын.

Төрайым **Л. Алдибаева**

Хатшы **Н. Самбеткулова**

Хаттама көшірмесін растаймын: Н. Самбеткулова