

Ministry of Agriculture of the Republic of Kazakhstan
Seifullin University

DISCUSSED
at session
Academic Council of the
University
Protocol № 15
30.05.2019



EDUCATIONAL PROGRAM
“Information Business Analytics”
(program name)

Code and classification education	7M06 Information and communication technology
Code and classification of training areas	7M061 Information and communication technologies
Code in the International standard classification of education	0613
Degree awarded	Master of Technical Sciences / Engineering and Technology in the educational program 7M061 - “Information Business Analytics”
Duration of training	2; 1,5; 1 years

Nur-Sultan, 2019

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The team of authors was approved by the order of JSC "S. Seifullin KATU", № 932-N from 13.12.2018.

Educational program 7M061 - "Information Business Analytics" was considered at the meeting of the Department "Information and communication technologies", Protocol № 12 from 13.02.2009, and approved by the scientific Council of the faculty of computer systems and vocational education, Protocol № 11 from 14.02.2019.

Dean of the faculty of CSVT



K.A. Sarbasova

Head of the Department
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1 Passport of the educational program

Code and classification education	7M06 Information and communication technology
Code and classification of training areas	7M061 Information and communication technology
Code in the International standard classification of education	0613
Name of educational program	Business-Informatics
Type of educational program	New
Purpose of educational program	Training of professionals in the development and use of information systems and technologies in business, with knowledge in the field of Informatics, Economics and business administration, taking into account innovations in science, education, industry and business.
Level on NQF	7
Level on ORK	5-8
Learning outcome	<ol style="list-style-type: none"> 1. Apply the functional - stylistic characteristics of the scientific presentation of the material in the studied foreign language, general scientific terminology and the terminological sublanguage of the corresponding specialty in the foreign language, to know the basics of business correspondence in the framework of international cooperation. 2. The ability to design and carry out comprehensive research, including interdisciplinary, based on a holistic systemic scientific worldview using knowledge in the field of history and philosophy of science, psychology, to analyze modern problems of history and philosophy of science and psychology. 3. Use the fundamental foundations of the modern education system; use psychological and pedagogical knowledge; analyze and interpret various theoretical concepts; identify and formulate pedagogical problems in the form of urgent tasks, understand the main categories and concepts of psychological science that describe cognitive, emotional-volitional, motivational and regulatory areas. 4. Apply mathematical knowledge to solve scientific and technical problems and applied problems associated with the

	<p>development and use of information technology, the main classes of mathematical models for the analysis of phenomena, processes; use methods of system analysis and modeling in research activities.</p> <p>5. Understand the essence of economic processes and the main indicators of their relationship, conduct a search and analysis of innovations in economics, management and ICT, apply research tasks, choose methods of experimental work, and prepare the basis for scientific research.</p> <p>6. Профессионально решать задачи производственной и технологической деятельности с учетом современных достижений науки и техники, включая: разработку алгоритмических и программных решений в области системного и прикладного программирования, разработку математических, информационных и имитационных моделей по тематике выполняемых исследований.</p> <p>7. Able to use modern technical means and information technologies to solve analytical and research problems, Implement in practice modern methodologies for managing the life cycle and quality of systems, software and information technology services.</p> <p>8. To take part in the management of projects for creating information systems at the stages of the life cycle, implement and justify the choice of design decisions by types of information systems support, interpret and present the results of scientific research, draw up practical recommendations based on them, put forward fundamentally new hypotheses, predict trends.</p>
Legal and regulatory framework	<ul style="list-style-type: none"> • Constitution of the Republic of Kazakhstan. • Law of the Republic of Kazakhstan dated July 27, 2007 № 319-III "On education" (with amendments and additions as of 01.01.2009). • Order of the Minister of education and science of the Republic of Kazakhstan dated October 31, 2018 №604 "On approval of state educational standards at all levels of education". • National qualifications framework of 16.03.2016 • Industry qualifications framework in the field of information and communication technologies, No. 1 of 20.12.2016. • Professional standards: “System analysis in information and communication technologies”, “Business analysis in information and communication technologies”, “Business analytics and IT project management”
Department	Information and communication technologies

2 General characteristics of the educational program

2.1 Relevance

At present, competencies in the field of information business analytics are extremely sought after by companies striving to improve their corporate governance and strategic management processes. These competencies are relevant for any company.

The profession allows you to realize your creativity and creativity. Specialists in the field of information business analytics can influence the success of the company by effectively managing the development of the innovative potential of the enterprise, thereby ensuring rapid career growth. A master's degree in the Information Business Analytics program provides an opportunity to enter the dynamic world of business, management and entrepreneurship.

2.2 Competitive advantages

The program involves acquaintance with the main types of analytical information systems that make it possible to translate managerial theory into a practical plane. Unlike traditional courses on the study of software products, this program pays considerable attention to the study of methods implemented using information systems and business tasks, the solution of which is aimed at the introduction of modern information technologies. In the process of training, students complete practical tasks according to the real data of their companies.

2.3 Potential professions (positions)

- Heads and business analytics of IT departments and analytical departments of organizations and companies.
- Consultants in the field of analytical applications and business intelligence systems.
- Specialists in consulting and innovative companies requiring professional knowledge in the field of economics, mathematics, management and information technology, as well as in the field of electronic business.

3 Competency model (portrait) of a graduate

3.1 Areas of professional activity

The scope of professional activity of graduates who have mastered the master's program includes

- design of enterprise architecture;
- strategic planning for the development of IP and ICT enterprise management;
- organization of the processes of the life cycle of IP and ICT enterprise management;
- analytical support of decision-making processes for enterprise management.

A graduate in this area and profile of training can carry out professional activities in:

- organizations of any legal form (commercial, non-profit, state, municipal) in which graduates work as executors or managers in various services of the administrative apparatus;
- financial, economic and analytical divisions of enterprises and institutions of all legal forms, banks, insurance companies;
- bodies of state and municipal government;
- structures in which graduates are heads of small and medium enterprises in various fields of business;
- structures in which graduates are entrepreneurs creating and developing their own business.

3.2 Types of professional activity

In accordance with the selected types of professional activity, which the master's program is oriented to, the graduate should be ready to solve the following professional tasks:

Organizational and management activities:

- organization of a survey of enterprise architecture;
- development and implementation of a strategy for the development of enterprise architecture;
- management of the development of electronic regulations for enterprises and its IT infrastructure;
- lifecycle management of the enterprise IT infrastructure;
- development of recommendations for optimizing the costs of maintenance and development of IT infrastructure;
- management of design and implementation groups;
- management of electronic enterprises and e-business units of non-network companies;
- management of enterprise information security;

Analytical activity:

- analysis and modeling of enterprise architecture;

- selection of methodology and tools for analysis and improvement of enterprise architecture;
- analysis of customer needs in the field of ICT;
- analysis of the compliance of business processes and IT infrastructure with the strategies and goals of the enterprise;
- analysis of innovations in economics, management and ICT.

Project Activities:

- design of enterprise architecture;
- development and implementation of enterprise architecture components;
- project management of the creation and development of enterprise architecture.

Research Activities:

- research and development of models and techniques for describing enterprise architecture;
- development of methods and tools for the creation and development of electronic enterprises and their components;
- research and development of methods for improving the IT infrastructure of the enterprise;
- Search and analysis of innovations in economics, management and ICT.

Innovative and entrepreneurial activity:

- management of innovative and entrepreneurial activities in the field of ICT;
- management of the development of innovative potential of the enterprise.

Pedagogical activity:

- teaching management and IT disciplines;
- Development of educational programs and teaching materials on managerial and IT disciplines.

3.3 General competencies

- Use the basics of philosophical knowledge to form a worldview position.
- Analyze the main stages and patterns of the historical development of society for the formation of a civic position.
- Use the basics of economic knowledge in various areas of life.
- Use the basics of legal knowledge in various areas of life.
- Ability to communicate verbally and in writing in the state or Russian and foreign languages for solving problems of interpersonal and intercultural interaction.
- Work in a team, tolerantly perceive social, ethnic, confessional and cultural differences.
- Ability to self-organization and self-education.

3.4 Core competencies

A graduate of a master's program must have the following basic competencies:

- ability to abstract thinking, analysis, synthesis;
- willingness to act in non-standard situations, bear social and ethical responsibility for decisions made;
 - readiness for self-development, self-realization, use of creative potential.
- willingness to communicate verbally and in writing in Russian and foreign languages to solve the problems of professional and scientific activities;
 - willingness to lead the team in the field of their professional activities, tolerantly perceiving social, ethnic, religious and cultural differences;
 - the ability to creatively adapt to the specific conditions of the tasks performed and their innovative solutions.

3.5 Professional competencies

- A graduate of a master's program should have the following professional competencies:
 - the ability to prepare analytical materials for evaluating events and developing strategic decisions in the field of ICT;
 - the ability to analyze the innovative activity of the enterprise;
 - the ability to apply methods of system analysis and modeling for analysis, enterprise architecture;
 - the ability to develop a strategy for the development of enterprise architecture;
 - the ability to plan the life cycle management processes of the enterprise IT infrastructure and organize their implementation;
 - the ability to manage research and design teams;
 - the ability to manage an electronic enterprise and e-business units of non-network companies;
 - ability to design enterprise architecture;
 - ability to develop and implement enterprise architecture components;
 - the ability to conduct research and search for new models and methods for improving enterprise architecture;
 - the ability to search and analyze innovations in economics, management and ICT;
 - the ability to conduct research to develop strategic decisions in the field of ICT;
 - the ability to organize independent and collective research work;
 - ability to manage innovative and entrepreneurial activities in the field of ICT;
 - the ability to manage the introduction of innovations for the development of enterprise architecture;
 - willingness to develop educational programs and teaching materials on managerial and IT disciplines;
 - willingness to conduct lectures and practical classes in managerial and IT disciplines.

4 Base of professional practices

The bases for professional practice are the university's educational laboratories ("Information Technologies", "Artificial Intelligence", the IT Training Center, Big Data), state and private enterprises and organizations that develop, implement and use information and communication technologies in various fields, as well as members Kazakhstan Association of IT Companies (Kazakhtelecom JSC, Kazdream Technologies LLP, G1 Software Kazakhstan LLP, OPEN SYSTEMS DEVELOPMENT LLP, QLT LLP, Kazakhstan GIS Center JSC, ArtaSoftware LLP).

5 The structure of the educational program of the master's program in the scientific and pedagogical direction (training period 2 years)

№	The name of the cycles and disciplines	Total labor intensity	
		in academic hours	in academic credits
1	2	3	4
1	Cycle of basic disciplines (DB)	1050	35
1)	High school component	600	20
	History and philosophy of science	150	5
	Foreign language (professional)	150	5
	Pedagogy of higher education	90	3
	Management psychology	150	5
	Pedagogical practice	60	2
2)	Component of choice	450	15
	Econometric study	150	5
	Risk management / Requirements Management	150	5
	Optimization methods in the economy / Business performance management Systems	150	5
3	Cycle majors (AP)	1170	39
1)	High school component	690	23
	Artificial intelligence methods	240	8
	System theory and system analysis	150	5
	Business process modeling and management	300	10
2)	Component of choice	480	16
	Decision support systems / Business process optimization tools	150	5
	Simulation systems / Information technologies for mathematical modeling	180	6
	International business planning practice / Methodology and tools for modeling business processes	150	5
3	Research practice	300	10
4	Research work of a master's student	720	24
5	Final certification	360	12
	Subtotal	3600	120

The structure of the educational program of the master's program in the field of study (term of study 1.5 years)

№	The name of the cycles and disciplines	Total labor intensity	
		in academic hours	in academic credits
1	2	3	4
1	Cycle of basic disciplines (DB)	450	15
1)	High school component	180	6
	Foreign language (professional)	60	2
	МЕНЕДЖМЕНТ	60	2
	Management psychology	60	2
2)	Component of choice	450	9
	Business communications / Business performance management Systems	120	4
	Risk management / Requirements Management	150	5
3	Cycle majors (AP)	1110	43
1)	High school component	900	30
	Econometric study	240	8
	Business analysis methodology	180	6
	International business planning practice	120	4
	System theory and system analysis	180	6
	Manufacturing practice	180	6
2)	Component of choice	390	13
	Optimization methods in Economics/ Business process Modeling and management	180	6
	Decision support systems / Business process optimization tools	210	7
3	Research practice	540	18
4	Experimental research work of a master's student	540	18
5	Final certification	360	12
	Subtotal	3180	106

The structure of the educational program of the master's program in the field of study (term of study 1 years)

№	The name of the cycles and disciplines	Total labor intensity	
		in academic hours	in academic credits
1	2	3	4
1	Cycle of basic disciplines (DB)	300	10
1)	High school component	180	6
	Foreign language (professional)	60	2
	МЕНЕДЖМЕНТ	60	2
	Management psychology	60	2
2)	Component of choice	120	4
	The analysis of big data / Modern data processing methods	120	4
3	Cycle majors (AP)	750	25
1)	High school component	600	20
	Econometric study	150	5
	Optimization methods in Economics	150	5
	System theory and system analysis	180	6
	Manufacturing practice	120	4
2)	Component of choice	150	5
	Simulation systems / Information technologies for mathematical modeling	150	5
3	Research practice	390	13
4	Experimental research work of a master's student	390	13
5	Final certification	360	12
	Subtotal	2190	73

Appendix 1. Academic Calendar

Академический календарь на 2019-2020 учебный год
 для модульной образовательной программы 7М061 - "Информационная бизнес-аналитика"

Направление подготовки: 06 - Информационные-коммуникационные технологии

Степень: Магистр технических наук / техники и технологий по образовательной программе 7М061 - "Информационная бизнес-аналитика"

Курс	Авг		Сентябрь				Октябрь				Ноябрь				Декабрь				Январь				Февраль				Март				Апрель				Май				Июнь				Июль				Август									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52				
26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24				
30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28				
	1	2	3	4	5	6	7	8	9	10																																														
Научно-педагогическое направление, срок обучения 2 года																																																								
I	ПН	ПН	*	*	*	*	*	*	*	*	*	*	*	С	С	ЗД/ЭС	ЗД/ЭС	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К
II	К/ЗД	К/ЗД	*П	*П	*П	ПЗ/Б	ПЗ/Б	ПЗ/Б	ПЗ/Б	ПЗ/Б	ПЗ/Б	ПЗ/Б	ПЗ/Б	С	С	ЗД/ЭС	ЗД/ЭС	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К
Профильное направление, срок обучения 1,5 года																																																								
I	ПН	ПН	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	С	С	ЗД/ЭС	ЗД/ЭС	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К	К
II	К	К	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	С	С	Э	Э	Э	Э	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА	НА
Профильное направление, срок обучения 1 год																																																								
I	ПН	ПН	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	С	С	ЗД/ЭС	ЗД/ЭС	К	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О	*О

ПН - презентационная неделя
 * - теоретическое обучение
 ЗД - запись на дисциплины
 ЭС - сдача ЕГЭ
 С - сессия экзаменационная
 Л - летний семестр
 К - каникулы

Пп - педагогическая практика
 Пр - производственная практика
 Пн - исследовательская практика
 П - НИРМ
 Э - ЭИРМ
 НА - итоговая аттестация

Всего недель: науч-нед (2 года) теоретическое обучение - 60 недель
 экзаменационная неделя - 10 недель
 каникулы зимние - 6 недель
 каникулы весенние - 2 недели
 каникулы летние - 3 или 9 недель
 летний семестр - 6 недель

Всего недель: проф (1,5 года) теоретическое обучение - 43 недели
 экзаменационная неделя - 8 недель
 каникулы зимние - 6 недель
 каникулы весенние - 1 неделя
 каникулы летние - 3 или 9 недель
 летний семестр - 6 недель

Всего недель: проф (1 год) теоретическое обучение - 20 недель
 экзаменационная неделя - 4 недель
 каникулы зимние - 3 недели
 каникулы весенние - 1 неделя

Праздничные дни: 30 августа - День Конституции
 24 сентября - Курбан Айт
 1 декабря - День Первого Президента
 16, 17 декабря - День независимости
 1, 2 января - Новый год
 7 января - Рождество Христово

8 марта - Международный женский день
 21, 22, 23 марта - Наурыз мейрамы
 1 мая - Праздник единства народа Казахстана
 7 мая - День защитника Отечества
 9 мая - День Победы
 6 июля - День столицы

Appendix 2. Work Curriculum

Дайындық бағыты (мамандығы)/Направление подготовки (специальности)/Direction of training (specialty): Ақпараттық-коммуникациялық технологиялар/ Информационно-коммуникационные технологии/ Information and Communication
 Білім беру бағдарламасы (мамандандыру)/Образовательная программа (специализация)/Educational program (specialization): Ақпараттық бизнес-аналитика/ Информационная бизнес-аналитика / Information Business Analytics
 Оқу кезеңі/Период обучения/Period of study: 2019 - 2021
 Дайындық деңгейі/Уровень образования/Level of training: Магистр по научно-педагогическому направлению/
 Білім негізінде/На базе/On the base: Жоғарғы білім/Высшее образование/

№	Модуль атауы Наименование модуля Module name	Пәндер атауы Цикл дисциплин Cycle of disciplines	Көлемі/көлемі Көлемі/көлемі Сопропанент	Пәндер атауы Код дисциплинаны Code of discipline	Пәндер атауы Наименование дисциплины Discipline name	Білім алушылардың барлық жұмыс уақыты (СЖ) Бюджет рабочего времени обучающегося (в часах) Student budget-time (in hours)										Кредиттері курс және семестр (триместр, квартал) бойынша бөлу Распределение кредитов по курсам и семестрам			Кредиттері курс және семестр (триместр, квартал) бойынша бөлу Распределение кредитов по курсам и семестрам			Бақылау түрі Формы контроля	
						КП Кредит саны Число кредитов РК Number of KZ credits	Барлық сағат саны Всего в часах Total (in hours)	Барлық лекциялық сағат саны Всего аудиторных часов Total class hours	Директорлық сабақтар Аудиторные занятия Class work				БА/ӘӘЖ СРОП Т/СТ БА/ӘЖ СРО	Т/СТ СРО	Т/СТ СРО	1 курс (year)			2 курс (year)			Бақылау түрі Forms of control	Курстың аяқталуы/Курсовая работа
									Директор Lectures	Практикалық/семинарлық сабақтар Практические / семинарские Practical classes/seminars	Жұмыс сағаттары Лабораторные занятия Laboratory work	Студенттік жұмыс Студенческие занятия Student work				1	2	3	1	2	3		
10	10	10	10	10	10	10																	
1.Жалпы модульдер/1.Общие модули/1.Common modules																							
1	Гуманитария-әлеуметтік Гуманитарно-социальный humanitarian-social	БП БД БС	ЖК БК УС	ГҮаP5201	Шет тіл (кәсіби) Иностранный язык (профессиональный) Foreign language (professional)	5,00	150,00	50,00	50,00			20,00	80,00			3,00			Третий триместр				
					Ғылым тарихы және философиясы История и философия науки History and philosophy of science	5,00	150,00	50,00	30,00	20,00			20,00	80,00			5,00			Третий триместр			
					Жоғары мектеп педагогикасы Педагогика высшей школы Pedagogics of higher school	3,00	90,00	30,00	20,00	10,00			12,00	48,00			3,00			Третий триместр			
					Басқару психологиясы Психология управления Psychology of management	5,00	150,00	50,00	30,00	20,00			20,00	80,00			5,00			Третий триместр			
Модуль бойынша барлығы/Итого по модулю/Total in module:						18,00	540,00	180,00	80,00	100,00			72,00	288,00			18,00	4					
2.Мамандық модульдері/2.Модули специальности/2.Specialty modules																							
1	Қорытынды аттестация Итоговая аттестация Final validation	КА НА FE		СЗМД601	Магистрдің диссертацияны/жобаны рәсімдеу және қорғау Оформление и защита магистерской диссертации/проекта Design and defense of master's thesis/project	12,00	360,00										12,00	Шестой триместр					
					Эконометрикалық зерттеулер Эконометрические исследования Econometric studies	5,00	150,00	50,00	20,00	30,00			20,00	80,00	5,00					Первый триместр			
2	Экономико-управленческий Economic and managerial	БП БД БС	ТК КВ СС	ЕІ5202	Тауекелді басқару Управление рисками Risk management	5,00	150,00	50,00	20,00	30,00			20,00	80,00	5,00				Первый триместр				
					Таланттарды басқару Управление требованиями Requirements management	5,00	150,00	50,00	20,00	30,00			20,00	80,00	5,00				Первый триместр				
					Профессиональный Professional	КП ЦД ПС	ТК КВ СС	SPPR5101	Шешімдерді қабылдауды қолдау Системы поддержки принятия решений Decision Support Systems	5,00	150,00	50,00	20,00	30,00			20,00	80,00	5,00			Второй триместр	

КП ПД PS	ЖК БК UC	MI5302	Жақанды интеллект әдістері Методы искусственного интеллекта Artificial intelligence methods	8,00	240,00	80,00	40,00		40,00		32,00	128,00		8,00					Второй триместр
КП ПД PS	ЖК БК UC	TSSA5303	Жүйелер және жүйелік талдау теориясы Теория систем и системный анализ Theory of systems and systems analysis	5,00	150,00	50,00	20,00		30,00		20,00	80,00	5,00						Первый триместр
КП ПД PS	ЖК БК UC	MUBP6304	Бизнес-процестерді модельдеу және басқару Моделирование и управление бизнес-процессами Business Process Modeling and Management	10,00	300,00	100,00	50,00		50,00		40,00	160,00				10,00			Пятый триместр
КП ПД PS	ТК КВ SC	SOBP5305	Бизнес процесстерді оптимизация құралдары Средства оптимизации бизнес-процессов Business Process Optimization Tools	5,00	150,00	50,00	20,00		30,00		20,00	80,00	5,00						Второй триместр
КП ПД PS	ТК КВ SC	MIMBP5306	Бизнес-процестерді модельдеу әдістемесі мен құралдары Методология и инструментарий для моделирования бизнес-процессов Methodology and tools for business process modeling	5,00	150,00	50,00	20,00		30,00		20,00	80,00	5,00						Второй триместр
БП БД BS	ТК КВ SC	MOE5208	Экономикадағы оптимизация әдістері Методы оптимизации в экономике Optimization Methods in Economics	5,00	150,00	50,00	20,00		30,00		20,00	80,00	5,00						Первый триместр
КП ПД PS	ТК КВ SC	MRBP5308	Бизнес-жоспарлаудың халықаралық тәжірибесі Международная практика бизнес-планирования International business planning practice	5,00	150,00	50,00	20,00		30,00		20,00	80,00	5,00						Второй триместр
БП БД BS	ТК КВ SC	SUEB5209	Бизнес тиімділігін басқару жүйесі Системы управления эффективностью бизнеса Business Performance Management Systems	5,00	150,00	50,00	20,00		30,00		20,00	80,00	5,00						Первый триместр
КП ПД PS	ТК КВ SC	SIM6309	Имитациялық модельдеу жүйелері Системы имитационного моделирования Simulation modeling systems	6,00	180,00	60,00	30,00		30,00		24,00	96,00				6,00			Четвертый триместр
КП ПД PS	ТК КВ SC	ITMM6311	Математикалық модельдеудің ақпараттық технологиялары Информационные технологии математического моделирования Information technologies of mathematical modeling	6,00	180,00	60,00	30,00		30,00		24,00	96,00				6,00			Четвертый триместр

Модуль бойынша барлығы/Итого по модулю/Total in module:

92,00 2 760,00 800,00 350,00 90,00 360,00 320,00 1 280,00 30,00 28,00 12,00 10,00 12,00 15

4.Қосымша модульдер/4.Дополнительные модули/4.Additional modules

1	Қосымша модульдер	ЖК НР RW	NBEMVVM D601	Магистранттың ғылыми-зерттеу жұмысы, магистрия диссертацияны орындаумен қоса Научно-исследовательская работа магистранта, включая выполнение магистерской диссертации MS student's research work, incl. Master thesis	24,00	720,00							2,00		7,00	7,00	8,00		Второй триместр, Шестой триместр, Четвертый триместр, Пятый триместр	
	Модуль профессиональной практики	КП ПД PS	IP6307	Зерттеу тәжірибесі Исследовательская практика Research practice	10,00	300,00										7,00	3,00			Пятый триместр, Четвертый
	Professional Practice in module	КП ПД	ЖК БК	PP5310	Педагогикалық тәжірибе Педагогическая практика Teaching practice	2,00	60,00							2,00						Третий триместр

Модуль бойынша барлығы:/Total in module:	36,00	1 080,00								2,00	2,00	14,00	10,00	8,00	7	
Кредиттер бойынша барлығы:/Total credits:	146,00	4 380,00	980,00	430,00	190,00	360,00	392,00	1 568,00	30,00	30,00	20,00	26,00	20,00	20,00	26	
Зерттеу жұмыстары:/Research work:	24,00	720,00								2,00		7,00	7,00	8,00	4	
КА кредиттерінің саны:/Number of credits in FE:	13,00	360,00												12,00	1	
Орташа апталық жүктеменің сағат саны:/Weekly average workload at hours:									90,00	90,00	60,00	78,00	60,00	60,00		
БП кредиттерінің саны:/Number of credits in BS:	43,00	1 290,00	430,00	180,00	190,00	60,00	172,00	688,00	25,00		18,00					
БП-інің ТК кредиттерінің саны:/Number of credits in BS SC:	25,00	750,00	250,00	100,00	90,00	60,00	100,00	400,00	25,00						5	
БП-інің ЖООК кредиттерінің саны:/Number of credits in BS UC:	18,00	540,00	180,00	80,00	100,00		72,00	288,00			18,00				4	
КП кредиттерінің саны:/Number of credits in majors:	67,00	1 650,00	550,00	250,00		300,00	220,00	880,00	5,00	28,00	2,00	19,00	13,00			
КП-інің ТК кредиттерінің саны:/Number of credits in majors SC:	32,00	960,00	320,00	140,00		180,00	128,00	512,00		20,00		12,00			6	
КП-інің ЖООК кредиттерінің саны:/Number of credits in majors UC:	35,00	690,00	230,00	110,00		120,00	92,00	368,00	5,00	8,00	2,00	7,00	13,00		6	

Дайындық бағыты (мамандығы)/Направление подготовки (специальность)/Direction of training (specialty): **Ақпараттық-коммуникациялық технологиялар/ Информационно-коммуникационные технологии/ Information and Communication technologies**
 Білім беру бағдарламасы (мамандық бағдарламасы)/Образовательная программа (специализация)/Educational program (specialization): **Ақпараттық бизнес-аналитика/Информационная бизнес-аналитика/ Information business Analytics**
 Оқу кезеңі/Период обучения/Period of study: **2019 - 2020**
 Дайындық деңгейі/Уровень образования/Level of training: **Магистр по направлениям, 1 год/**
 Білім негізінде/на базе/On the base: **Жоғарғы білім/Высшее образование/**

№	Модуль атауы Наименование модуля Module name	Пәнарәлімі Ціла дисципліна Cycle of disciplines	Компонент Компонент Component	Пәнарәлімі Код дисципліна Code of discipline	Пәнарәлімі атауы Наименование дисциплины Discipline name	КР кредит саны Число кредитов КР Number of KZ credits	Білім алушылардың барлық жұмыс уақыты (сағ) Бюджет рабочего времени обучающегося (в часах) Student budget-time (in hours)										Кредиттері курс және семестр (триместр, квартал) бойынша білу Распределение кредитов по курсам и семестрам (триместрам, кварталам) Distribution of credits by courses and semesters (trimesters, quarters)			Бақылау түрі Формы контроля Forms of control	
							Дирекциялық сабақтар Аудиторные занятия Class work														
							Барлық сағат саны Всего в часах Total (in hours)	Барлық лекциялық сағат саны Всего лекционных часов Total class hours	Дерісгер Лекция Lectures	Практикалық/семинарлық сабақтар Практическая / семинарская Practical classes/seminars	Ләбораториялық сабақтар Лабораторные занятия Laboratory work	Студенттік сабақтар Студенческие занятия Studio work	БАӨӘЖ СРОП ІТСТ	БАӨӘЖ СРО ІТБС	Трестрлердегі атындар саны Неделік в триместре Weeks per trimester			Баллман/Оценки/Exam	Курстың аралық жұмыстары Темп жұмыстары Term papers		
															1	2	3				
1.Жалпы модульдер/1.Общие модули/1.General modules												10	10	10							
1	Гуманитарлық-әлеуметтік Гуманитарно-социальный Humanitarian-social	БП БД BS	ЖК БК UC	ГУАР5202	Шет тілі (кәсіби) Иностранный язык (профессиональный) Foreign language (professional)	2,00	60,00	20,00		20,00				8,00	32,00	2,00			Первый триместр		
		БП БД BS	ЖК БК UC	ПУ5204	Басқару психологиясы Психология управления Psychology of management	2,00	60,00	20,00	10,00	10,00				8,00	32,00	2,00			Первый триместр		
Модуль бойынша барлығы/Итого по модулю/Total in module:						4,00	120,00	40,00	10,00	30,00				16,00	64,00	4,00			2		
2.Мамандық модульдері /2.Модули специальности/2.Specialty modules																					
1	Қорытынды аттестация Итоговая аттестация Final validation	КА НА FE		NZDR501	Диссертациялық жұмысты жазу және қорғау Написание и защита диссертационной работы Writing and defense of master's dissertation	12,00	360,00											12,00			
2	Кәсіптік Профессиональный Professional	БП БД BS	ТК КВ SC	ABD5201	Үлкен деректерді талдау Анализ больших данных Big data analysis	4,00	120,00	40,00	20,00	20,00				16,00	64,00	4,00			Первый триместр		
		КП ПД PS	ЖК БК UC	TSSA5301	Жүйелер және жүйелік талдау теориясы Теория систем и системный анализ Theory of systems and systems analysis	6,00	180,00	60,00	30,00	30,00				24,00	96,00	4,00			Первый триместр		
		КП ПД PS	ТК КВ SC	SIM5302	Нысаналық модельдеу жүйелері Системы имитационного моделирования Simulation modeling systems	5,00	150,00	50,00	20,00	30,00				20,00	80,00		5,00		Второй триместр		
		БП БД BS	ТК КВ SC	SMOBD5203	Заманауи үлкен деректерді өңдеу әдістері Современные методы обработки больших данных Modern methods of big data processing	4,00	120,00	40,00	20,00	20,00				16,00	64,00	4,00			Первый триместр		
		КП ПД PS	ТК КВ SC	ITMM5304	Математикалық модельдеудің ақпараттық технологиялары Информационные технологии математического моделирования Information technologies of mathematical modeling	5,00	150,00	50,00	20,00	30,00				20,00	80,00		5,00		Второй триместр		
		КП ПД PS	ЖК БК UC	MOE5305	Экономикадағы оптимізация әдістері Методы оптимизации в экономике Optimization Methods in Economics	5,00	150,00	50,00	20,00	30,00				20,00	80,00		5,00		Второй триместр		
3	Экономикалық-басқарушылық Экономико-управленческий Economic and managerial	КП ПД PS	ЖК БК UC	EI5303	Эконометрикалық зерттеулер Эконометрические исследования Econometric studies	5,00	150,00	50,00	20,00	30,00				20,00	80,00		5,00		Второй триместр		
		БП БД BS	ЖК БК UC	M5205	Менеджмент Management	2,00	60,00	20,00	10,00	10,00				8,00	32,00	2,00			Первый триместр		

Модуль баёныма барымы/Units in module/Total in module:		48,00	1 440,00	300,00	160,00	10,00	190,00		144,00	576,00	16,00	20,00	12,00	8					
		4.Косымша модульдер/4.Дополнительные модули/4. Additional modules																	
1	Куратордун аттестация Итоговая аттестация Final assessment	КА НА FE		NZDR.501	Диссертациялык жумуштар жана жогору Пансаане и защита диссертационной работы Writing and defence of master's dissertation										Третий триместр				
2	Кесипти тажрыйба модули Модуль профессиональной практики Professional Practice in module	ЭК ИР RW		ЕВВМУУМ D501	Магистрлик диссертациялык дабыстан жана эксперименталдык зерттеш жумуштары Экспериментально-исследовательская работа магистранта, включая выполнение магистерской диссертационной работы Experimental research, including the master's thesis	13,00	390,00							3,00	2,00	8,00	Первый триместр, Второй триместр, Третий триместр		
		КП ПД PS	ЖК БК UC	PP5306	Өндүрүштүк тажрыйба Производственная практика Production practice	4,00	120,00							4,00		Второй триместр			
Модуль баёныма барымы/Units in module/Total in module:			17,00			530,00								3,00	6,00	8,00	5		
Кредиттер баёныма барымы/Units credits/Total credits:			69,00			2 070,00	400,00	170,00	40,00	190,00				160,00	640,00	23,00	26,00	20,00	15
Зерттеш жумуштары/Исследовательская работа/Research work:			13,00			390,00									3,00	2,00	8,00	3	
КА кредиттеринин саны/Количество кредитов КА/Number of credits in FE:			12,00			360,00												12,00	1
Орташа апталык жүктөмөнүн саат саны/Средняя недельная нагрузка в часах/Weekly average workload at hours:															69,00	78,00	60,00		
БП кредиттеринин саны/Количество кредитов БП/Number of credits in BS:			14,00			420,00	140,00	60,00	40,00	40,00				56,00	224,00	14,00			
БП-инн ТК кредиттеринин саны/Количество кредитов БП ТК/Number of credits in BS SC:			8,00			240,00	80,00	40,00		40,00				32,00	128,00	8,00			2
БП-инн ЖООК кредиттеринин саны/Количество кредитов БП ЖОК/Number of credits in BS UC:			6,00			180,00	60,00	20,00	40,00					24,00	96,00	6,00			3
КП кредиттеринин саны/Количество кредитов КП/Number of credits in majors:			30,00			780,00	260,00	110,00		150,00				104,00	416,00	4,00	24,00		
КП-инн ТК кредиттеринин саны/Количество кредитов КП ТК/Number of credits in majors SC:			10,00			300,00	100,00	40,00		60,00				40,00	160,00		10,00		2
КП-инн ЖООК кредиттеринин саны/Количество кредитов КП ЖОК/Number of credits in majors UC:			20,00			480,00	160,00	70,00		90,00				64,00	256,00	6,00	14,00		4

Appendix 3. Description of the disciplines of compulsory and university components

1. Basic information about the discipline:	
Name of the discipline:	History and philosophy of science
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	The structure of scientific knowledge, methods of scientific research, functions of scientific theories and laws; expanding the world Outlook; developing ideas about the criteria of scientific research and the requirements that should meet scientific research and its results, as well as developing a style of scientific thinking based on the study of the history and philosophy of science.

1. Basic information about the discipline:	
Name of the discipline:	Foreign language (professional)
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	Mastering future masters of the language for professional and academic purposes at an advanced level, which will allow you to freely operate the scientific and conceptual apparatus of the specialty, expand the scientific and information base, master the skills of interpreting scientific information, argument, persuasion, scientific polemics, and academic writing.

1. Basic information about the discipline:	
Name of the discipline:	Pedagogy of higher education
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	Basics of pedagogy of high school. The subject and tasks of pedagogics of the higher school. Methodology and methods of pedagogical research in higher education. Didactics of higher education. Pedagogical process in higher education. Laws, regularities and principles of training. Methods, forms and means of higher education. Current state of higher education in Kazakhstan. The purpose of education as a pedagogical problem.

1. Basic information about the discipline:	
Name of the discipline:	Management psychology
2. Prerequisites:	Philosophy, psychology, history, cultural studies, sociology
3. Post requisites:	Passing of pedagogical practice
4. The content of the discipline:	Conceptual apparatus. Manager and team. Conflicts. Management communication. Decision-making technology. The concept of the subject and object of management. The Manager and the leader. Psychology of the order. Democratic leadership style and its features. Psychology of criticism. Psychotypes of communication subjects. Psychological problems of training and retraining of management personnel. Recruitment and placement of personnel. Personnel rotation.

1. Basic information about the discipline:	
Name of the discipline:	Artificial intelligence methods
2. Prerequisites:	Mathematical foundations of information technologies, Foundations of neural networks
3. Post requisites:	
4. The content of the	Introduction to intelligent systems. Software tools for developing knowledge-based

discipline:	systems. Data and knowledge representation models. Character processing languages and programming languages for artificial intelligence. Formal model. Production systems. Ontologies and ontological systems. Models of ontology and ontological system. Methodology for creating ontologies. Examples of ontologies. Classification of knowledge-based systems. Expert system.
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1. Basic information about the discipline:	
Name of the discipline:	System theory and system analysis
2. Prerequisites:	Game theory
3. Post requisites:	Manufacturing practice
4. The content of the discipline:	Systems and patterns of their functioning and development. Basic concepts that characterize the structure and functioning of systems. Classification of systems. Stages and methods of system analysis. Methods of conducting the examinations. System analysis in business Analytics.

1. Basic information about the discipline:	
Name of the discipline:	Business process modeling and management
2. Prerequisites:	Business process analysis
3. Post requisites:	Manufacturing practice
4. The content of the discipline:	Prerequisites for the formation of new approaches to the organization of the company's activities. The concept of a business process. Process approach and process-oriented organization. Theoretical foundations of business process management. Main approaches and standards for business process modeling. Business process modeling methodologies. Software tools for modeling business processes. Methods for describing various subject areas of the organization. Methods for analyzing business processes. Controlling and monitoring processes.

1. Basic information about the discipline:	
Name of the discipline:	Methodology and tools for modeling business processes
2. Prerequisites:	Business process analysis
3. Post requisites:	Manufacturing practice
4. The content of the discipline:	Instrumental systems for simulation of the processes of the organization. Analysis of business processes using business modeling systems. A balanced scorecard as a means of managing the organization's processes. Methods of deep analysis and optimization of business processes.

1. Basic information about the discipline:	
Name of the discipline:	Management
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	The ability to make decisions, "predict, plan, organize, coordinate and control", motivate and lead various groups of people-training these skills that are necessary for managers, future leaders of companies for effective business and management.

1. Basic information about the discipline:	
Name of the discipline:	Pedagogical practice
2. Prerequisites:	Pedagogy

3. Post requisites:	Research practice
4. The content of the discipline:	Drawing up an internship plan. Study the curriculum. Educational and program documentation on the topic of the work, its analysis and development principles. Planning the educational process in accordance with the material and technical base. Planning, developing and conducting classes. Monitoring and analysis of classes as a method of controlling the quality of the educational process and the effectiveness of individual methodological systems. Preparing a report on the practice.

1. Basic information about the discipline:	
Name of the discipline:	Research practice
2. Prerequisites:	Pedagogy
3. Post requisites:	Master's thesis
4. The content of the discipline:	Drawing up an individual practice plan and developing a research program. Preparation of the study. Formulation of the research topic. Analysis of the state of development of the scientific problem, assessment of their applicability in the study. Analysis of sources on the research problem. Research: data processing, analysis and specification of results. Preparation of a scientific article and report on the direction of the dissertation research; report on research practice.

Appendix 4 Description of Disciplines of the Optional Component

1. Basic information about the discipline:	
Name of the discipline:	Econometric study
2. Prerequisites:	
3. Post requisites:	Analysis and improvement of business processes
4. The content of the discipline:	Basics of data analysis. The paired regression analysis. Multiple regression analysis. Time series. The study of the characteristics of the time series. Stationary time series. Autoregression and moving average models. Forecasting in regression models. Some aspects of time series modeling. Forecasting and analyzing its quality. Analysis of results. Conclusions and report writing.

1. Basic information about the discipline:	
Name of the discipline:	Risk management
2. Prerequisites:	IT project management
3. Post requisites:	Methodology of business process research
4. The content of the discipline:	The concept of risk. Classification of risk situations. The nature of uncertainty in Economics and business. Classification of decision-making tasks by the degree of certainty of the consequences (outcomes) of decisions. Mathematical models of decision-making in conditions of uncertainty and risk. Payment matrix, risk matrix. Selection criteria in conditions of uncertainty and risk. The cost of the full information. Decision tree. Utility theory.

1. Basic information about the discipline:	
Name of the discipline:	Requirements management
2. Prerequisites:	IT project management
3. Post requisites:	Research methodology of business processes
4. The content of the	Methods for identifying requirements. The modeling activities. Getting functional

discipline:	requirements based on user requirements. Requirements specification to the system. Modeling a high-level architecture is a process for analyzing requirements. Distribution of functions by components and subsystems of the implemented system. Evaluating models and selecting design methods. Planning for multiple software artifacts that require development.
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1. Basic information about the discipline:	
Name of the discipline:	Optimization methods in Economics
2. Prerequisites:	Applications of discrete mathematics and numerical methods
3. Post requisites:	Methodology of business process research
4. The content of the discipline:	Optimality criterion. Necessary conditions for optimization. Formulation of the problems of static and dynamic optimization. Scope of static and dynamic optimization problems in the economy. Methods for solving one-dimensional static optimization problems. A classical method for investigating functions at an extremum. A classical method for investigating functions at an extremum. Numerical methods for solving one-dimensional static optimization problems. Features of linear programming problems.

1. Basic information about the discipline:	
Name of the discipline:	Business performance management systems
2. Prerequisites:	Fundamentals of Economics and law
3. Post requisites:	Research methodology of business processes
4. The content of the discipline:	Information support system and the essence of corporate governance and strategic management. Classification of information flows of the corporate governance and strategic management information support system. Fundamentals of information support for corporate governance and strategic management. Business performance management information systems. Information systems for management accounting and controlling. Standards and methods for the preparation of consolidated financial statements.

1. Basic information about the discipline:	
Name of the discipline:	Decision support systems
2. Prerequisites:	Econometrics for business solutions
3. Post requisites:	Modern methods and business processes, modern business process modeling tools
4. The content of the discipline:	Modeling and Informatization of decision-making. Information technology of the decision-making process. The definition of systems of support of decision-making. Definition of expert systems. Building a DSS primarily based on mathematical models and a database. Expert shell of the decision support system. Using methods of decision-making under conditions of probabilistic determinacy in the environment of the EDSS.

1. Basic information about the discipline:	
Name of the discipline:	Business process optimization tools
2. Prerequisites:	ICT, ICT Markets and sales organization
3. Post requisites:	Modern methods and business processes, modern business process modeling tools
4. The content of the discipline:	Business modeling system. Qualitative analysis of business processes. Quantitative analysis of business processes. Methods of process analysis. Tools for improving processes. Simplification. Idealization. Structuring method. Statistical process

	management. Business process reengineering. Benchmarking. Purpose of simulation modeling and functional cost analysis. The methodology of the simulation and the FSA. Analysis of simulation results. Optimization of business processes.
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1. Basic information about the discipline:	
Name of the discipline:	International business planning practice
2. Prerequisites:	ICT, ICT Markets and sales organization
3. Post requisites:	Analysis and improvement of business processes, it design methods
4. The content of the discipline:	Business planning standards. Strategic aspects of business planning. Examples of business plans. Structural content of the financial model of the business plan. Assessment of the feasibility and economic viability of the business project. System of operational and investment performance indicators of the project. Graphical interpretation of the impact of the project. Comparison of business planning applications. Interaction with investors in the business planning process. Attracting investments and interacting with investors. Methodology for drawing up an investment Memorandum.

1. Basic information about the discipline:	
Name of the discipline:	Simulation systems
2. Prerequisites:	Modeling processes and systems
3. Post requisites:	Business process modeling, Modern business process modeling tools
4. The content of the discipline:	Building models of production processes. Model of formation of optimum assortment. The construction of models of logistics and risk. Modeling of financial flow management tasks. Analysis of simulation systems. Analysis of simulation tools. The construction of simulation processes for the tasks of production and business. Dynamic modeling of typical parts of production systems. Simulation of typical production systems.

1. Basic information about the discipline:	
Name of the discipline:	Information technologies of mathematical modeling
2. Prerequisites:	Modeling processes and systems
3. Post requisites:	Business process modeling, Modern business process modeling tools
4. The content of the discipline:	The simplest commands in the MATLAB environment. Package structure, application areas. two-dimensional graphics. Plot function, figure command, multiple curves on the graph, line style and color, axis and grid commands, graphs of multi-valued functions, curves set parametrically, graphs in polar coordinates. Three-dimensional graphics. Spatial curves, meshgrid command, mesh command, surf, surf. Basic numerical methods.

1. Basic information about the discipline:	
Name of the discipline:	Big data analysis
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	Introduction to big data Analytics. Practical methods of big data Analytics. Classes of modern tasks that require the use of big data Analytics tools. Data analysis lifecycle. Data acquisition. Data preparation. Planning the model. The transmission of results. Commissioning. Main tasks of business Analytics. Machine learning. Technologies and tools. Data analysis and research.

1. Basic information about the discipline:	
Name of the discipline:	Modern methods of big data processing
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	Overview of information sources. Big data storage and processing technologies. Statistical methods of data analysis: descriptive statistics, parametric, nonparametric,

	nominal methods (correlation, regression, variance analysis, cluster, discriminant, factor analysis). Modern software tools for analyzing large amounts of information. Visualization of source information and analytical data.
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1. Basic information about the discipline:	
Name of the discipline:	Business communication
2. Prerequisites:	
3. Post requisites:	
4. The content of the discipline:	Ethics of business communication. Business negotiations: preparation and conduct. Service communication. The rules of the service relationship. Psychological climate in the workforce. Problems of intercultural communication. National styles of business relations. Features of the national ethics of business partners. National peculiarities in business communication (on the example of different countries).