

**MINISTRY OF AGRICULTURE OF THE REPUBLIC OF KAZAKHSTAN  
"NJSC "S. SEIFULLIN KAZAKH AGROTECHNICAL UNIVERSITY"**

Approve  
NJSC "Saken Seifullin Kazakh  
Deputy Chairman of the Management  
Board Academic Activity-Rector  
\_\_\_\_\_ A.M Abdyrov.  
« \_\_\_\_\_ » \_\_\_\_\_ 2021.

**CATALOG OF ELECTIVE COURSES**

For students in groups of educational programs

Land Management

**Nur-Sultan, 2021**

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Brief description of elective disciplines of the educational program

Logistics and supply chain management

1	Name of course	Basics of landscape science
2	Code of course	OL 1216
3	Cycle of course	BD
4	Amount of credits	4
5	Level of preparation	Undergraduate studies
6	Department	Land management and geodesy
7	Year	1
8	Prerequisites	Geography (high school curriculum), ecology and life safety fundamentals
9	Postrequisites	Cartography and digital terrain models, on-farm land management of agricultural formations, local land management, land use planning, land monitoring, agriculture. reclamation
10	Course summary	The concept of the landscape sphere. Landscape as a natural-territorial complex. A systematic approach to the study of landscapes. Landscape and ecological balance. The main regularities of landscape differentiation. Morphological units of the landscape. Landscape components, their relationship. Anthropogenic landscapes. Ecological foundations of nature management. Rational use of natural resources. Modern concepts of nature management. Types of nature management. Landscape mapping for land management purposes.
11	Learning outcomes	Plan and carry out activities for the protection of nature; use the regulatory framework for environmental management, take into account and assess landscape conditions for land management purposes and types of anthropogenic changes in agricultural landscapes, have the ability to understand, present and critically analyze basic information in the field of environmental management; to the accounting and assessment of landscape conditions for the purposes of land management and cadastre

1	Name of course	Agriculture and plant growing
2	Code of course	ZR 2221
3	Cycle of course	BD
4	Amount of credits	3
5	Level of preparation	Undergraduate studies
6	Department	Agriculture and plant breeding
7	Year	2
8	Prerequisites	Biology, chemistry (secondary school program), ecology and the basics of life
9	Postrequisites	On-farm land management of agricultural formations, land use planning
10	Course summary	The concept of soil and its fertility. Plant life conditions, water and air properties of soil. Basics of soil cultivation. Technological operations during soil cultivation. Scientific basis of crop rotation. Intensive technologies for the cultivation of agricultural crops (wheat, buckwheat, corn, millet, potatoes). Treatment of soils prone to water erosion. Presowing soil preparation, sowing and caring for plants on slope lands. Features of processing of soils prone to wind erosion.
11	Learning outcomes	To be able to compose crop rotations taking into account the principle of adaptability of agricultural crops; possess the skills of using farming techniques that contribute to the preservation and increase of soil fertility and protection of soil from erosion.

1	Name of course	Property valuation
2	Code of course	ON 2311
3	Cycle of course	BD
4	Amount of credits	5
5	Level of preparation	Undergraduate studies
6	Department	Кадастр және бағалау
7	Year	2
8	Prerequisites	Economic theory, state registration and real estate accounting
9	Postrequisites	Economics and management in land management, the basics of urban planning and planning of settlements, planning of rural settlements, diploma design
10	Course summary	The role and improvement of investment processes in attracting capital to finance real estate objects and related features related to determining their value in accordance with domestic and international standards. Theoretical foundations of the conceptual apparatus of real estate, the main features of real estate. Functional features of the real estate market and the processes taking place in it. Principles of state regulation of the real estate market.
11	Learning outcomes	To be able to resolve practical issues of organization and planning, calculate the costs of manufacturing products in a department; calculate the technical and economic indicators characterizing the production and economic activities of the unit; develop a business plan, own the classification of real estate objects and their main characteristics; determining the value of the capital invested in real estate, the effectiveness of investment projects. Expand the concept of mortgage and features of mortgage lending.

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Innovation management

1	Name of course	Land use graphics
2	Code of course	ZG 2217
3	Cycle of course	BD
4	Amount of credits	5
5	Level of preparation	Undergraduate studies
6	Department	Land management and geodesy
7	Year	2
8	Prerequisites	Drawing (high school curriculum), information and communication technology
9	Postrequisites	Land acquisition for non-agricultural purposes, inter-farm land management, on-farm land management of agricultural formations, district land management, land use planning, cartography and digital terrain models
10	Course summary	The main conventional signs and designations used in the graphic design of land management projects; the main goals and principles of correct compositional interconnection for the layout of all elements of a graphic document; theoretical foundations and methods of preparing graphic materials in Corel Draw 12; practical work with three-dimensional vector and raster graphics in Corel Draw 12. Theoretical foundations and methods of preparing graphic materials using modern software products
11	Learning outcomes	Know the symbols for topographic maps, the basic concepts of land management drawing; basic techniques and methods of land management drawing; basic requirements for the design of topographic plans and maps, elements of computer graphics; principles of presentation of graphic information in a computer; be able to draw up land management graphic documents (plans, projects, etc.), work in a graphic editor; possess the basic techniques and methods of land management drawing, the method of drawing up graphic land management materials

1	Name of course	Soil science
2	Code of course	Poch 2219
3	Cycle of course	BD
4	Amount of credits	5
5	Level of preparation	Undergraduate studies
6	Department	Soil Science and Agrochemistry
7	Year	2
8	Prerequisites	Biology (high school curriculum), ecology and life basics
9	Postrequisites	On-farm land management of agricultural formations, local land management, land use planning
10	Course summary	The concept of soil as a natural body, its formation, properties, development and evolution, patterns of geographical distribution, rational use and protection of soils; the main laws of the formation of soils and soil cover; patterns of zonal distribution of soils on the earth's surface and its relationship with natural zoning; patterns of energy flow and circulation of substances through the soil cover. Basic principles of soil appraisal. Methodology for assessing soil grading in Kazakhstan. Methodology for assessing soils according to the guidelines for carrying out soil assessments in foreign countries. Validation of soils of agricultural enterprises. Application of the results of soil appraisal
11	Learning outcomes	To know and understand: soil - agroecological conditions of agricultural cultivation. cultures; crop requirements for the main factors that determine their productivity; features of photosynthetic activity of plants depending on fertilizers; features of the morphophysiology of agricultural plants in connection with the use of fertilizers and the management of their productivity, the principles of the method of soil appraisal To be able to: apply the obtained theoretical knowledge and practical skills in the implementation of the soil - agroecological assessment of the conditions for the cultivation of agricultural crops, to carry out the assessment of soils. Possess: knowledge about the formation of soil about the factors and processes of soil formation, about the genesis, properties of soils and soil types, about methods of soil assessment