Non-commercial joint-stock company
«Kazakh national agrarian research university»

AGREED
Head of the RSU "Balkash-Alakol basin Inspection"
_____ R.Imanbet
«____» _____2023 y.

APPROVED
Chairman of the Board-Rector
_____ A.Kurishbaev
«05» 04 2023 y.

EDUCATIONAL PROGRAM

«7M08603-Water resources management using IT-technologies»

Degree awarded: Master of agriculture under the educational programme "7M08603- Water resources management using IT-technologies»
(profile direction 1 year)

Almaty, 2023 y.

Approved at the meeting of the Department «Water resources and melioration»
Protocol №__, «__» _____ 2023 y.
Head of the department _____ Ye.Zhaparkulova

Considered at meetings Academic Committee of the Faculty
of «Water, Land and Forest Resources»
Protocol № ___ « ___» _____ 2023 y.
Chairman of the AC of the faculty _____ L.Makhmudova

Reviewed by the Educational Methodological Council of the University and recommended to the Academic Council
Protocol № 03 « 28 » 03 2023 y.
Chairman of the EMC of the University _____ A.Kaiyrbaeva

The educational program was approved at the meeting of the Academic Council of KazNARU
Protocol № 11 , « 05» 04 2023 y.

Agreed with:

Dean of the Faculty	T.Kerteshev
Head of the Department	Ye.Zhaparkulova
Assoc.professor	Ye.Kaipbayev
Master student	A.Aitbayev

Employers:

Head of the RSU "Balkash-Alakol basin Inspection"	R.Imanbet

Agreed with:

Head of the Educational Programs Design Department	Zh. Kussainova
Head of training Department	A.Koishibayev
Head of the Practice and Employment Sector	B.Yesimova
Deputy Head of the Department of Design of Educational Programs	Sh.Kapar

Application

It is intended for the training of masters in the modular educational program 7M08603-«Water resources management using IT-technologies» in NAO “Kazakh national agrarian research university»

Regulations

«On Education» The Law of the Republic of Kazakhstan dated 27 July, 2007 No. 319-III;
Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 №2;

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

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

Rules of the organization of the educational process on credit technology of training. Order of the Minister of Education and Science of the Republic of Kazakhstan dated 12.10.2018 No. 563;

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

Order No. 106 of the Minister of Science and Higher Education of the Republic of Kazakhstan dated October 12, 2022. Rules for keeping the register of educational programs, implemented by the organizations of higher and (or) postgraduate education, as well as the grounds for inclusion in the register of educational programs and exclusion from it.

Professional standard: "Water supply, wastewater disposal and protection of water resources" Appendix № 6 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 11.12.2018, № 263.

Professional standard: "Hydraulic reclamation" Appendix № 7 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 339.

Professional standard: "Construction of dams and dikes" Appendix № 9 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 262.

Professional standard "Operation of water supply and sanitation systems" Annex № 21 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 262.

Professional standard: "Pasture watering" Appendix No. 3 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan" Atameken No. 26.12.2019.

Professional standard: "Design and operation of water supply and drainage networks" Annex № 6 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 263

Professional standard: "Design and operation of reservoirs of seasonal regulation" Annex № 7 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 339.

Professional standard "Design and operation of river water intake structures" Appendix № 8 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 263.

Professional standard: "Design and operation of collector-drainage network for hydromelioration systems" Appendix № 5 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" from 26.12.2019 № 263.

1. Passport of modular educational program

Education area code and classification	7M08 Agriculture and bioresources
Code and classification of training areas	7M086-Water resources and water use
Code and name of the educational program	7M08603- Water resources management using IT-technologies
Type of educational program	active
The purpose of the educational program	Training of managerial personnel for the water industry of the agro-industrial complex on water resources management and rational water use using IT technologies with in-depth professional training
A-level ISCED	7
The level on the NQF	7
Level by ORC	7
Number of the application to the license for the direction of training	KZ42LAA00006720 July 05, 2019
Accreditation The name of the accreditation body The period of validity of accreditation	Certificate №1920 KE0134 KazSEE 13.12.2019 -12.12.2024
Degree awarded	Master of agriculture under the educational programme «7M08603- Water resources management using IT-technologies»
Training results	Table 2
List of qualifications and positions	Managerial work in industrial institutions, in the offices of district, regional, republican structures, in local and republican bodies of water management and basin management in the following positions:: Engineer-Hydrologist (6th level of the ORC) Design Engineer (ORC Level 6)) Hydraulic Engineer (7th level ORC)
Field of professional activity	Water management, agricultural, environmental protection, design, expert, administrative institutions, industry laboratories, divisions, sections, sectors, departments, environmental departments under local, regional and republican management structures, institutions of control and analytical service, etc.
Sphere and object of professional activity	- water resources management, improving the efficiency of water resources use, creation of integrated water management systems, protection and restoration of water bodies;agricultural water supply, drainage and wastewater treatment, irrigation of territories. Objects of professional activity - water bodies; surface and underground waters, water management systems and facilities; agricultural water supply, irrigation and drainage systems; - hydraulic structures for various purposes; - hydro-reclamation systems.
Functions of professional activity	design, production and technical, organizational and managerial activities in various agricultural and water management enterprises and organizations. - organize and manage the work of design, water management, hydropower, agricultural organizations and enterprises;

	- to carry out expertise, supervision and control over the use of water resources, audit and monitoring of water management facilities, etc.
Types of professional activity	- implementation of organizational and technological activities in production institutions of various branches of water and agriculture, implementation of management activities, performing management and marketing tasks; - participation in the preparation of regulatory documents, standards, GOST-s, standard projects related to industry activities
To be competent	- about the achievements and trends in the development of water resources in Kazakhstan, the countries of the far and near abroad; - in matters of innovative technical and technological production in all industries, including agriculture; - about current problems and prospects of socio-economic development of Kazakhstan, current trends in the development of the world economy

2. Learning outcomes on EP

Codes	**Learning outcomes**
LO1	It shows the ability to think creatively, analyze the environment and be ready to make managerial decisions, team influence from leadership positions based on knowledge of management psychology to achieve the goals of the organization
LO 2	Expresses his opinion in a professional conversation with colleagues in an international environment in English, the ability to maintain a conversation on a wide range of issues
LO3	Demonstrates knowledge of modern research activities in the field of scientific experiment organization, methodology of scientific research and modeling using geoinformation systems and remote sensing in water management
LO4	Demonstrates the ability to model business decisions, the ability to effectively manage business activities, and the ability to organize and conduct research
LO5	Confirms the ability to organize monitoring of water bodies using information technologies, develop measures for integrated water resources management and improve the quality of water bodies
LO6	Demonstrates the ability to systematize knowledge and choose cost-effective and environmentally sound approaches to water management
LO7	Analyze the quality indicators of agricultural water supply with the use of geoinformation technologies and make decisions on improvement
LO8	Analyze and use in personal activities various types of information and communication technologies: Internet resources, cloud and mobile services for the search, storage, processing, protection and dissemination of information
LO9	Demonstrate knowledge in the field of programming, mathematical modeling, analysis and synthesis, strive for continuous improvement of the level of theoretical knowledge in the field of water resources use, protection and management
LO10	Conduct experimental research work in accordance with the individual master's work plan approved by the university
LO11	Conduct laboratory and experimental tests under the supervision of a scientific consultant
LO12	Offer developments to improve the management of water resources using the achievements of IT technologies

3. Content of the educational program

№	UC/ EC	Module names	Code of discipline	The name of the discipline forming the competence	Total in academic credits	Volume in hours							Distribution of credits by courses and semesters		Department	Form of control
						Total academic hours	Auditorium				Extracurricular		1 course			
							Lectures	Practical class	Laboratory research	Other (practice)	IWMST	IWMS	1	2		
1			**Theoretical training**		**39**	**1170**	**84**	**216**	**0**	**90**	**150**	**630**				
1.1			**Cycle of basic disciplines**		**10**	**300**	**24**	**76**	**0**	**0**	**50**	**150**				
1)			**High school component**		**6**	**180**	**18**	**42**	**0**	**0**	**30**	**90**				
			including:													
1.1.1	UC	Management and organisation of the training process	IYa 60201	Foreign language (professional)	**2**	60	6	14			10	30	2		24	exam
1.1.2	UC		Man 60202	Management	**2**	60	6	14			10	30	2		18	exam
1.1.3	UC		PU 60203	Psychology of management	**2**	60	6	14			10	30	2		10	exam
2)			**Elective Component**		**4**	**120**	**12**	**28**	**0**	**0**	**20**	**60**				
			educational trajectory №1 «Water resources and water use»													
1.1.4	EC	Remote analysis of statistical data	UGISRS WI 60205	Use of geographic information systems and remote sensing in the water industry	**4**	120	12	28	0	0	20	60	4		6	exam
			educational trajectory №2 «Water resources management using information technologies»													
1.1.5	EC	Remote analysis of statistical data	ESGA 60207	Engineering Surveying and Geoinformatic Applications	**4**	120	12	28	0	0	20	60	4		6	exam
1.2			**Cycle of specialized disciplines**		**29**	**870**	**60**	**140**	**0**	**90**	**100**	**480**				
1)	EC		**University component**		**9**	**270**	**27**	**63**	**0**	**0**	**45**	**135**				

1.2.1	EC	Planning and modeling	MBS 60301	Modeling of business solutions	**3**	90	9	21			15	45	3		18	exam
1.2.2	EC		MSRWRWU 60303	Methodology of scientific research into Water resources and water use	**3**	90	9	21			15	45		3	6	exam
1.2.3	EC		PMFE 60306	Project management in the field of entrepreneurship	**3**	90	9	21			15	45	3		18	exam
2)	EC		**Elective Component**		**11**	**330**	**33**	**77**	**0**	**0**	**55**	**165**				
			educational trajectory №1 «Water resources and water use»													
1.2.4	EC	Management of water resources and their quality	IWRM 60306	Integrated water resources management	**5**	150	15	35			25	75	5		6	exam
1.2.5	EC		PWAS 60309	Planning in the water and agriculture sector	6	180	18	42			30	90	6		6	exam
			educational trajectory №2 «Water resources management using information technologies»													
1.2.6	EC	Management of water resources and their quality	UMVR 70312	Water Resources Managenment and Modeling	**5**	150	15	35			25	75	5		6	exam
1.2.7	EC		VV 70311	Water Supply and Wastewater Disposal	**6**	180	18	42			30	90	6		6	exam
3)			ZT60300	**Research practice**	**9**	**270**				**90**		**180**		**9**	6	report
2			MGZZh/NIRM/RWMDS 603001	Research work of a graduate student, including internship and execution of a master's thesis	**13**	**390**				**130**		**260**		**13**	6	report
4			**Final certification**		**8**	**240**				**90**		**150**		**8**		
1)			Registration and defense of the master's thesis													RaDMT
		TOTAL:			**60**	**1800**	**84**	**216**		**310**	**150**	**1040**	**30**	**30**		

[1] Note:

№	Department
1	Agronomy, breeding and biotechnology
2	Soil science, agrochemistry and ecology
3	Horticulture, plant protection and quarantine
4	Forestry, Hunting and Fisheries
5	Land resources and cadastre
6	Water resources and land reclamation
7	Agricultural machinery and mechanical engineering
8	"Machine Use" named after I.V.Sakharov
9	Energy saving and automation
10	IT technology and automation
11	Obstetrics, surgery and reproductive biotechnology
12	Biological safety
13	Clinical veterinary medicine
14	Microbiology, virology and immunology
15	Veterinary Sanitary Expertise and Hygiene
16	"Physiology, morphology and biochemistry" named after N.U. Bazanova
17	Accounting, auditing and finance
18	"Management and organisation of agribusiness" named after H.D. Churin
19	Law
20	Zooengineering
21	Food technology and safety
22	Social disciplines
23	Kazakh and Russian languages
24	Foreign languages
25	Physical education and sports
26	Military Department

4. Map of competence modules (profile direction)

Professional competences		Competence code	Learning Outcomes	Learning outcomes code
Basic competences				
Disciplines				
Module 1. Management and organisation of the training process (The management and training process is organised)				
Foreign language (professional)	Be competent in working with lexographic sources in a foreign language (traditional and on-line)	CC1	English language skills in professional activities	LO-2
Management	Possess general theoretical rules of management of socio-economic systems; skills of practical solution of managerial tasks	CC1	Studies the world experience of management, as well as the peculiarities of Kazakhstani management, possesses the solution of practical issues related to the management of various aspects of organisations' activities	LO-1,4,12
Psychology of management	Formation of students' need for knowledge and skills of managerial qualities and professionally significant qualities of future specialists	CC1	Fully mastered professional and self-management skills	LO-1
Module 2. Remote analysis of statistical data (Innovative water management practices will be developed)				
Use of geographic information systems and remote sensing in the water industry	Be competent in methods of control and monitoring of water bodies through the use of GIS and IT technologies, digital maps, mathematical models, application of information-analytical databases, computer graphics tools, statistical and numerical methods in hydrology, design of hydraulic structures	CC2	Demonstrates knowledge of modern directions of scientific-research activities in the field of scientific experiment organisation, methodology of scientific research and modelling using geoinformation systems and remote sensing in the water sector.	LO-3,8,9
Engineering Surveying and Geoinformatic Applications		CC2	Analyse and use various types of information and communication technologies in personal activities: Internet resources, cloud and mobile services for searching, storing, processing, protecting and disseminating information.	LO-3,8,9
Professional competences		**Competence code**	**Learning Outcomes**	**Learning outcomes code**
Module 3. Planning and modeling (The methodology of project management and research in the water sector is learnt)				
Modeling of business solutions	To be competent in using the principles of analysis and organising and conducting scientific research using modern methods of mathematical	CC3	Learning how to make good business decisions	LO-3,4,6,7,9, 10,12
Methodology of scientific research into		CC3	Carries out planned, organisational and research works in the field of water resources and water use	LO-3,4,6,7,9, 10,12

Water resources and water use	modelling and analysis of technological systems.			
Project management in the field of entrepreneurship		CC3	Knows different forms of management Sets a plan and achieves goals	LO-3,4,6,7,9, 10,12
Module 4. Management of water resources and their quality				
Integrated water resources management	To be competent in carrying out scientific projects, studies and calculations on the hydraulics of waterworks in the professional field and water resources management and water quality of transboundary rivers.	CC4	Confirms the ability to organise monitoring of water bodies using information technologies, develop measures for integrated water resources management and improving the quality of water bodies	LO-3,5,7,9,10,11,12
Planning in the water and agriculture sector		CC4	Analyse quality indicators of agricultural water supply using geo-information technologies and make decisions on improvement.	LO-3,5,7,9,10,11,12
Water Resources Managenment and Modeling		CC4	Demonstrate knowledge in programming, mathematical modelling, analysis and synthesis, strive to continuously improve the level of theoretical knowledge in the field of water resources use, protection and management.	LO-3,5,7,9,10,11,12
Water Supply and Wastewater Disposal		CC4	Water supply and drainage is the most efficient systems and schemes of water supply and sewerage, classification of water intake structures from surface and underground sources, design and study of water pipelines, study of water supply and drainage pumping stations.	LO-3,5,7,9,10,11,12

5. Summary table showing the amount of loans disbursed by educational program:

Course of study	Semester	Number of subjects studied				Number of academic credits				Total	Total in academic hour	Number	
		CS		MS		Theoretical training	Manufacturing practice	EIRM	Final certification			Exam	Report
		UC	CC	UC	CC								
I	1	3	1	3	2	**30**				30	900	9	
	2						9	13	12	30	900		9
Total		**3**	**1**	**3**	**2**	**30**	**9**	**13**	**12**	**60**	**1800**	**9**	**9**

Appendix 2.2

Information about the disciplines

№	Name of discipline	Brief description of the discipline	Number of credits	Semester	Emerging competencies (codes)
1	**Theoretical training**		**39**		
1.1	**Cycle of basic disciplines**		**10**		
1)	**University component**		**6**		
1.1.1	Foreign language (professional)	The main goal of the discipline is the systematic deepening of communicative competence in the framework of international standards of foreign language education based on the further development of the skills and abilities of active proficiency in English in the professional activities of the future master of sciences. Development of a master student skills: - reading literature in English in the specialty for the receipt and transmission of scientific information; - registration of the extracted information in the form of translations, annotations, abstracts; - conducting conversations in English on topics related to the specialty and scientific work of the master's program student.	2	1	***To be competent:*** - work with lexicographic sources in a foreign language (traditional and on-line).
1.1.2	Management	The discipline "Management" consists of organizational elements of the study of the management process, communication and decision-making, management functions such as planning, organization, coordination and control, team work and leadership, as well as the study of various functional departments in the organization such as production, marketing, Finance, personnel management.	2	1	***To be competent:*** - Distinguish between fundamental management concepts and skills and learn from real managers how to apply them. provide a brief overview of the historical development of management theories and the implications for the management of organizations; - know the management of Kazakhstan within the discipline;

					- be able to identify internal and external factors and organizational forces that managers must face in their daily work; - Be qualified in critical thinking when presenting management problems and social responsibility and management ethics in management.
1.1.3	Psychology of management	Discipline examines the subject, nature, tasks and structure of management psychology, methods of psychological research and basic approaches to its study. Examines the psychology of the subject of management, the psychology of cognitive activity, perceptual, mnemic, thought processes in management. The course forms ideas about etiquette in the activity of a modern business person, communicative competence of a manager, emotional and volitional states in management activities and ability to manage activities.	2	1	***To be competent:*** -formation of students' need for knowledge and skills of a managerial nature and professionally important qualities of future specialists; - formation of students' understanding of the basics of management; -the development of independence in the search for information; -the use of adequate methods of personality research; -practical use of the obtained psychological knowledge in various conditions of management.
2)	**Elective Component**		**4***		
	educational trajectory №1 «Rational use and protection of water resources**»**				
1.1.6	Use of geographic information systems and remote sensing in the water industry	The discipline studies methods of monitoring monitoring of water bodies through the use of GIS and IT technologies, digital maps, mathematical models.	**4**	1	***To be competent:*** -geographic information systems and remote sensing in the water sector; - in the implementation of scientific projects and independent organization; - conducting research in the field of integrated water resources management;
	educational trajectory №2 «Water resources management using information technologies»				
1.1.9	Engineering Surveying and	The use of GIS in agriculture, forestry and water management. Information support for consumers. Remote and satellite monitoring methods. Technologies for the use of GIS in the water	**4**	1	***To be competent:*** -geographic information systems and remote sensing in the water sector;

	Geoinformatic Applications	sector. Database management systems (DBMS). Global Positioning Systems (GPS). Methods of analysis and decryption of geoinformation. Mapping systems. Methods of digital image processing. Cartographic graphics. The functionality of modern GIS.			- in the implementation of scientific projects and independent organization; - conducting research in the field of integrated water resources management;
	Cycle of profile disciplines University component / Elective Component				
1.2	**Cycle of profile disciplines**		**25**		
1)	**University component:**		**9**		
1.2.2	Methodology of scientific research into Water resources and water use	Methodology of theoretical and experimental research in the field of water resources management. Analysis of theoretical and experimental studies and formulation of conclusions and proposals. Introduction and effectiveness of scientific research. General requirements and rules for the design of research work. General requirements for research work.	3	2	***To be competent:*** - in the implementation of scientific projects; - independent organization of scientific projects; - conducting research in the field of water resources management.
1.2.3	Project management in the field of entrepreneurship	In market conditions, the course "Management of Business Activity" holds a specific place in the system of training of undergraduates for the agro-industrial sector. It forms eco-nomic thinking, entrepreneurial skills, abilities to find the right place, niche market, to start the business, to organize and to effectively manage own enterprise. The competitiveness of national economy depends primarily on living position, talent, outlook, theoretical knowledge and practical skills, economic activity of entrepreneurs.	3	1	***To be competent:*** - to understand the social importance of business activity, to make management decisions and to bear responsibility for them; - to use innovative technologies in business activity, search and process information necessary for solving professional tasks; - plan and implement entrepreneurial ideas, based on professional and personal development.
1.2.4	Modeling of business solutions	Acquaintance with the decision-making process, starting from formalization of the initial problem, through building and solving a mathematical model on a computer to analyzing the decision and forming a management decision. Formation of skills in the construction and solution of mathematical models and analysis of these solutions on a computer. Consideration of production, transport and financial models of tasks for the choice of management decisions.	**3**	1	***To be competent:*** able to independently conduct research using modern methods of mathematical modeling and analysis of the results of a scientific experiment
2)	**Elective component:**		**11***		
№1 «Rational use and protection of water resources»					

1.2.5	Integrated water resources management	Principles, planning and national plan for integrated water resources management. Improvement and harmonization of water legislation in the field of water resources management. Implementation of the environmental component integrated water resources management and water quality management.	5	1	***To be competent:*** - in matters of modern educational technologies; - in the implementation of scientific projects and independent organization and conduct of research in the field of integrated water resources management.
1.2.8	Planning in the water and agriculture sector	Strategic planning of water resources use and protection. State planning in the field of water resources use and protection. Principles of ecosystem (basin) prosperity of the Republic of Kazakhstan. The pattern of usage of water resources protection. Long-term planning and operational decision-making in the prosperity and conservation of water resources. Integrated water resources management. The main directions of water policy.	6	1	***To be competent:*** - planning in the water and agriculture sector - in matters of modern trends and methods of planning in the field of water and agriculture technologies;
educational trajectory №2 «Water resources management using information technologies»					
1.2.10	Water Supply and Wastewater Disposal	Water supply and wastewater disposal are the most efficient systems and schemes for water supply and sewage, classification of water intake structures from surface and underground sources, design and research of water supply systems, research of water supply and drainage pumping stations.	6	1	***To be competent:*** - in matters of modern trends and methods of planning in the field of water and agriculture technologies; - - in the implementation of scientific projects, research and calculations on the hydraulics of water facilities in the professional field.
1.2.11	Water Resources Managenment and Modeling	When studying the discipline, remote sensing methods, electronic maps are used, and undergraduates also get acquainted with experimental research using simulating mathematical models. Mapping as a system modeling of water resources.	5	1	***To be competent:*** - water management and water quality of transboundary rivers; - carrying out reconstruction of basin schemes of water regulation and water distribution.
3)	**Research practice**	The research practice of a master's student is conducted in order to get acquainted with the latest theoretical, methodological and technological achievements of domestic and foreign	**9**	2	***To be competent:*** - the ability to use skills in the organization of research and scientific work;

		science, modern methods of scientific research, processing and interpretation of experimental data.			- the ability to independently learn new research methods, to use the methods of science in professional activity
1)	Experimental research work of a master's student (ERWM), including an internship and the implementation of a master's project	familiarization with innovative technologies and new types of production in organizations of relevant industries or fields of activity	13	2	***To be competent:*** -ability to logical thinking, analysis, synthesis, comparison, generalization for systematization and forecasting of information - the ability to determine the range of tasks within the set goal and choose the best ways to solve them, based on existing legal norms, available resources and limitations
4	**Final assessment**	The purpose of the final certification is to evaluate the achieved learning outcomes and mastered competencies upon completion of the study of the Master's degree program	**12**		***To be competent:*** -ability to logical thinking, analysis, synthesis, comparison, generalization for systematization and forecasting of information - the ability to determine the range of tasks within the set goal and choose the best ways to solve them, based on existing legal norms, available resources and limitations
1)	Registration and defense of the master's thesis				
	TOTAL:		**60**		

Appendix to EP

Appendix 1

Practice base

№	Name of companies, enterprises, organizations	Contacts Tel, e-mail
1	LLP "Institute of Geography"	Almaty, Kabanbai Batyr/Pushkina 67/99
2	GU "Kazselezashchita" of the Ministry of Emergency Situations of the Republic of Kazakhstan	Almaty, Kaldayakov str., 70, +7(727) 2912755
3	D. Kunaev TANK RSE "Kazvodkhoz"	Almaty region, ul. Melioratornaya, 1A 8 (72737) 1 80 00
4	Design Institute of PC "Kazgiprovodkhoz"	Almaty, 434 Seifullin Ave., 8 (727) 2793522
5	GKP "Almaty Su"	Almaty, 196 Zharokov str., 8 (727)2276001
6	Branch of RSE on PVC "Kazhydromet" Ministry of Energy of the Republic of Kazakhstan	Almaty, 32 Abay Ave. 8 (727)2676464
7	East Kazakhstan branch of RSE "Kazvodkhoz"	Ust-Kamenogorsk, Kazakhstan str., 99/1
8	Kyzylorda branch of RSE "Kazvodkhoz" KVR MAGiPR RK	Kyzylorda, Tole bi str., 66, 8 (7242) 233250
9	Zhambyl branch of RSE "Kazvodkhoz" KVR of the Ministry of Agriculture of the Republic of Kazakhstan	Zhambyl region, Taraz, Zhaugash Batyr str., 1a, 8 (7262) 425490
10	Turkestan branch of RSE "Kazvodkhoz" KVR MAGiPR RK	Shymkent, Mukhamed Haidar Dulati str., 5 8 (7252) 54 87 37
11	RSU Aralo-Syrdarya BVI KVR MAGiPR RK	Kyzylorda, Amangeldy str., 107, 8 (7242)235607
12	Balkhash-Alakol BVI KVR MAGiPR RK	Almaty, Abylai Khan Ave., 2, 8 (7272)453253
13	MAEKKazatomprom LLP	West Kazakhstan region, Mangystau region, Aktau 8 (7292)564208
14	" Zonal hydrogeological and reclamation center»	Almaty, Zhetysu district, 113 Baisheva Street 8 (727) 264 26 29
15	State enterprise " Kostanay Su»	Kostanay region, Kostanay, Abay street 19 8(7142)222500
16	LLP "Design Institute named after Zh. R. Dzhanekenov"	Almaty region, Taldykorgan, D. Konaev str., 20
17	LLP "Water resources-Marketing"	Shymkent, G. Ormanov str., 17, 8 (7252) 321 195
18	Panfilov production site of the Almaty branch of the RSE "Kazvodkhoz" KVR MAGiPR RK	Almaty region, Zharkent, Golovatskogo str., 290, 8 (72831) 9 40 12
19	RSE " Kazvodkhoz»KVR MAGiPR RK	Nur-Sultan, Pushkin street, 25, 8 (7172) 24 85 26
20	SCC " Taza Su-2014»	Zhambyl region, T. Ryskulov district, Kulan village, K. Asylov str., 54
21	GKP " Alakolirrigation»	Almaty region, Alakol district, Usharal, V. Toshchenko str., 19, 8 (72833) 3 52 71
22	GKP "Turkestan-Su"	Turkestan region, Turkestan, S. Erubayev str., 255, 8 (72533) 4 21 92
23	Kegens district " Department of Housing and Communal Services and housing Inspection»	Almaty region, Kegen region, Kegen village, B. Momyshuly str., 9, 8 (7277) 721475

24	KGP "Ayagoz Su"	East Kazakhstan region, Ayagoz, 61 Barak batyr str., 8(7223)730301
25	«Uralvodproekt» LLP	WKO, Uralsk, ul. Hamid Churin, 119, 8 (7252) 535057
26	Kyzylorda branch of RSE “Kazalysushar»	Kyzylorda region, Kazalinsky district, Aiteke bi str., 1, 8 (724) 3851687
27	GKP " Kapshagai Su Arnasy»	Almaty region, Kapchagai, Koichumanov street, 4, 8 (72772) 4 19 48
28	KGP "Balkhash Su»	Karaganda region, Balkhash, Sabitova MKR, 18b, 8 (71036) 65490