

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF  
KAZAKHSTAN

SOUTH KAZAKHSTAN UNIVERSITY named after M. Auezov

«APPROVED BY»  
Chairman of the board  
of rectors-rector  
c.h.s., academician  
Kozhamzharova D.P.  
2021y.

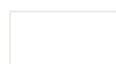


**EDUCATION PROGRAMME**

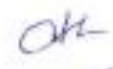











**6B07350-Land management**

|   |   |
|---|---|
| Registration number                               | 6B07300004  |
| Code and classification of the field of education | 6B07-Engineering, manufacturing and construction industries |
| Code and classification of training areas         | 6B073 – « Architecture and construction »                   |
| Group of educational programs                     | B075- Cadastre and land management                          |
| Type of EP  | active  |
| ISCE level  | 6   |
| NQF level   | 6   |
| SQF of education level                            | 6   |
| Language of learning                              | Kazakh, Russian   |
| Typical duration of study                         | 4 years   |
| Form of study                                     | Full time   |
| The complexity of the EP                          | 240 кредитов  |
| Distinctive features of the EP                    | -   |
| Distinctive features of EP                        | -   |
| University Partner ( JEP )                        | -   |
| University Partner ( TDEP )                       | -   |

Shymkent - 2021.



Drafters:

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| Kauashova S.                   | Director KH "SENIM"   |  |

EP was considered by the Academic Commission «Engineering and engineering», Minutes № 5 " 23 " 02 . 202 1

Chairman of the Academic Commission  Korganbayev B.N.

It was considered recommended for approval at the meeting of the Educational and Methodological Council of the M.Auezov.SKU, Minutes

№ 5 " 23 " 02 . 202 1

It was approved by the decision of the Academic Council of the University Minutes

№ 4 " 23 " 02 . 202 1

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## **Introduction**

### **1. Scope**

Designed for the implementation of bachelors training by educational program (hereinafter - EP) code 6B07350-Land management protection in RSE on right of economic management "M.Auezov South Kazakhstan University" of RK MES.

### **2. Regulatory documents**

Education Act of the Republic of Kazakhstan (as amended and supplemented on 07/04/2018);

Standard rules for the operation of educational organizations implementing educational programs of higher and (or) postgraduate education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan from October 30, 2018 No. 595 (registered with the Ministry of Justice of the Republic of Kazakhstan on October 31, 2018 No. 17657);

State obligatory standards of higher and postgraduate education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan, October 31, 2018 No. 604;

The rules for the organization of educational process on credit technology education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan on April 20, 2011 No. 152 as amended and supplemented of October 12, 2018 No. 563

Professional standard: "Development of geoinformation systems", approved by Order No. 259 of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 24.12.2019

### **1. Educational programs concept**

The purpose of the educational program is consistent with the mission of the university and is aimed at training the intellectual elite of the country with advanced knowledge and entrepreneurial skills, fluent in three languages, demonstrating the skills of conceptual, analytical and logical thinking, creative approach in professional activities, able to work in a national and international team, assimilating the strategy of learning throughout life.

The educational program is harmonized with the 6th level of the National Qualifications Framework of the Republic of Kazakhstan, with the Dublin Descriptors, and with the 1st cycle of the Qualification Framework of the European Higher Education Area. ((A Framework for Qualification of the European Higher Education Area), also with a 6-level European Qualification Framework for Lifelong Learning.

The uniqueness of the educational program 6B07350-Land management consists in achieving the expected result, the content, conditions and technologies for implementing the educational process, assessing the quality of graduate training in this area and includes: the curriculum, work programs of academic disciplines and other materials that ensure the quality of training of students, as well as programs of educational and industrial practice, a calendar training schedule and methodological materials that ensure the implementation of the relevant educational program.

The educational program is aimed at achieving learning outcomes through the organization of the educational process using the principles of the Bologna Process, student-centered learning, accessibility and inclusiveness.

The results of the training program are achieved through the following training activities:

- classroom classes: lectures, seminars, practical and laboratory classes-are conducted taking into account innovative teaching technologies, the use of the latest achievements of science, technology and information systems;

- extracurricular activities: independent work of the student, including under the guidance of a teacher, individual consultations;

- conducting professional practices, completing term papers and theses (projects).

The University has taken measures to maintain academic integrity and academic freedom, and to protect students from any kind of intolerance and discrimination.

The quality of the OP is ensured by the involvement of stakeholders in its development and evaluation, systematic monitoring and review of its content.

#### **4.Requirements for applicants**

Established in accordance with the Standard Rules for Admission to Training in Educational organizations that implement educational programs of higher and Postgraduate Education Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 600 of 31.10.2018

## **1. PASSPORT OF THE EDUCATIONAL PROGRAM**

### **1.1 The purpose and objectives of the educational program in the specialty**

The purpose of the EP: Training of qualified personnel in the field of modern technologies for creating land information systems, geodetic support for land management and cadastral works.

OP tasks:

- formation of socially responsible behavior in society, understanding the importance of professional ethical standards and following these standards;
- providing them with lifelong learning skills that will enable them to successfully adapt to changing conditions throughout their professional careers;
- providing conditions for the acquisition of a high general intellectual level of development, mastering competent and developed speech, culture of thinking and skills of scientific organization of work in the field of professional activity.
- formation of the competitiveness of graduates in the field of land management, environmental management to ensure the possibility of their fastest possible employment in the specialty or continuing their studies at subsequent stages of training.

### **1.2 List of qualifications and positions**

The graduate of this OP is awarded the degree-Bachelor of Engineering and Technology in the educational program 6B07360 - "Cadastral". Bachelors in OP 6B07350-Land management can hold primary positions of land resources specialist, cadastral engineer, appraiser, land management under akimats, city architecture, engineer surveyor, other professional activities urban planning, not included in other categories without presenting requirements for work experience in accordance with the qualification requirements. The qualification directory of positions of managers, specialists and other employees, approved by the order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated May 21, 2012 No. 201-o-m.

### **1.3 Qualification characteristics of the graduate of the educational program**

#### **1.3.1 Field of professional activity**

The sphere of professional activity is the field of construction of land management, land relations for conducting geodetic and topographic surveys of land, adjustment of planning and cartographic materials, allotment of land plots and registration of title documents, state control over the use and protection of agricultural land and land of settlements.

#### **1.3.2 Objects of professional activity**

The objects of professional activity of graduates are the land resources of the Republic of all categories, schemes and forecasts of land use, design of inter-farm, intra-farm and district land management, taking into account land reclamation and improvement, develop anti-erosion measures, types and forms of ownership and use.

#### **1.3.3 Subjects of professional activity**

The subjects of professional activity are geodetic works in land management; topographic surveys of land resources and their mapping; executive surveys in land management design; management and design of land management of all types.

### 1.3.4 Types of professional activity

Bachelor in EP 6B07350 - "Land Management" can perform the following types of professional activities:

- organizational and technological support;
- production and management – calculation and design;
- experimental-research.

### 2.Results of training on EP

**PO1** Communicate freely in the professional environment and society in Kazakh, Russian and English.

**PO2** Demonstrate scientific, mathematical, social, socio-economic and engineering knowledge in professional activities, methods of mathematical data processing, theoretical and experimental research, regulatory documents and elements of economic analysis.

**PO3** Possess information and computational literacy, the ability to generalize, analyze and perceive information, set goals and choose ways to achieve it.

**PO4** Possess basic methods of geodesic, land management and cartographic work;

**PO5** Possess knowledge of the structure and classification of data sources, types of geoinformation systems, technical and software tools for converting cartographic information into digital form and processing it;

**PO6** Justify and use organizational and technological training in the preparation of land balances, land cadastre documents and maps, land reclamation projects and land improvement

**PO7** Know the conduct of state control over the use and protection of land;

**PO8** Know the management of the state land cadastre monitor land of all categories

**PO9** Participate in the assessment of the state of land resources and objects (including cross-border ones), using the principles and management of land resources

**PO10** Readiness to conduct photogrammetric work and land mapping using GIS and digital technologies;

**PO11** The ability to calculate and complete the effective use of land resources, plan and organize the work of land management enterprises, taking into account the necessary economic costs;

**PO12** Effectively work individually and as a team member, correctly defend your point of view, adjust your actions and use different methods.

## 3 COMPETENCIES OF THE GRADUATE OF THE EP

**3.1** Successful completion of the training in the OOP contributes to the formation of the following competencies in the graduate:

- key competencies (CC)
- professional competencies (PC).

**Key competencies:**

in the field of the *native language* (KK1)

*в области иностранных языков* (KK2)

- the ability to express and understand concepts, thoughts, feelings, facts and opinions in the field of music education in written and oral forms (listening, speaking, reading and writing), as well as to interact linguistically appropriately and creatively in a variety of social and cultural contexts: during school, at work, at home and at leisure;

*basic mathematical, natural science and technical training* (KK3)

- the ability and willingness to apply the educational potential, experience and personal qualities acquired during the study of mathematical, natural science, and technical disciplines

at the university, to determine ways to control and evaluate the solution of professional problems, the development of mathematical and natural science thinking;

*computer system* (KK4)

- the ability to confidently and critically use modern information and digital technologies for work, leisure and communication, the ability to use, restore, evaluate, store, produce, present and exchange information through a computer, communicate and participate in collaborating networks using the Internet in the field of professional activity;

*social* (KK5)

- the ability to possess social and ethical values based on public opinion, traditions, customs, norms and be guided by them in their professional activities; to know the cultures of the peoples of Kazakhstan and observe their traditions; to observe the basics of the legal system and legislation of Kazakhstan, including in the field of education; to know the trends of social development of society; to be able to adequately navigate in various social situations; to be able to find compromises, to correlate their opinion with the opinion of the team; to possess the norms of business ethics, ethical and legal norms of behavior; strive for professional and personal growth; work in a team, correctly defend their point of view, offer new solutions; demonstrate tolerance towards other individuals;

*economic, managerial and entrepreneurial activities* (KK6)

- ability to know and understand the goals and methods of state regulation of the economy, the role of the public sector in the economy; possess the basics of economic knowledge; possess the skills of critical thinking, interpretation, creative analysis, drawing conclusions, evaluation; manage projects to achieve professional goals, manage personnel, demonstrate entrepreneurial skills.

*cultural training* (KK7)

- the ability to know and understand the traditions and culture of the peoples of Kazakhstan, is tolerant to the traditions and culture of other peoples of the world, is aware of the attitudes of tolerant behavior; is not subject to prejudice, has high spiritual qualities, is formed as an intelligent person

*additional competencies* (KK8)

- the ability to possess the skills of critical thinking, interpretation, creativity of analysis, drawing conclusions, evaluation; to have creativity and an active life position; to make professional decisions in conditions of uncertainty and risk.

PC1-Master the basic methods of performing geodetic, land management and cadastral works;

PC2 - Use the main advanced geographic information technologies for modeling theoretical and experimental research in agriculture;

PC3- Have the skills to work with geodetic and photogrammetric instruments, equipment and tools, with computer technologies for performing cadastral and land management works;

PC4 – Have a holistic understanding of the theoretical and methodological foundations of the development of land relations, their state regulation

PC5- Justify and use organizational and technological training in the preparation of land balances, land cadastre documents and maps, land reclamation projects and land improvement;

PC6- The ability to calculate and complete the effective use of land resources, plan and organize the work of land management enterprises, taking into account the necessary economic costs;

PC7 – Readiness to conduct photogrammetric work and land mapping using GIS and digital technologies;



### 3.2 Matrix of correlation of the results of training in the OP as a whole with the formed competencies of the modules

|     | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 |
|-----|----|----|----|----|----|----|----|----|----|-----|-----|-----|
| KK1 | +  | +  |    |    |    |    | +  |    |    |     |     |     |
| KK2 | +  | +  | +  |    |    |    |    |    |    |     |     |     |
| KK3 |    | +  | +  |    |    |    | +  |    | +  |     | +   |     |
| KK4 |    |    | +  |    |    |    |    |    |    | +   | +   |     |
| KK5 |    |    |    |    | +  |    |    | +  |    |     |     | +   |
| KK6 |    |    |    |    | +  |    | +  |    | +  |     |     | +   |
| KK7 |    |    |    |    | +  | +  | +  |    | +  |     |     |     |
| KK8 |    |    |    |    |    |    | +  | +  | +  |     | +   |     |
| ΠK1 |    |    |    | +  |    |    |    |    |    |     |     |     |
| ΠK2 | +  |    |    | +  |    |    |    |    | +  |     |     |     |
| ΠK3 |    |    |    |    | +  | +  |    |    |    | +   |     | +   |
| ΠK4 |    | +  | +  |    |    |    | +  | +  |    |     |     |     |
| ΠK5 |    |    | +  |    | +  | +  | +  |    |    | +   |     | +   |
| ΠK6 |    |    |    |    | +  |    | +  |    | +  |     | +   |     |

**4.SUMMARY TABLE SHOWING THE AMOUNT OF LOANS DISBURSED BY  
MODULES OF THE EDUCATIONAL PROGRAM**

| Course of study | Semester | The number of mastered modules | The number of studied disciplines |    |    | Number of KZ credits |                      |                     |                   | Total hours | Total KZ credits | The number of |                  |
|-----------------|----------|--------------------------------|-----------------------------------|----|----|----------------------|----------------------|---------------------|-------------------|-------------|------------------|---------------|------------------|
|                 |          |                                | OC                                | BK | EC | Theoretical training | Educational practice | Industrial practice | Final examination |             |                  | exam          | different offset |
| 1               | 1        | 4                              | 5                                 | -  | 2  | 30                   |                      |                     |                   | 900         | 30               | 5             | 2                |
|                 | 2        | 3                              | 3                                 | 2  | 2  | 29                   | 1                    |                     |                   | 900         | 30               | 6             | 2                |
| 2               | 3        | 6                              | 2                                 | 3  | 3  | 30                   |                      |                     |                   | 900         | 30               | 6             | 2                |
|                 | 4        | 6                              | 3                                 | 1  | 2  | 25                   |                      | 5                   |                   | 900         | 30               | 5             | 2                |
| 3               | 5        | 6                              | -                                 | 1  | 5  | 30                   |                      |                     |                   | 900         | 30               | 6             | -                |
|                 | 6        | 4                              | -                                 | 2  | 2  | 24                   |                      | 6                   |                   | 900         | 30               | 3             | 1                |
| 4               | 7        | 3                              | -                                 | -  | 5  | 20                   |                      |                     |                   | 600         | 20               | 5             | -                |
|                 | 8        | 3                              | -                                 | -  | 5  | 20                   |                      |                     |                   | 600         | 20               | 5             | -                |
|                 | 9        | 1                              | -                                 | 1  | -  | 20                   |                      |                     | 20                | 600         | 20               | -             | 1                |
| Subtotal        |          |                                | 13                                | 10 | 26 |                      | 1                    | 11                  | 20                | 7200        | 240              | 40            | 10               |

### 5. Information about disciplines

| Module name                         | Cycle | BK/E<br>C | Component Name                     | Brief course description<br>(in 30-50 words)   | Number of<br>credits | Formed PO<br>(codes) |
|-------------------------------------|-------|-----------|------------------------------------|--|----------------------|----------------------|
| Module of the social science        | GED   | OC        | Contemporary History of Kazakhstan | It allows us to classify the conceptual foundations of the National History, interpret the origins, continuity of the Kazakh statehood and current problems of the history of modern Kazakhstan. Analysis of the activities of the national intelligentsia in the formation of the ideology of the liberation movement and the stages of socio-economic modernization of Kazakhstan. Describe the creation of a democratic state governed by the rule of law.. | 5                    | PO2, PO1             |
|                                     | GED   | OC        | Philosophy                         | Knowledge about the place and role of philo-philosophy in the life of society and man, the main stages of the development of world and Kazakh philosophical thought, the positions and categories of philosophy for evaluating and analyzing various social trends and facts. Analyze the features of the genesis and development of philosophical knowledge.  | 5                    | PO1, PO2             |
| Module of socio-political knowledge | GED   | OC        | Social and Political Studies       | It studies the theories of sociology, the social structure and stratification of society, explains the role and place of politics in society, examines the main stages of the formation and development of political science, including youth policy, the role of politics in the system of public life, reveals the essence of the state, reveals the relationship between the state and civil society.   | 4                    | PO2, PO3             |
|                                     |       |           |                                    | The basics of the morphology of culture are  |                      |                      |

|                                 |     |    |  |  |   |          |
|---------------------------------|-----|----|--|--|---|----------|
|                                 | GED | OC | Cultural studies and psychology                            | studied, the anatomy of culture is characterized and its semiotic character is revealed, ideas about archaic culture in the territory of ancient Kazakhstan are given, the main stages of the formation of Kazakh culture are considered, the essence of Kazakh culture in the context of modern world processes is revealed.  |   |          |
| Socio-ethnic development module | GED | BK | Ecosystem and rights                                       | To provide students with knowledge of the most important sphere of life-the branch of law regulating public relations in the field of nature protection, to reveal the role of environmental law in solving the problems of social and economic development of society, to determine the directions of using the knowledge of this branch of law in the activities of environmental and judicial authorities and to show the importance of ensuring the rule of law in environmental and other related relations to prevent a number of offenses | 5 | PO5, PO2 |
|                                 | BD  | EC | Current problems and modernization of public consciousness | Understanding of the history of the formation and development of sociology and political science. Modern sociological and political theories. Problems of applied sociology, the structure of the political sphere of society. Methodology and methodology of sociological research. Sociology of personality and deviant behavior. Sociology of Labor and Economics.  | 3 | PO2, PO3 |
|                                 | BD  | EC | Mukhtar Studies  | The study of current problems about the sciences, the definition of a modern approach to the work of a writer, literary criticism of Soviet ideology in yesterday's  |   | PO2, PO3 |

|   |     |    |                           |   |    |          |
|---|-----|----|---------------------------|---|----|----------|
|   |     |    |                           | Soviet society.consider it as plentiful and develop a broader science.Knowledge and taste in heritage knowledge must be accompanied by today's freedom and independence.  |    |          |
|   | BD  | EC | Abay Studies              | Know the main processes of studying the historical, cultural and literary context of the Abai era, studying Abai's works in Kazakh and Russian languages, educating aesthetic taste by studying the artistic originality of literary texts of our time, fostering a sense of patriotism,and the uniqueness of the works of modern patronymic writers and poets.   |    | PO2, PO3 |
| Communication and Physical Education module | GED | OC | Kazakh (Russian) language | Development of cognitive and communicative activities in the Russian (Kazakh) language in the areas of interpersonal, social, and intercultural communication.Instilling the skills of discussing ethical, cultural, and socially significant norms in discussions, the ability to work in a team, interaction in a team, flexibility, and creativity.  | 10 | PO1, PO2 |
|   | GED | OC | Foreign language          | In teaching a foreign language is the formation of cross-cultural and communicative competence of students in the process of foreign language education at a sufficient level (A2), the level of basic sufficiency (B1), basic standard (B2). Depending on the level of preparation of the student at the time of admission, he can reach the C1 level if the language level of the student at the start is higher than the B1 level. | 10 | PO1, PO3 |
|   | GED | OC | Physical Culture          | Knowledge of the totality of values, norms and knowledge created and used by society  | 8  | PO2, PO3 |

|  |    |    |  |   |   |          |
|--|----|----|--|---|---|----------|
|  |    |    |  | for the physical and intellectual development of human abilities, improving their motor activity and forming a healthy lifestyle, social adaptation through physical education, physical training and physical development.   |   |          |
|  | BD | BK | Professional Kazakh (Russian) language                     | Development of the skills of extracting the necessary information from the text, its interpretation in educational and professional communication. - Development of the ability to establish contacts at a professional level, competently build communication based on the goals and situation of communication. | 3 | PO1, PO2 |
|  | BD | BK | Professionally-oriented foreign language                   | Know the main provisions of clearly pronounced statements within the literary norm on well-known topics related to personal interests (the speech of the speakers should be clear and relatively slow); talk about their dreams; write simple coherent texts on familiar or interesting topics                    | 3 | PO1, PO3 |
|  | BD | EC | Kazakh alphabet based on Latin graphics                    | The formation of Kazakh sounds taking into account the peculiarities of their pronunciation, the study of phonetic features of Kazakh words and phrases based on Latin graphics. Develop the skills of literate writing based on the Latin alphabet.  | 3 | PO1, PO2 |
|  | BD | EC | Culture of speech and communication in the Kazakh language | Culture of speech and communication in the Kazakh language – the main provisions of the theory and practice of speech culture. The ability to correctly use and use the accumulated language material. Language means depending on the goals, scope and conditions of communication; use the                      | 3 | PO1, PO3 |

|                               |     |    |   |  |   |                |
|-------------------------------|-----|----|---|--|---|----------------|
|                               |     |    |   | stylistic possibilities of Kazakh phonetics, vocabulary.   |   |                |
|                               | GED | OC | Information and communication technologies (in English) | Use information resources to search and store information; know what economic and political factors contributed to the development of information and communication technologies; features of information systems  | 5 | PO3,PO1        |
| Fundamentals of the specialty | BD  | EC | Introduction to the specialty                           | Considers the concept of the distribution of land management on the globe;on the main environmental aspects of the use of surface and underground land resources;on the use of land relations; irrigation of rural areas; on the protection and rational use of surface and underground land resources.                                | 4 | PO6, PO7, PO11 |
|                               | BD  | EC | Fundamentals of Academic Writing                        | To master the basic concepts of the formation and development of competencies related to the understanding of the functioning of the technology of subject-language learning; to know the basic terms necessary for the implementation of scientific and professional activities by bachelors in accordance with their specialization. | 4 | PO1, PO3       |
|                               | BD  | EC | Land management design                                  | Study the standards and criteria for drawing up schemes and forecasts of land use, design inter-farm, intra-farm and district land management, taking into account land reclamation and improvement, develop monitoring of land of all categories.   | 5 | PO4, PO 7, PO8 |
|                               |     |    | Fundamentals of cadastral works                         | Knowledge of the content and procedure of the cadastre in the Republic of Kazakhstan, the process of granting land and the   | 5 | PO4, PO 7, PO8 |

|                                    |    |    |  |  |   |                      |
|------------------------------------|----|----|--|--|---|----------------------|
|                                    | BD | EC |  | formation of land uses for various non-agricultural purposes, the methodology for developing a land allotment project. Be able to use knowledge of the principles of land relations management.  |   |                      |
|                                    |    |    | Educational practice                       | Consolidation of theoretical knowledge and the acquisition of practical skills by students in the production of land management works, the formation and practical consolidation of knowledge in the field of rational use and protection of land resources, the development of the land economy of the country on the basis of environmental understanding of professional activities.  | 1 | PO4, PO2             |
| Engineering and technical sciences | BD | BK | Development of land relations              | Knowledge and understanding of the basic concepts of land relations (land legal relations, land system). The place of land relations in the general system of industrial and economic relations. Forms of land ownership, land ownership and land use, their economic and legal nature.  | 5 | PO6, PO8, PO9, PO 12 |
|                                    | BD | BK | Geodesy                                    | General information on geodesy, cartography and topography, as well as methods for determining the geodetic coordinates of individual points on the earth's surface are considered. They gain skills in handling various geodetic instruments, performing topographic surveys, leveling and splitting the axes of the earth; process the results of field measurements, drawing up a terrain plan and solving geodetic problems on them. | 4 | PO4, PO5, PO9        |
|                                    | BD | BK | Theoretical foundations of land management | Considers the concept of the distribution of the theoretical foundations of land management design, the organization of land   | 4 | PO2, PO3, PO4        |



|  |    |    |   |   |   |                      |
|--|----|----|---|---|---|----------------------|
|  |    |    |   | use of agricultural enterprises, formations of land use for non-agricultural purposes, the methodology of designing land use for non-agricultural purposes.   |   |                      |
|  | BD | BK | Scientific foundations of land management | Understand the issues of the doctrine of land as a natural resource and means of production, forms of land ownership, land ownership and land use, the development of land relations and land management in the Republic of Kazakhstan, the structure and principles of land management, factors that influence the adoption of land management decisions, the land management system as a whole.                                   | 4 | PO2, PO3, PO4        |
|  | BD | BK | Photogrammetry and remote sensing         | Knowledge and understanding of the basics of working with geodetic and photogrammetric instruments, equipment and tools, metric and decoding properties of aerial and space images obtained by various survey systems; study of technologies for decoding images for the purpose of creating cadastral plans; digital photogrammetric image processing technologies for creating plans and maps for the purposes of urban cadastre. | 4 | PO4, PO5, PO9<br>P10 |
|  | BD | EC | Graphic design of projects and maps       | Knowledge and understanding of the main elements of the graphics of plans and maps in land management, techniques for drawing them. Drawing tools, materials and accessories The device of basic drawing tools, their verification, sharpening, simple corrections and care for them. Requirements for drawing tools and accessories.   | 5 | PO3, PO5, PO6        |
|  |    |    | Production of plans and                   | Know the basic methods of creating and  | 5 | PO3, PO5, PO6        |

|                                 |    |    |   |   |   |                   |
|---------------------------------|----|----|---|---|---|-------------------|
|                                 | BD | EC | maps                                    | updating maps and plans, the features of the image of the spherical surface of the Earth on the plane. Be able to "read" the map, including the determination of coordinates and the restoration of spatial information from conventional signs, measure on a topographic map; use the methodology of field and office mapping.   |   |                   |
|                                 | BD | EC | Computer graphics of cadastral works    | Methods of formation of spatial representations and improvement of graphic skills of display of objects on working drawings, formation of quality of drawing literacy, methods and methods of construction of shadows, perspectives, plans, facades, sections, drawings in projections with numerical marks, simple architectural and construction drawings are considered.     | 4 | PO5,PO6, PO10     |
|                                 | BD | EC | Engineering schedule of cadastral works | Design the Compass user interface, coordinate systems, properties of primitives, screen management, object construction, drawing design commands, drawing editing, drawing design and layout, basic principles of three-dimensional modeling in the COMPASS 3D system, managing projections of three-dimensional models, managing visual styles of the model, editing commands. | 4 | PO5,PO6, PO10     |
| Land quality assessment and use | BD | EC | Land monitoring                         | The concept, tasks and content of land monitoring, its place and significance in the system of information on the state of the land fund of the Republic of Kazakhstan; the principles of its management, the structure of land monitoring; the main sources and types of land pollution; the concept, types  | 5 | PO3,PO5, PO7, PO9 |

|  |    |    |   |  |   |                   |
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|  |    |    |   | and classification of pollutants.  |   |                   |
|  | BD | EC | Land condition forecasting                        | The concept, content and tasks of land protection. Forms and methods of land protection: legal, economic, land management, engineering and others, control over the use of land and its condition.   | 5 | PO3,PO5, PO7, PO9 |
|  | BD | BK | Land cadastre                                     | General concept of the land cadastre; methods, principles and components of the land cadastre;the land fund of the Republic of Kazakhstan as an object of the state land cadastre; the composition of the land cadastre; the concept of land management, land reform carried out in the Republic of Kazakhstan. Land resources of the Republic of Kazakhstan. The concept of land relations. | 4 | PO4, PO5, PO6     |
|  | BD | EC | State Control over the use and protection of land | State control, depending on the bodies that control the use and protection of land. State control over the content and specifics of the work. State control depending on the scope of work and special elements. Control over the use and protection of land by the nature of loan relations by objects, subjects and control bodies.  | 4 | PO7, PO8, PO11    |
|  | BD | BK | Regional features of land management              | The principles of land management design, the basic principles and methodological features of regional land management, the methodology of working design and its features depending on the design objects are considered. Draw up schemes of irrigation fields, central farms, and crop rotations.  | 4 | PO3,PO4, PO6      |
|  | BD | BK |   | Understand the issues of the doctrine of land as a natural resource and means of production, forms of land ownership, land   | 4 | PO3,PO4, PO6      |

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|--------------------------|-----|----|--|---|---|--------------------|
|                          |     |    | Land management works in new conditions                      | ownership and land use, the development of land relations and land management in the Republic of Kazakhstan, the structure and principles of land management, factors that influence the adoption of land management decisions, the land management system as a whole.  |   |                    |
|                          |     |    | Production Practice I  | Consolidation and deepening of theoretical knowledge in general professional disciplines, acquisition of practical skills in the field of land management, with the structures of land resources, forms of land ownership, as well as the production and compilation of land cadastre records. Know the land legislation of the Republic of Kazakhstan To be able to use the normative legal acts of land management. | 5 | PO1, PO2, PO3, PO4 |
| Land and cadastral works | CHD | EC | Geoinformation technologies in land management               | Teach how to create and understand the use of GIS technologies and cadastral database management systems used in the land cadastre. Determine the features of the implementation of automated technology for conducting GZK, own the methods of quantitative and qualitative land accounting, work management and methods.  | 4 | PO4, PO5, PO10     |
|                          | CHD | EC | Modern land management systems in the Republic of Kazakhstan | Design modern geographical and land information systems, software analysis and modeling, application of the information system of the state land cadastre of Kazakhstan in practice   | 4 | PO4, PO5, PO10     |
|                          | CHD | EC | Automated study of cadastral works                           | Designing containment and methodology of land accounting, basics development of a database for land accounting, design of a normalized database structure for the land  | 4 | PO4, PO5, PO10     |

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|     |    |   | cadastre, production of acts for the right to own and use land, organization of search in the database, design of forms and tables.  |   |                     |
| CHD | EC | Automated systems of land management works  | Study of theoretical provisions on information as the main component of the management system; - study of modern methods and techniques for creating information systems of the land cadastre; - conducting seminars and practical classes on specific materials that ensure the adaptation of knowledge on the creation and maintenance of information technologies of the land cadastre. | 4 | PO4, PO5, PO10      |
| БП  | TK | Land reclamation works in land management   | Demonstration of the quality of land resources-Inventory of agricultural lands involved in agricultural turnover - Identification of negative processes - Reporting data on the state of land use by land types.   | 5 | PO3,PO5, PO7, PO9   |
| BD  | BK | Land inventory and improvement              | Demonstrate the qualitative state of the land fund-inventory of agricultural land involved in agricultural turnover-identification of negative processes-accounting data on the state of land use by type of land.   | 5 | PO3,PO5, PO7, PO9   |
| BD  | BK | Land quality improvement                    | The ability to use land quality improvement, the main provisions of land monitoring and use methods for obtaining and processing land monitoring data.   | 5 | PO3,PO5, PO7, PO9   |
| CHD | EC | State registration and registration of land | Study of the principles of operation and the legislative framework in the field of registration of land rights and the system of bodies that carry out state registration and accounting of land, perform work on assigning cadastral numbers to land plots-fill out the unified state register of land-carry  | 5 | PO2, PO3, PO9, PO11 |

|  |     |    |  |  |   |                     |
|--|-----|----|--|--|---|---------------------|
|  |     |    |  | out state registration of land rights.   |   |                     |
|  | CHD | EC | Land accounting and registration   | Understand the issues of the doctrine of land as a natural resource and means of production, forms of land ownership, land ownership and land use, development of land relations and land management in the Republic of Kazakhstan, goals, objectives, essence, legal bases, content and technology of land management, structure and principles of land management. | 4 | PO2, PO3, PO9, PO11 |
|  | CHD | EC | Application of satellite technology in land use                                | The ability to understand the process of obtaining aerial photographs via satellite; the device of aerial photography equipment and aerial photography equipment; classification of remote sensing methods; To assess the quality of aerial photography material   | 5 | PO10, PO12, PO9     |
|  | CHD | EC | Modern use of satellite technologies in land use of the Republic of Kazakhstan | Demonstrate direct and indirect signs of decoding; basic photogrammetric devices and technologies for decoding video information, methods for drawing up plans, maps, the graphic part of design and forecast materials; technology for creating original maps of various subjects for the needs of land management and land cadastre                                | 5 | PO10, PO12, PO9     |
|  | BD  | EC | Organization and planning of land cadastre works                               | Study of planning and organization of land management and cadastral works, legislative acts in the field of land management; structure of land management and land cadastral services; land cadastral works on linear and areal structures.  | 5 | PO6, PO8, PO9       |
|  | BD  | EC | Organization and planning of land  | The study of the discipline is the study of the land as a natural object, the legal and organizational regulation of land relations and the development of the land cadastre,  |   |                     |

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|  |     |    | management works   | the definition of the role of the state land cadastre in the management of the economy of the country, regions and municipalities on the basis of the regulation of land relations and land management.   | 4 | PO6,PO8, PO9       |
| Topographic surveys and land-cadastral works | BD  | BK | Cartography  | Design and use of plans and maps of natural (land) resources and is aimed at cartographic training of specialists who must know the input and output planning and cartographic documentation necessary for conducting work on land management, land and urban cadastre, the basics of organizing cartographic production. | 5 | PO4,PO6, PO10,     |
|  | CHD | BK | Features of cartography in land management                     | Know the mathematical basis of cartography projections used in cartography, the international nomenclature of maps of various scales, symbols for maps and plans of various scales, the rules of graphic design of map sheets of standard nomenclature.   | 4 | PO3,PO4,PO9, PO 11 |
|  | CHD | EC | Inside the economic land management of agricultural formations | The study of the main theoretical positions, patterns of development of land management, goals, functions and principles of land management; types, forms and objects of land management, land management systems, features of land management of various territories, land properties and natural properties.            | 4 | PO3,PO4,PO9,       |
|  | CHD | EC | On-farm land management of agricultural enterprises            | Maintenance of on-farm land management. Components and elements of the on-farm land management project. (on the example of a peasant farm). Placement of the on-farm trunk road network. Meaning, tasks, content. Organization of land and crop rotations. Tasks, content, methodology. Drafting a project.               | 4 | PO3,PO4,PO9,       |

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|  | BD | EC | Fundamentals of entrepreneurship              | Knowledge of legislative and regulatory acts regulating entrepreneurial activity in the territory of the Republic of Kazakhstan; classification of risks in entrepreneurship and methods of their assessment; the ability to analyze entrepreneurial activity and evaluate its effectiveness, correctly make decisions on the organization and functioning of entrepreneurial activity.   | 4 | PO2, PO3, PO11  |
|  | BD | EC | Commercialization and business planning       | Develops skills for evaluating the effectiveness of business ideas, commercial use of the results of R & D and development, contributes to the planning of the main stages of the production of a new product. Studies the types of intellectual property, strategies for the commercialization of technologies, contributes to the formation of experience in managing the process of developing and promoting a new product when choosing sources of financing. | 3 | PO2, PO3, PO11  |
|  | BD | EC | Topography                                    | Study of the main provisions of the use of ground-based and satellite images for creating cartographic materials, obtaining operational information from space sensing data, processing methods for use for land management, cadastre, land monitoring, and ecology.  | 4 | PO4, PO6, PO10, |
|  | BD | EC | Topographical works in land management        | Modern methods of creating and editing graphic images, starting with the simplest and ending with quite complex topographic documents, which are used in the conduct of land cadastral works.   | 4 | PO4, PO6, PO10, |
|  | BD | BK | Fundamentals of land taxation in the Republic | Understand the main regulatory legal acts in the field of regulation of activities for the  | 5 | PO2, PO3, PO9   |



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|  |     |    | of Kazakhstan   | legal support of land management and cadastre. Analysis of the features of this activity in relation to different land plots, as well as the legal regime of different categories of land.   |   |                             |
|  |     |    | Production Practice II  | Obtaining professional skills in the field of research work obtained in the study of land management works: filling in land cadastral documentation; registration of land uses and land holdings; land assessment work and the application of their results; distribution of land by category.   | 6 | PO2, PO4, PO5, PO 10, PO 11 |
| Land management of localities              | CHD | EC | Planning, arrangement of territories and cadastre of populated places | Study of the basic concepts, terms, definitions used in urban planning and planning of settlements; study the principles of settlement planning; learn to model possible lines of behavior in the exercise of professional functions in the process of monitoring the use of the land fund within the boundaries of settlements.                 | 5 | PO6,PO8, PO9                |
|  | CHD | EC | Cadastral zoning of localities  | The State Cadastre and planning of settlements is a single technological, interdepartmental system of accounting, registration and evaluation of real estate, as well as a specialized information and cadastral system of ordered information about the legal, economic, economic, spatial-territorial and other status of real estate objects. | 5 | PO6,PO8, PO9                |
| Planning and arrangement of land resources | CHD | BK | Inter-farm land management  | The concept and essence of inter-farm land management. The process of inter-farm land management. Formation of land-use of non-agricultural objects. Content and basics of the methodology drawing up a project for the formation of land use (land plot) of a   | 5 | PO2, PO4, PO9, PO 11        |

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|  |     |    | non-agricultural object. Preparation of proposals on the terms of granting a land plot and reorganizing existing land uses. |   |   |                      |
|  | CHD | BK | Effective placement of inter-farm work in the Land Use Management System.   | Demonstrate the economic and social conditions taken into account in land management, methods of land management design; study of technical design and design estimates, as well as ways to improve the efficiency of land use in the management system of the country's economic sectors.  | 5 | PO2, PO4, PO9, PO 11 |
|  | CHD | EC | Land management and planning of rural localities  | Design the theoretical foundations, methods and techniques for drawing up plans for land management and planning projects for rural localities, a set of rules and regulations for drawing up projects and plans. Use the general plan of the locality for various types of land management works, make plans for land and economic land management.                        | 4 | PO6,PO8, PO9, PO11   |
|  | CHD | EC | Creation of peasant (farm) farms in rural localities  | The ability to create methods for the development of schemes for the use and protection of land resources, schemes of land management, urban planning and other pre-project and forecast materials, urban planning and planning of settlements; To organize and plan work in the field of land management. Develop and conduct land management and cadastral documentation. | 4 | PO6,PO8, PO9, PO11   |
|  | CHD | EC | Land administration   | Obtaining theoretical knowledge and practical skills in performing land assessment works and actions to implement state control over the use of land resources, studying the features of land management at various administrative and territorial levels, as well as determining the effectiveness of the land management system.  | 4 | PO3,PO5, PO7, PO9    |

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|   | CHD | EC | Rational placement of agricultural enterprises of the Republic of Kazakhstan | Rational use of land for industrial and social purposes, while respecting the priority of environmental requirements for its protection, components of the project of inter-farm land management  | 4 | PO2, PO4, PO9, PO 11 |
| Agro-industrial planning and land improvement | CHD | EC | Land and real estate valuation   | Describe the main definitions and concepts of the state cadastral land assessment, the rules for its implementation. Ensure that students learn the basic methodological and technical recommendations, on the basis of which the cadastral assessment was carried out on the territory of the Republic of Kazakhstan.  | 4 | PO3,PO4, PO 8, PO11  |
|   | CHD | EC | Land cadastre and real estate valuation                                      | The study of the history of the state real estate cadastre; the main provisions of the state real estate cadastre; the methodology for obtaining, processing and using cadastral information; the procedure for carrying out cadastral activities; The formation of ideas about the use of modern software and technical means of information technology to solve the problems of maintaining the state real estate cadastre. | 4 | PO3,PO4, PO 8, PO11  |
|   | BD  | EC | Land management of the administrative district                               | Design the theoretical foundations, methods and techniques for drawing up land management plans and planning projects for rural localities, a set of rules and regulations for drawing up projects and plans. Use the general plan of the administrative district for various types of land management works, make plans for land and economic land management.   | 4 | PO6,PO8, PO9, PO11   |
|   | BD  | EC | Centralization of administrative districts                                   | Obtaining information in the implementation of land management actions can be a direct basis for the development of proposals for   | 4 | PO6,PO8, PO9, PO11   |


|                            |     |    |   |   |    |                           |
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|                            |     |    |   | the establishment of a special regime and conditions for the use of land.   |    |                           |
|                            | CHD | EC | Spatial planning, forecasting use of land resources   | Design and understand the methods of developing spatial planning schemes, forecasting the use of land resources, land management schemes, urban planning and other pre-project and forecast materials, land management projects, urban planning and planning of settlements; Suggest ways to effectively use land resources depending on the purpose of land use.   | 4  | PO6,PO8, PO9, PO11        |
|                            | CHD | EC | Land management planning                              | Be able to plan the purpose, tasks and functions of land management, methods and principles of land management, quantitative and qualitative composition of land resources of the Republic of Kazakhstan.   | 4  | PO6,PO8, PO9, PO11        |
|                            | BD  | EC | Minor program   | Be able to carry out geodetic works on hydraulic structures. Organize the execution of works calculate and complete the effective use of land resources, plan and organize the work of land management enterprises.   | 8  | PO6, PO7, PO9, PO11, PO12 |
| Final certification module |     |    | Pre-graduate practice                                 | To collect actual material on production activities and practical material on the topic of the thesis; geographical location and detailed characteristics of the location of production; to get acquainted with the purpose of the object, its working, optimal parameters, as well as the equipment used (power, performance of equipment; principle of operation; advantages of this type of equipment. | 8  | PO4,PO7, PO10, PO11       |
|                            |     |    | Writing and defending a thesis (project) or passing a | Demonstrate the skills of introducing research work the ways and tasks of their accomplishment and their achievement.   | 12 | PO4,PO7, PO10, PO11       |

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|-------|--|--|--------------------|--|-------|--|
|       |  |  | comprehensive exam | Conduct organizational training in the preparation of land cadastre documents obtained in the course of studying at the university and in previous types of professional practice in the specialty and for the implementation of the diploma project (work). |       |  |
| Total |  |  |                    |  | 240cr |  |

## APPROVAL SHEET

by Educational Program code 6B07350 – «Land management»

Director of AID  Naukenova A. S.

Director of ASD  Nazarbek U.B.

Head of DEK  Bazhirov T.S.

