

S.Seifullin Kazakh Agrotechnical University
 Dean of the Faculty of Engineering
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CATALOG OF ELECTIVE DISCIPLINES

For students in the direction of preparation 6B087 Agricultural engineering
 Brief description of the elective disciplines of the educational program

EPC	EP	Form of education	The name of discipline	Code of subject	Discipline cycle	Component	Number of credits	Level of training	Cafedra	Course	Academic period	Pre-requisites	Post-requisites	Brief content of the discipline	Key learning outcomes	Name of the alternative discipline
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Fundamentals of crop production	OR 2200	BS	Elective subjects	3.0	Bachelor	Agriculture and plant growing	2	1	Botany school course	Harvesting machines, Mechanization of cattle-breeding farm, Mechanization of harvesting and storage of agricultural products, Operation of the machine and tractor fleet, Precision agriculture basics, The agro technological machines	To form students' knowledge, skills and abilities in morphology, biology, ecology and technology for growing field, vegetable and fruit crops in various agro-ecological conditions. The conception of plant growth and development, growth phases and stages of organogenesis, their agronomic significance. Fundamentals of breeding and selection, seed science and crop production.	Demonstrate the skills of designing and calculating the structures of agrotechnological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products.	Fundamentals of agronomy
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Fundamentals of agronomy	OA 2223	BS	Elective subjects	3.0	Bachelor	Agriculture and plant growing	2	1	Basics of organization of wheeled and caterpillar machines	Fundamentals of animal husbandry, Harvesting machines, Mechanization of cattle-breeding farm, Mechanization of harvesting and storage of agricultural products, Operation of the machine and tractor fleet, Precision agriculture basics, The agro technological machines	Formation of knowledge of agricultural crops, conditions and technologies of their cultivation. Types, varieties and varieties of cultivated plants, the peculiarities of growing individual crops taking into account their biological characteristics. The main cultivated plants, their origin, the possibilities of economic use of cultivated plants, the main techniques and methods of crop production.	Demonstrate the skills of designing and calculating the structures of agrotechnological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products.	Fundamentals of crop production
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Computer graphics	KG 2200	BS	Elective subjects	4.0	Bachelor		2	2	School course - Informatics	Computer-aided design	Study of computer programs CorelDRAW, Photoshop. The use of these programs in architectural graphics in the design of drawings of architectural and design objects, advertising design. Acquisition of skills in processing perspective images of architectural structures, drawing entourage	Demonstrate the skills of designing and calculating the structures of agrotechnological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development. To show the ability of logical and critical thinking, mathematical modeling of real processes and phenomena, calculations of internal combustion engines, schematics, design development, technological maps for the production of agricultural products	Draft execution automation.
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Draft execution automation	AVCh 2217	BS	Elective subjects	4.0	Bachelor	Technical mechanics	2	2	Basics of organization of wheeled and caterpillar machines, Descriptive geometry and engineering graphics, Information and communication technologies	Computer-aided design, Design and organization of technical service, Fundamentals of design and build of agricultural machinery and equipment	Study of the basic principles and methodologies of modern computer-aided design when creating electronic tools, methods and techniques for solving problems in the main sections of the discipline using design automation tools, creation of mathematical models of construction, automation of preparation and release of design and technological documentation: SolidWorks systems, Compass 3D, Altium Designer, T-Flex CAD.	Demonstrate the skills of designing and calculating the structures of agrotechnological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development.	Computer graphics

6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	CNC system (Fundamentals of Mechatronics)	SCHOM 2200	BS	Elective subjects	4.0	Bachelor	Technical machines and equipment	2	3	Basics of theory probabilities and mathematical statistics, Descriptive geometry, Engineering mathematics, Materials in engineering design, Mathematics	Basics of design, Failure analysis and repair of machines, Reliability and repair of machines	Study of the structures and principles of integration of mechatronic and robotic systems, mechatronic rotational motion modules based on high-torque motors features of setting control tasks for mechatronic and robotic systems, definition and terminology of mechatronics. Terms and definitions of robotics. Structure and principles of integration of mechatronic and robotic systems	Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities.	Fundamentals of robotics
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Fundamentals of robotics	OR 2221	BS	Elective subjects	4.0	Bachelor	Computer science	2	3	Descriptive geometry and engineering graphics, Hydropneumatic machines and drives, Information and communication technologies, Materials in engineering design	Basics of design, Failure analysis and repair of machines, Fundamentals of design and build of agricultural machinery and equipment	To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities	CNC system (Fundamentals of Mechatronics)	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Computer-aided design technology machines	STM 2200	BS	Elective subjects	4.0	Bachelor	Technical machines and equipment	2	3	Descriptive geometry and engineering graphics, Engineering mathematics, Information and communication technologies, Materials in engineering design, Mathematics	Basics of design, Fundamentals of design and build of agricultural machinery and equipment	Demonstrate the skills of designing and calculating the structures of agrotechnological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development.	Computer-aided design	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Computer-aided design	AP 2218	BS	Elective subjects	4.0	Bachelor	Land management	2	3	Descriptive geometry and engineering graphics, Information and communication technologies	Basics of design, Design and organization of technical service, Fundamentals of design and build of agricultural machinery and equipment, Mechanics of materials	Analyze in a logical and quantitative way the conditions for the development of production and evaluate the competitiveness of created products on the principles of engineering, study innovative entrepreneurship and anti-corruption culture, formulate inventions	Computer-aided design technology machines	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Basics of economics and law	OEP 2101	GER	Elective subjects	5.0	Bachelor	Economy	2	3	Cultural studies and psychology, Political science and sociology	Design and organization of technical service, Engineering economics, Patent Law, Production management	The discipline promotes knowledge of the subject of economic theory and methods of research, the basis of public production and forms of public economy, the mechanism of functioning of the market system, production, costs and income of the firm, national economy. Give an assessment of economic growth and instability of the market economy, inflation and unemployment as manifestations of economic instability. Demonstrate knowledge and skills in the financial and monetary credit system in the national economy and economic security. To master the basics of the theory of the state and law, the basics of constitutional, administrative, civil, labor, family, criminal law.	Basics of anti-corruption culture, Innovative entrepreneurship, Introduction to leadership in education, Labor protection and basics of life safety	

6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Labor protection and basics of life safety	QTOBZh 2110	GER	Elective subjects	5.0	Bachelor	Mechanization of technological processes	2	3	School course - Labor protection	Design and organization of technical service, Fuel lubricants and technical operation, Harvesting machines	The discipline contributes to the formation of students' knowledge, practical skills to create safe and harmless living conditions, to prevent the causes and prevention of dangerous situations, to protect the population and production personnel and objects of the national economy from the possible consequences of emergency situations. It also studies the peculiarities of labor protection for women and youth, supervision and control of the implementation of labor protection legislation and responsibility for violation of labor protection requirements.	Make calculations in heat engineering, thermodynamics and electrical engineering; choose the correct operation of electrical and thermal equipment, analyze hazardous and harmful production factors, study the environment and life safety requirements	Basics of anti-corruption culture, Basics of economics and law, Innovative entrepreneurship, Introduction to leadership in education
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Innovative entrepreneurship	IP 2111	GER	Elective subjects	5.0	Bachelor	Economy	2	3	Cultural studies and psychology, Information and communication technologies	Engineering economics, Mechanization of harvesting and storage of agricultural products, Modern technologies and equipment for the diagnostics of agriculture machinery, Production management	Form students' knowledge of the fundamental concepts of innovative development, modern approaches to the implementation of entrepreneurial activity in the field of new technologies to ensure the competitiveness of an innovative enterprise on the market. Understand the economic essence of innovative entrepreneurship, business planning, venture financing and know the types of firms with venture capital. Possess skills in risk management, human resource management, innovative management and innovative processes, as a condition for economic growth	Analyze in a logical and quantitative way the conditions for the development of production and evaluate the competitiveness of created products on the principles of engineering, study innovative entrepreneurship and anti-corruption culture, formulate inventions	Basics of anti-corruption culture, Basics of economics and law, Introduction to leadership in education, Labor protection and basics of life safety
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Basics of anti-corruption culture	OAK 2112	GER	Elective subjects	5.0	Bachelor	Economy	2	3	Cultural studies and psychology, Political science and sociology	Basics of patenting and professional creative, Production management	The discipline examines the theoretical and methodological foundations of the concept of "corruption" and examines the improvement of socio-economic relations of the Kazakh society as a condition for combating corruption, psychological features of the nature of corrupt behavior, formation of anti-corruption culture, features of formation of anti-corruption culture of youth, ethnic features of formation of anti-corruption culture, moral and ethical responsibility for corruption in various spheres. Discipline allows you to learn about legal responsibility for corruption offenses	Analyze in a logical and quantitative way the conditions for the development of production and evaluate the competitiveness of created products on the principles of engineering, study innovative entrepreneurship and anti-corruption culture, formulate inventions	Basics of economics and law, Innovative entrepreneurship, Introduction to leadership in education, Labor protection and basics of life safety
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Introduction to leadership in education	VLO 2113	GER	Elective subjects	5.0	Bachelor	Профессиональное образование	2	3	Cultural studies and psychology, History of Kazakhstan, Philosophy, Political science and sociology	Production management	The discipline analyzes and studies the model of effective communication of the leader, methods of management in critical situations, methods of work in the management team and the principle of distribution of roles in the team, methods of effective control and motivation of training. It provides an opportunity to study the theory of leadership qualities and at the same time the concept of leadership behavior (three leadership styles (K. Levin), research at the University of Ohio, research at the University of Michigan, management system (R. Likert), management grid (Blake and Mouton), concept of reward and punishment, substitute leadership (S. Kerr and J. Gerniet).	To organize highly efficient operation of machines, apparatus, machinery and technological equipment in production, to show leadership qualities	Basics of anti-corruption culture, Basics of economics and law, Innovative entrepreneurship, Labor protection and basics of life safety

6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Electrical engineering and the basics of electronics	EOE 3200	BS	Elective subjects	4.0	Bachelor	Electro-supply	3	1	Basics of organization of wheeled and caterpillar machines, Physics	Fundamental of energy saving, Heat engineering, Mechanization of harvesting and storage of agricultural products, The agro technological machines	The study of methods for calculating electrical circuits and electromagnetic fields, the ability to apply this knowledge to solve practical problems in electrical engineering, the basic laws and principles of theoretical electrical engineering and electronic technology in professional activities, the properties of conductors, semiconductors, electrical insulation, magnetic materials, methods for calculating and measuring the basic parameters of electrical, magnetic circuits.	To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities. To study the physical properties of working fluids, the structure and principle of operation of hydro- and pneumatic drives of devices and apparatuses, the basics of thermodynamics and heat engineering, elements and parameters of electrical circuits, energy conservation and energy efficiency of production	Electric machines and drives
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Electric machines and drives	EMP 3225	BS	Elective subjects	4.0	Bachelor	Exploitation of electro-equipment	3	1	Basics of organization of wheeled and caterpillar machines, Information and communication technologies, Physics	Basics of design, Failure analysis and repair of machines, Fundamental of energy saving, Mechanization of breeding farm, Mechanization of harvesting and storage of agricultural products, Modern technologies and equipment for the diagnostics of agriculture machinery, The agro technological machines	Make calculations in heat engineering, thermodynamics and electrical engineering, choose the correct operation of electrical and thermal equipment, analyze hazardous and harmful production factors, study the environment and life safety requirements. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities	Electrical engineering and the basics of electronics	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Fundamentals of animal husbandry	OZh 3200	BS	Elective subjects	3.0	Bachelor	Technology of production of products of stock-raising	3	1	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Chemistry, Physics, Precision agriculture basics	Mechanization of cattle-breeding farm, Mechanization of agricultural products, Operation of the machine and tractor fleet, The agro technological machines	Demonstrate the skills of designing and calculating the structures of agroecological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. To make an economic assessment of the main production resources on the basis of a critical assessment of the forms and methods of modern management and regulatory legal documents, procedures for creating small and medium-sized businesses in agriculture, in the field of animal husbandry and agroecological services.	Harvesting machines	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Harvesting machines	UM 3224	BS	Elective subjects	3.0	Bachelor	Mechanization of technological processes	3	1	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Hydropneumatic machines and drives, Precision agriculture basics	Failure analysis and repair of machines, Fuel lubricants and technical operation, Machine Details, Mechanization of cattle-breeding farm, Mechanization of agricultural products, Modern technologies and equipment for the diagnostics of agriculture machinery, Operation of the machine and tractor fleet, Reliability and repair of machines, The agro technological machines	Demonstrate the skills of designing and calculating the structures of agroecological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. To demonstrate organizational skills, leadership qualities and skills in creating safe, harmless living conditions, managing agroecological machines in production conditions and perform installation and repair, commissioning of mechanisms and working bodies of machines. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities.	Fundamentals of animal husbandry	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Measuring Systems	IS 3200	BS	Elective subjects	4.0	Bachelor	Стандарты зная, метрологи я и сертификация	3	1	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Engineering mathematics, Materials in engineering design	Failure analysis and repair of machines, Internal Combustion Engines and Future Alternatives, Machine Details, Reliability and repair of machines	Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development	Interchangeability of standardization and technical measurements	

6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Interchang eability of standardiz ation and technical measurem ents	VSTI 3220	BS	Elective subjects	4.0	Bachelo r	Стандартн метрологи я и сертифика ция	3	1	Agroecultural machines, wheeled and caterpillar machines, Descriptive geometry and engineering graphics, Engineering mathematics, Professionally-oriented foreign language	Basics of design, Failure analysis and repair of machines, Fuel lubricants and technical operation, Machine Details, Reliability and repair of machines, Tractors and cars	The studying of modern worldview concepts and principles in the field of interchangeability, standardization and technical measurements. The acquisition of deep knowledge and solid skills for their application in practice. Familiarization of students with the basics of standardization and interchangeability and development of students' skills in solution to a questions of practical use of reference technical literature in the production, repair and operation of equipment.	Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development.	Measuring Systems
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Fundament al of energy saving	OE 3200	BS	Elective subjects	4.0	Bachelo r	Exploitiatio n electro- equipment	3	2	Chemistry, Hydropneumatic machines and drives, Physics	Design and organization of technical service, Engineering economics, Internal Combustion Engines and Future Alternatives, Technical service in agriculture	To study the physical properties of working fluids, the structure and principle of operation of hydro- and pneumatic drives of devices and apparatuses, the basics of thermodynamics and heat engineering, elements and parameters of electrical circuits, energy conservation and energy efficiency of production	Heat engineering	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Heat engineerin g	Тep 3226	BS	Elective subjects	4.0	Bachelo r	Теплоэнер гетика	3	2	Chemistry, Physics	Basics of the theory and calculation of the internal combustion engine, Fundamentals of design and build of agricultural machinery and equipment, Mechanics of materials, Mechanization of cattle-breeding farm	To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities. Choose the methodology and methodology of mathematical modeling and analysis of the basic physical and mechanical properties of structural elements and devices, apply the laws of mechanics of materials in the development of projects in professional activities. To study the physical properties of working fluids, the structure and principle of operation of hydro- and pneumatic drives of devices and apparatuses, the basics of thermodynamics and heat engineering, elements and parameters of electrical circuits, energy conservation and energy efficiency of production	Fundamental of energy saving	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Modern technologi es and equipment for the diagnostics of agriculture machinery	STSDST 3300	AS	Elective subjects	4.0	Bachelo r	Mechaniza tion of technologi cal processes	3	2	Agroecultural machines, wheeled and caterpillar machines, Chemistry, Hydropneumatic machines and drives, Information and communication technologies, The agro technological machines	Design and organization of technical service, Mechanization of harvesting and storage of agricultural products, Operation of the machine and tractor fleet, Technical service in agriculture	To demonstrate organizational skills, leadership qualities and skills in creating safe, harmless living conditions, managing agrotechnological machines in production conditions and perform installation and repair, commissioning of mechanisms and working bodies of machines. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities.	Fuel lubricants and technical operation	

6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Fuel lubricants and technical operation	TSMITZh 3308	AS	Elective subjects	4.0	Bachelor	Technical service	3	2	Agreicultural machines, Basics of organization of wheeled and caterpillar machines, Chemistry, Hydropneumatic machines and drives, Physics	Basics of the theory and calculation of the internal combustion engine, Failure analysis and repair of machines, Internal Combustion Engines and Future Alternatives, Mechanization of cattle-breeding farm, Mechanization of harvesting and storage of agricultural products, Reliability and repair of machines, Technical service in agriculture, Tractors and cars	Possession of theoretical and practical knowledge about the properties of fuels, oils and lubricants. Conducting tests of petrochemical liquids to assess the quality of petroleum products. Determination of technical means for determining the parameters of technological processes and product quality. Classification and features of the use of motor oils, gasoline, diesel fuels and gaseous fuels.	Choose the methodology and methodology of mathematical modeling and analysis of the basic physical and mechanical properties of structural and fuel-lubricants, apply the laws of mechanics of materials in the development of projects in professional activities. To study the physical properties of working fluids, the structure and principle of operation of hydro- and pneumatic drives of devices and apparatuses, the basics of thermodynamics and heat engineering, elements and parameters of electrical circuits, energy conservation and energy efficiency of production	Modern technologies and equipment for the diagnostics of agriculture machinery
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Internal Combustion Engines and Future Alternatives	DVSPA 4300	AS	Elective subjects	5.0	Bachelor	Mechanization of technological processes	4	1	Basics of organization of wheeled and caterpillar machines, Basics of theory probabilities and mathematical statistics, Engineering mathematics, Engineering mechanics (Statics, Dynamics), Hydropneumatic machines and drives	Design and organization of technical service, Failure analysis and repair of machines, Fundamentals of design and build of agricultural machinery and equipment, Tractors and cars	Formation of a system of competencies for solving professional tasks on the effective use of car engines and mastering the methodology and skills of independently solving problems in the design, calculation and evaluation of technical and economic indicators of internal combustion engines, the study of alternative engines, traction dynamics and fuel efficiency, dynamic characteristics of the car.	To show the ability of logical and critical thinking, mathematical modeling of real processes and phenomena, calculations of internal combustion engines, schematics, design development, technological maps for the production of agricultural products. Choose the methodology and methodology of mathematical modeling and analysis of the basic physical and mechanical properties of structural and fuel-lubricants, apply the laws of mechanics of materials in the development of projects in professional activities	Basics of the theory and calculation of the internal combustion engine
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Basics of the theory and calculation of the internal combustion engine	OTRDYS 4306	AS	Elective subjects	5.0	Bachelor	Mechanization of technological processes	4	1	Basics of organization of wheeled and caterpillar machines, Basics of theory probabilities and mathematical statistics, Engineering mathematics	Failure analysis and repair of machines, Reliability and repair of machines, Technical service in agriculture, Tractors and cars	Formation of students' competencies for solving professional tasks on the effective use of internal combustion engines and mastering the methodology and skills of independently solving problems in the design, calculation and evaluation of technical and economic indicators of internal combustion engines. Calculation of the main parameters of the working cycle and engine indicators, dynamic calculation of engine power mechanisms.	Internal Combustion Engines and Future Alternatives	
B183 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Production management	PM 4203	BS	Elective subjects	3.0	Bachelor	Management and marketing	4	1	Basics of theory probabilities and mathematical statistics, Cultural studies and psychology, Engineering mathematics	Design and organization of technical service, Fundamentals of design and build of agricultural machinery and equipment, Mechanization of harvesting and storage of agricultural products, Technical service in agriculture	Possess a culture of thinking, generalization and analysis of information, methods of making strategic, tactical and operational decisions in the management of operational (production) activities of organizations, principles of production management and personnel management. Formation of knowledge in the field of production management at the enterprise, to reveal the main trends in improving production management in a market economy, to develop skills of independent creative work on the rationalization of processes and methods of production management.	To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities. To make an economic assessment of the main production resources on the basis of a critical assessment of the forms and methods of modern management and regulatory legal documents, procedures for creating small and medium-sized businesses in agriculture, in the field of animal husbandry and agrotechnical services	Engineering economics

«Agroengi- neering»	6B08701 - «Agroengi- neering»	Full-time (bachelor 4 years) trimester	Engineering economics	IE-4227	BS	Elective subjects	3.0	Bachelor	Management and marketing	4	1	Basics of theory probabilities and mathematical statistics, Engineering mathematics, Mathematics, Mechanization of cattle- breeding farm	Design and organization of technical services, Fundamentals of design and build of agricultural machinery and equipment, Mechanization of harvesting and storage of agricultural products, Patent Law	Formation of students' understanding of the need to take into account the time value of money when making engineering decisions and analyzing projects, the concept of economic equivalence of multi-time cash flows, the relationship between nominal and effective rates of return, the ability to apply tabular factors (functions of money) in engineering and economic calculations, demonstrate the ability to correctly take into account the change in the time value of money when analyzing cash flows corresponding to loans, loans and investments, ensure the economic efficiency of decisions made when performing engineering projects.	To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities. To make an economic assessment of the main production resources on the basis of a critical assessment of the forms and methods of modern management and regulatory legal documents, procedures for creating small and medium-sized businesses in agriculture, in the field of animal husbandry and agrotechnical services.	Production management
B183 - «Agroengi- neering»	6B08701 - «Agroengi- neering»	Full-time (bachelor 4 years) trimester	Machine Details	DM 4209	BS	Elective subjects	4.0	Bachelor	Technical mechanics	4	1	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Basics of theory probabilities and mathematical statistics, Descriptive geometry and engineering graphics Engineering mathematics, Hydropneumatic machines and drives, Mechanics of materials, Mechanization of cattle-breeding farm, The agro technological machines	Failure analysis and repair of machines, Fundamentals of design and build of agricultural machinery and equipment, Mechanization of harvesting and storage of agricultural products, Reliability and repair of machines, Technical service in agriculture	Mastering the knowledge, skills and abilities necessary for the subsequent study of special engineering disciplines. Features of the development of design of modern agricultural machinery, classification of machine parts, materials of agricultural machinery, mechanical transmissions, working principle and calculation methods, detachable and non- removable joints, bearings, shafts and axles, couplings, classification and calculation methods of parts, assemblies of general mechanical machines for solving professional tasks.	Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development.	Basics of design
B183 - «Agroengi- neering»	6B08701 - «Agroengi- neering»	Full-time (bachelor 4 years) trimester	Basics of design	OK 4222	BS	Elective subjects	4.0	Bachelor	Technical mechanics	4	1	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Descriptive geometry and engineering graphics, Engineering mathematics, Engineering mechanics (Statics, Dynamics), Information and communication technologies, Materials in engineering design, Mechanics of materials, Theory and evaluation of agricultural machines	Basics of patenting and professional creative, Design and organization of technical service, Failure analysis and repair of machines, Fundamentals of design and build of agricultural machinery and equipment, Reliability and repair of machines, Tractors and cars	The development of students' elementary skills in the design and design of mechanisms and machine parts. Mastering by students of the provisions of the system of standards for the implementation, execution, storage and use of design documentation, the theoretical foundations and requirements of ESKD standards. Fundamentals of designing mechanisms for general machine building, purpose and development of practical skills in solving complex design problems.	Demonstrate the skills of designing and calculating the structures of agroecological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development. To show the ability of logical and critical thinking, mathematical modeling of real processes and phenomena, calculations of internal combustion engines, schematics, design development, technological maps for the production of agricultural products. Choose the methodology and methodology of mathematical modeling and analysis of the basic physical and mechanical properties of structural and fuel-lubricants, apply the laws of mechanics of materials in the development of projects in professional activities.	Machine Details

«Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Design and organizatio n of technical service	POTS 4300	AS	Elective subjects	5.0	Bachelo r	Mechaniza tion of technologi cal processes	4	2	Descriptive geometry and engineering graphics, Fundamentals of design and build of agricultural machinery and equipment, Mechanics of materials	Mechanization of harvesting and storage of agricultural products	Mastering the rules of designing technical service facilities of the agro-industrial complex, substantiating the production program of the service enterprise, designing production zones and auxiliary units, design features of service stations, machine- technological stations and repair shops, technical and economic evaluation of design solutions, fundamentals of design of reconstruction, expansion and technical re- equipment of technical service facilities.	Demonstrate the skills of designing and calculating the structures of agrotechnological machines, substantiating the system of machines and equipment for cultivation, harvesting, storage and processing of crop and livestock products. To demonstrate organizational skills, leadership qualities and skills in creating safe, harmless living conditions, managing agrotechnological machines in production conditions and perform installation and repair, commissioning of mechanisms and working bodies of machines. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities.	Technical service in agriculture
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Technical service in agriculture	TSSH 4309	AS	Elective subjects	5.0	Bachelo r	Mechaniza tion of technologi cal processes	4	2	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Hydropneumatic machines and drives, Materials in engineering design, Operation of the machine and tractor fleet, The agro technological machines	Mechanization of harvesting and storage of agricultural products	Formation of engineering thinking, generalizing ideas about the repair of agricultural machinery and equipment, maintenance of the main processes of agricultural production, methods of maintaining machinery and equipment in working condition with minimal losses and the lowest cost of repair and maintenance.	To demonstrate organizational skills, leadership qualities and skills in creating safe, harmless living conditions, managing agrotechnological machines in production conditions and perform installation and repair, commissioning of mechanisms and working bodies of machines. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities	Design and organization of technical service
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Reliability and repair of machines	NRM 4200	BS	Elective subjects	4.0	Bachelo r	Technolog ical machines and equipment	4	2	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Basics of theory probabilities and mathematical statistics, Descriptive geometry and engineering graphics, Engineering mathematics, Hydropneumatic machines and drives, The agro technological machines	Basics of patenting and professional creative, Mechanization of harvesting and storage of agricultural products	The study of the basic concepts and definitions of machine reliability, the theory of friction and wear of machine parts, wear indicators and methods of their measurement, the main factors affecting the friction and wear of machine parts, the student's solution of engineering problems related to the design of technological processes for repairing machines and restoring worn parts, justification of rational methods of restoration and modes of processing parts, minimizing costs and ensuring the competitiveness of repair production.	To demonstrate organizational skills, leadership qualities and skills in creating safe, harmless living conditions, managing agrotechnological machines in production conditions and perform installation and repair, commissioning of mechanisms and working bodies of machines. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities	Failure analysis and repair of machines
B183 - «Agroengi neering»	6B08701 - «Agroengi neering»	Full-time (bachelor 4 years) trimester	Failure analysis and repair of machines	AORM 4219	BS	Elective subjects	4.0	Bachelo r	Technolog ical machines and equipment	4	2	Agroecultural machines, Basics of organization of wheeled and caterpillar machines, Basics of theory probabilities and mathematical statistics, Engineering mechanics (Statics, Dynamics), Mechanics of materials, Mechanization of cattle- breeding farm.	Basics of patenting and professional creative, Mechanization of harvesting and storage of agricultural products	Mastering the basics of technical conditions and rules for the rational operation of transport and transport-technological machines and equipment, the causes and consequences of the termination of their operability, organization of technical inspection and maintenance of equipment, acceptance and development of the introduced technological equipment, drawing up an application for equipment and spare parts, preparation of technical documentation and instructions for the operation and repair of equipment	To demonstrate organizational skills, leadership qualities and skills in creating safe, harmless living conditions, managing agrotechnological machines in production conditions and perform installation and repair, commissioning of mechanisms and working bodies of machines. To study the basic concepts of the laws of engineering mechanics, mechanics of materials, robotics and safety measures. To organize the production process, operation of MTP and maintenance of modern agricultural machinery with the introduction of innovative technologies and with the creation of business entities.	Reliability and repair of machines

6B08701 - «Agroengineering»	Full-time (bachelor 4 years) trimester	Basics of patenting and professional creative	OPPT 4307	AS	Elective subjects	4.0	Bachelor	Mechanization of technological processes	4	3	Cultural studies and psychology; Descriptive geometry and engineering graphics; Foreign language; Information and communication technologies	Possession of stable knowledge on the method of activating creative thinking when creating objects of industrial property, skills of independent patent search, drawing up applications for inventions; conceptual foundations of inventive activity as a modern complex science of intellectual property objects.	Develop technical drawings with the requirements of the ESCD, possess the skills of modern computer-aided design, apply in practice the compliance of the developed projects and technical documentation, and other regulatory documents on the design and calculation of design development. To make an economic assessment of the main production resources on the basis of a critical assessment of the forms and methods of modern management and regulatory legal documents; procedures for creating small and medium-sized businesses in agriculture, in the field of animal husbandry and agrotechnical services. Communicate at a professional level, confirm communication skills to solve problems in the field of professional activity and form a highly educated personality with a broad outlook and an anti-corruption culture of thinking and express academic integrity	Patent Law
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Protocol No. 10 (E) dated June 29, 2022 approved by the Faculty Council

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