S.Seifullin Kazakh Agrotechnical University

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S.Seifullin Kazakh Agrotechnical University
Veterinary and animal husbandry technologies
Akibekov O. S.
"__" _____ 2023г.

CATALOG OF ELECTIVE DISCIPLINES

For students in the direction of preparation 6B051 Biological and related sciences

Brief description of the elective disciplines of the educational program

EPG	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-requisitions	Post-requisitions	Brief content of the discipline	Key learning outcomes	Name of the alternative discipline
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Inorganic and organic chemistry	NOH 1225	BS	Elective subjects	5.0	Bachelor	Физики и химии	1	1	School Chemistry Program	Agricultural biotechnology, Aquaculture biotechnology balicanta, Basics of biotechnology, Biochemistry, Biotechnology in Forestry, Biotechnology of biological products for veterinary, Biotechnology of meat and dairy products, Environmental biotechnology, Gell biotechnology, Industrial biotechnology, Internship, Production of feed additives for farm animals, Veterinary Biotechnology	Knows the basic laws of chemistry, structure and properties of matter, regularities and features of chemical processes, thermodynamics, solutions, properties of elements; understands limit and unsaturated aliphatic hydrocarbons, aromatic hydrocarbons, halogen-Derived hydrocarbons, oxygen-and nitrogen-containing organic compounds: alcohols and esters, aldehydes and ketones, and carboxylic acids; applies general concepts of oxo- and amino acids, amines and diazo compounds.	Prepare and conduct a chemical experiment to study the properties and identify the most important classes of organic, inorganic compounds; determine the physico-chemical constants of substances; use the necessary instruments and laboratory equipment during research, process the results of the experiment.	Analytical and physical and colloid chemistry
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Analytical and physical and colloid chemistry	AFH 2206	BS	Elective subjects	5.0	Bachelor	Физики и химии	1	1	School Chemistry Program	Agricultural biotechnology, Basics of biotechnology, Biochemistry, Biotechnology of biological products for veterinary, Biotechnology of meat and dairy products, Biotechnology recycling of agricultural products, Environmental biotechnology, Gell biotechnology, General Immunology, Industrial biotechnology, Internship, Physiology, Pregraduation practice, Production of feed additives for farm animals, Veterinary Biotechnology	The course forms students' ideas about the theoretical foundations of analytical chemistry, its relationship with other applied sciences and practical relevance. Introduces recent achievements in the field of analytical chemistry, with modern methods of detection, separation and determination of chemicals. Discipline provides the students with a comprehensive picture of the analysis methods used for rapid and holistic assessment of the content of chemicals in environmental objects.	Prepare and conduct a chemical experiment in the UK. determine physicochemical exposure constants; to use experimental instruments and laboratory equipment in conducting research, conducting the results of the experiment.	Inorganic and organic chemistry
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Higher mathematics	VM 1226	BS	Elective subjects	5.0	Bachelor	Higher mathematics	1	2	School curriculum of mathematics, algebra	Basics of Biostatistics and Bioinformatics, Basics of biotechnology, Business activities, Innovative entrepreneurship	The discipline considers the basics of mathematical analysis. Fundamentals of probability theory and mathematical statistics. Formal and applied problems of matrix algebra, analytical geometry and mathematical analysis, collection and processing of statistical data, information theory, number theory Differential and integral calculus of function	Solve formal and applied problems of matrix algebra and mathematical analysis, build mathematical models; apply probabilistic and statistical methods in solving applied problems, collect and process statistical data	Биофизика

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Biophysics	BF 1211	BS	Elective subjects	5.0	Bachelor	Physics and Chemi	1	2	School program of physics	Agricultural biotechnology, Aquaculture biotechnology balicanta, Basics of Biostatistics and Bioinformatics, Biotechnology of biological products for veterinary, Biotechnology recycling of agricultural products, Industrial biotechnology, Production of feed additives for farm animals, Научно-исследовательская работа с основами патентоведения	Biophysics considers the physical and chemical phenomena occurring in living organisms, which underlie elementary life processes, as well as the action of physical factors on the body The main task of biophysics is to study the processes associated with the transformation of the chemical energy of the components of living matter into other types of energy - mechanical and osmotic work, electrical and radiation energy	Forming the competencies of biophysical phenomena in animal organisms.	Higher mathematics
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Basics of economics and law	OEP 2112	GER	Elective subjects	5.0	Bachelor	Economy	2	1	History of Kazakhstan, higher mathematics, philosophy	Business activities, Innovative entrepreneurship	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.	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, Ecology and life safety, Introduction to leadership in education, The labour safety and safety of the life activity
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Introduction to leadership in education		GER	Elective subjects	5.0	Bachelor	Профессиональное образование	2	1	School curriculum of the history of Kazakhstan, world history, social science, self-knowledge, jurisprudence, political science	Internship, Philosophy	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. Germier)	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, Ecology and life safety, The labour safety and safety of the life activity

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Basics of anti-corruption culture		GER	Elective subjects	5	0	Bachelor	Economy	2	1	Fundamentals of Economics and Law, Philosophy, Cultural Studies and Political Science	Business activities, Innovative entrepreneurship	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, Ecology and life safety, Introduction to leadership in education, The labour safety and safety of the life activity
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	The labour safety and safety of the life activity	OTOBZh 4209	GER	Elective subjects	5	0	Bachelor	Mechanization of technological processes	2	1	School program of physics, labor protection	Agricultural biotechnology, Biotechnology of biological products for veterinary, Biotechnology recycling of agricultural products, Environmental biotechnology, Industrial biotechnology, Internship, Microbiology and Virology, Practical training, Pregraduation practice, Production of feed additives for farm animals, Veterinary Biotechnology, Zooanthroponosi	Formation of students knowledge, practical skills and abilities to create safe and healthy working conditions, to prevent the causes and conditions the emergence of a dangerous situations, to protect the population and production staff of national economy objects from the consequences of possible emergencies. The specific features of labor protection for women and youth, supervision and control of the implementation of health and safety legislation and liability for violations of the requirements of occupational safety	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, Ecology and life safety, Introduction to leadership in education
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Ecology and life safety		GER	Elective subjects	5	0	Bachelor	Ecology	2	1	Disciplines of the school curriculum	Agricultural biotechnology, Biotechnology recycling of agricultural products, Environmental biotechnology, Environmental problems in agro-biotechnology, Industrial biotechnology, Internship, Pregraduation practice, Production of feed additives for farm animals	The discipline studies the laws of interaction between organisms and their habitats, the laws of development, the preservation of human health and life in the technosphere, protection from the dangers of man-made and natural origin and the creation of comfortable living conditions.	Theoretical and methodological foundations of the concept of "corruption" Improving the socio-economic relations of Kazakhstan society as a condition for countering corruption Psychological features of the nature of corrupt behavior Formation of anti-corruption culture Features of the formation of anti-corruption culture of youth Ethnic features of the formation of anti-corruption culture Moral and ethical responsibility for corruption in various fields. Legal liability for corruption offenses	Basics of anti-corruption culture, Basics of economics and law, Introduction to leadership in education, The labour safety and safety of the life activity

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Basics of Biostatistics and Bioinformatics	OBB 2200	BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	2	3	Information and communication technologies, algebra, higher mathematics	Agricultural biotechnology, Animal Biotechnology, Aquaculture biotechnology balicanta, Biotechnology in Forestry, Biotechnology of meat and dairy products, Biotechnology of plants, Biotechnology ofmicroorganisms, Biotechnology recycling of agricultural products, Business activities, Environmental biotechnology, Environmental problems in agro-biotechnology, Gell biotechnology, General Immunology, Industrial biotechnology, Innovative entrepreneurship, Internship, Pregraduation practice, Veterinary Biotechnology, Zooanthroponosi	Biological information, statistical processing of measurement results in biological research. Sequencing technology. Microsoft Excel. Excel package features. The main categories of statistical analysis in Microsoft Excel, Microsoft Access database. Processing of the results of serological studies. Deciphering the genetic code electronic resources NCBI. The possibilities of using the program BLAST. Acquaintance with the Galaxy web platform	Apply probabilistic and statistical methods in solving applied problems, collect and process statistical data. Be proficient in working with software used in the analysis of biological data, engage in research and biotechnological practice using the methods of biostatistics and bioinformatics; process and analyze the results of their own research when performing term papers and theses.	Research work with the basics of patent
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Research work	NIROP 2215	BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	2	3	Fundamentals of Economics and Law, Fundamentals of Biotechnology	Environmental biotechnology, Industrial biotechnology, Internship, Pregraduation practice, Veterinary Biotechnology	Methodological foundations of scientific knowledge. Forms and types, theoretical foundations, basic research methods used in the field of biological sciences. Experiment. Stages of research and their sequence. The choice of research topic, analysis and synthesis of research results. Methods of collecting and studying patent information.	Know the methodological foundations of scientific knowledge, the main methods of scientific research and patenting used in the field of biological sciences	Basics of Biostatistics and Bioinformatics
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Production of feed additives for farm animals	PKDDSZh 2314	AS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	2	3	Basics of biotechnology, Biochemistry, Microbiology and Virology, Molecular genetics and genetic engineering	Agricultural biotechnology, Aquaculture biotechnology balicanta, Biotechnology of plants, Biotechnology ofmicroorganisms, Biotechnology recycling of agricultural products, Environmental problems in agro-biotechnology, Gell biotechnology, General Immunology, Industrial biotechnology, Internship, Pregraduation practice, Veterinary Biotechnology	Production of feed additives for farm animals and birds. Types of dietary supplements, raw materials of plant, animal, mineral origin and its nutritional value for the formulation of bio-feeds and a creation of food supply. The range and quality of bio-feeds; theoretical foundations of processes that determine the technology of bio-feed production. Methods for compiling feed formulations and assessing their nutritional value. Progressive innovative biomix feed technology production; the current state and prospects of development of the production of bio-feeds. Selection of raw materials according to the recipe of a given bio-feed and determination of nutritional value, determination of technological efficiency of the main equipment, individual operations,	Possess advanced technologies for the manufacture of feed additives for animals; Possess skills in the manufacture of biofeeds, apply resource-saving technologies in production. Know the methods of cultivating isolated tissues and organs and the effectiveness of their use in plant biotechnology.	Biotechnology of biological products for veterinary

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Biotechnology of biological products for veterinary		AS	Elective subjects	5.0	Bachelor	Microbiology and biotechnology	2	3	Basics of biotechnology, Biochemistry, Microbiology and Virology, Molecular genetics and genetic engineering	Agricultural biotechnology, Animal Biotechnology, Aquaculture biotechnology balicanta, Biotechnology ofmicroorganisms, Biotechnology recycling of agricultural products, Gell biotechnology, General Immunology, Industrial biotechnology, Internship, Pregraduation practice, Veterinary Biotechnology	The basic principles of industrial technology biopreparations. Technology of biosynthesis of water-soluble and fat-soluble vitamin-active compounds with coenzyme catalytic functions. L-amino acid biosynthesis technology. Technology of industrial biosynthesis of biologics of antibiotics. Technology of production of protein biopreparations. Technology for production of protein feed biomass of various substances. Features of technology of microbial lipids.	To acquire skills in the basics of biosafety when working with biomaterial of general epizootology, technology for the manufacture of veterinary preventive and diagnostic biological products. Know the methods of their control, the methods of genetic engineering used in the creation of new generation diagnosticums and vaccines. Own the technology of manufacturing biological products based on modern technologies in accordance with the international system of requirements and standards, the main regulatory documents related to the manufacture, quality control, storage and use of biological products	Production of feed additives for farm animals
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Aquaculture biotechnology balicanta	BAR 3229	BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	1	Basics of biotechnology, Biochemistry, Microbiology and Virology, Molecular biology, Molecular genetics and genetic engineering, Morphology, Physiology, Biochemistry, microbiology and virology, molecular biology, molecular genetics and genetic engineering, morphology	Agricultural biotechnology, Biotechnology ofmicroorganisms, Biotechnology recycling of agricultural products, Environmental biotechnology, Environmental problems in agro-biotechnology, Industrial biotechnology, Internship, Pregraduation practice, Zooanthroponosi	Modern advances in fish aquaculture biotechnology. Using of modern research methods to increase fish productivity, applied aspects of the use of modern methods of biotechnology. Prospects for basic research on genetics of sex, polyploidy, distant hybridization and biology of the development of bony fish. Obtaining transgenic fish with increased growth rates and surrogate fish. Oogony and spermatogonia transplantation methods for surrogate fish		Biotechnology in Forestry
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Biotechnology in Forestry		BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	1	Basics of biotechnology, Biochemistry, Molecular biology, Molecular genetics and genetic engineering, Morphology, Physiology	Agricultural biotechnology, Biotechnology ofmicroorganisms, Biotechnology recycling of agricultural products, Environmental biotechnology, Industrial biotechnology, Internship, Pregraduation practice, Zooanthroponosi	Subject, tasks and methods of biotechnology in forestry. Fundamentals of gene and cell engineering of plants. Plant immunity. Using of in vitro technology in crop production. Cell selection, clonal micropropagation and plant health. Cryopreservation Production of transgenic microorganisms and plants. Plant resistance to phytopathogens, herbicides, insects, abiotic stresses	Use the main organic substances obtained from wood in industry, in forestry, in the pulp-paper and hydrolysis industries.	Aquaculture biotechnology balicanta

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Biotechnology recycling of agricultural products	BUOSP 3249	BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	2	Basics of biotechnology, Biochemistry, Microbiology and Virology	Agricultural biotechnology, Biotechnology of meat and dairy products, Environmental problems in agro-biotechnology, Industrial biotechnology, Internship, Pregraduation practice	Types of conversion, bioconversion and direct bioconversion. The main types of plant materials, enzymes and enzymatic preparations used in bioconversion. A concept of waste production. Scientific and technical solutions of the disposal of industrial waste. Waste-free cycle processing of agricultural raw materials.	Have the skills to use biological methods to characterize and carry out activities for the treatment of wastewater, soil and gas-air emissions. Know the basics of cultivation of microorganisms, technological processes for obtaining biomass and products of microbiological synthesis.	Biotechnology ofmicroorganisms
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Biotechnology ofmicroorganisms		BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	2	Basics of biotechnology, Biotechnology of meat and dairy products, Biotechnology of plants, Gell biotechnology, Microbiology and Virology, Molecular genetics and genetic engineering	Agricultural biotechnology, General Immunology, Industrial biotechnology, Internship, Veterinary Biotechnology, Zooanthroponosi	Basics of microbiological biotechnology and principles of the biotechnological process. Strains-producers of target products and requirements for their storage. Principles and methods of producing producer strains and super-producers. Study of the growth of microorganisms and the effect of pH and temperature of cultivation. Characteristics of producers and technology of the production of microbial protein, organic acids and neutral products, primary metabolites of microorganisms, BAS microbiological synthesis: vitamins, hormones and enzymes, antibiotics and probiotic preparations, classical and modern vaccines. Biotechnological production based on the production of microbial biomass.	Justify the choice of microorganisms, plants or animals as objects for scientific research and practical work with the aim of application in various fields of biotechnology. Use knowledge about microorganisms.	Biotechnology recycling of agricultural products
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Professionally-oriented Foreign Language	POIYa 3216	BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	3	Foreign languag	English for special purposes, Professional English	To form the professional foreign language speech of future specialists to increase the level of professional competence, proficiency in a professional foreign language for the implementation of written and oral information exchange, further development of speech activity (reading, writing, listening and speaking - monologue and dialogic speech). Rules of speech behavior in accordance with situations of professional communication, depending on the style and nature of communication in the social, household and academic spheres	Use communication in oral and written forms in the state, Russian and foreign languages to solve professional problems of interpersonal and intercultural interaction.	Academic writing

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	General Immunology	OI 3241	BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	3	Basics of biotechnology, Biochemistry, Gell biotechnology, Microbiology and Virology, Molecular genetics and genetic engineering, Physiology	Industrial biotechnology, Internship, Pregraduation practice	The concept of natural resistance and species immunity, acquired immunity. Modern ideas about antigens, protective mechanisms of the macroorganism, regulation of the immune response and applied immunology. The functioning of the immune system is normal, the laws and principles of functioning. Knowledge of immunological methods for determining T- and B-lymphocytes, as well as methods for isolating and studying immunoglobulins	Possess a wide range of methods and approaches of immunological research and the skills of using immunological tests to detect antigens and antibodies. Perform a complex of operations related to hybrid technique, carry out extra-immunization of animal producers, obtain polyclonal antibodies and MABs.	Environmental problems in agro-biotechnology
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Environmental problems in agro-biotechnology		BS	Elective subjects	6.0	Bachelor	Microbiology and biotechnology	3	3	Basics of biotechnology, Biochemistry, Biotechnology of plants, Gell biotechnology, Microbiology and Virology, Molecular biology, Molecular genetics and genetic engineering	Agricultural biotechnology, Industrial biotechnology, Internship, Pregraduation practice	Microbiological bases of food products. Specific microflora of food. Foodborne diseases: microorganisms, diseases and methods of control. Some legal aspects in food safety. Control of microorganisms leading to food spoilage. Detection and identification of bacteria in food	Formulate the state of ecological biotechnology, solve theoretical and applied aspects of ecological biotechnology.	General Immunology
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Professional English		BS	Elective subjects	4.0	Bachelor	Microbiology and biotechnology	4	1	Foreign language	Agricultural biotechnology, Business activities, Industrial biotechnology, Innovative entrepreneurship, Pregraduation practice	Systematic deepening of the English study and the development of communicative competence in the framework of international standards of foreign language education based on the further development of skills and abilities of active language skills in professional activities.	Possess the competencies of monologue and dialogic utterance; independently write texts of different genres in English provided by the program; understand the main idea of academic texts, including specialty texts; critically analyze information, view and comment on texts, use reference materials, including resources from the Internet; make academic presentations on given topics.	English for special purposes
B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Business activities	PD 4239	BS	Elective subjects	5.0	Bachelor	Technology of production of products of stock-raising	4	2	Fundamentals of Economics and Law, Higher Mathematics	Agricultural biotechnology, Industrial biotechnology, Pregraduation practice	Entrepreneurial activity concept, essence, main types and organizational forms. Regulation and wages. Costs and financial results of the organization (firm). Economic efficiency of the organization (firm) and entrepreneurial projects. Marketing and management of the organization. State support for entrepreneurship and its infrastructure.	Navigate in the normative documents regulating entrepreneurial activity, in legal and legal information, extracting everything necessary and useful for their activities.	Innovative entrepreneurship

B050 - «Biological and related sciences»	6B05101 - «Agricultural Biotechnology»	Full-time (bachelor 4 years) trimester	Innovative entrepreneurship		BS	Elective subjects	5.0	Bachelor	Economy	4	2	Fundamentals of Economics and Law, Higher Mathematics	Agricultural biotechnology, Industrial biotechnology, Pregraduation practice	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	Business activities

The catalog of elective disciplines was approved by the faculty council Minutes 1A dated 28.08.2023

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