Project Management Institute n.a. E.A. Turkebayev
Department of Management and Mathematical Economics

EDUCATIONAL PROGRAM
7M04106 Economic analysis

Code and classification of the field of education: 7M04 Business, management and law
Code and classification of areas of study: 7M041 Business and management
Group of educational programs: M070 Economics
NQF level: 7
SQF level: 7
Duration of study: 2 years
Credits: 120

Almaty 2025

Образовательная программа 7М04106 «Экономический анализ» утверждена на заседании Учёного совета КазНИТУ им. К.И.Сатпаева.

Протокол № 10 от «06» марта 2025 г.

Рассмотрена и рекомендована к утверждению на заседании Учебно-методического совета КазНИТУ им. К.И.Сатпаева.

Протокол № 3 от «20» декабря 2024 г.

Образовательная программа 7М04106 - «Экономический анализ» разработана академическим комитетом по направлению 7М041 Бизнес и управление

Ф.И.О.	Учёная степень/ учёное звание	Должность	Место работы	Подпись
Профессорско-преподавательский состав:				
Турегельдинова Алия Жумабековна	К.э.н., PhD, ассоциированный профессор	Зав кафедрой	КазНИТУ	
Матэ Миклос Фодор	PhD	Ассоциированный профессор	КазНИТУ	
Салина Айгуль Пазеновна	к.э.н, PhD	Профессор	КазНИТУ	
Саркамбаева Шынара Галимжановна	PhD, ассоциированный профессор	Ассоциированный профессор	КазНИТУ	
Работодатели:				
Некрасова Наталья Андреевна	-	Исполнительный директор	Союз проектных менеджеров РК	
Обучающиеся				
Ферренс Юлия	-	Докторант	КазНИТУ	

Content

List of abbreviations and symbols

NJSC "Kazakh National Research Technical University named after K.I. Satpayev"- NAO KazNITU named after K.I. Satpaev

OP – educational programm

OC -optional component

NKF -national qualifications framework

SKF- sectoral qualifications framework

LO -learning outcomes

SDG – sustainable development goal

EP – educational program

IT – information technology

M&ME – Management and mathematical economics

1. Description of the educational program

The Master's degree program "Economic Analysis" is a field of study directly related to business practice, training specialists in the field of data analysis in organizations using advanced information technologies. It is an educational program of the scientific and pedagogical direction of training and is designed for two years of study. The training lasts four semesters, culminating in a master's degree, during which deep knowledge is transferred and advanced skills are developed for their use in a changing environment.

This EP prepares learners for future data analyst responsibilities in organizations that use IT, mathematical, statistical and econometric tools. It allows one to acquire network management skills, create simple applications in structural, object-oriented and scripting languages, create and identify mathematical, statistical and econometric models for data analysis and forecasting.

2. Purpose and objectives of the educational program

EP purpose:

Training highly qualified specialists capable of applying modern economic analysis methods to make informed management decisions in various sectors of the economy.

EP objectives:

1. To form the student's competence for solving economic problems
2. To form the student's competence to use analytical tools and information technologies
3. To form in the student the competencies necessary for creativity and self-development

3. Requirements for evaluating the learning outcomes of an educational program

The graduate should be able to act creatively and solve complex interdisciplinary problems in the field of economics and management, using IT decision support methods, as well as mathematical, statistical and econometric methods and tools. A graduate may express opinions based on incomplete or limited information, while respecting the principles of safety, legal and ethical standards. He can discuss IT and econometric topics at an advanced level with both professionals and non-specialists, and can also manage teams. The graduate is ready to work in all commercial organizations and institutions where the use of mathematical, statistical, econometric and information tools is required. In particular, the graduate has the skills that allow him to work in IT, consulting, management and economic companies, especially as a highly qualified data analyst. He also has basic knowledge of running an IT business.

LO 1 Apply advanced statistical and mathematical methods for forecasting economic trends and modeling financial processes.

LO 2 Apply multivariate econometric and statistical methods for in-depth analysis and

interpretation of complex economic data, with the aim of developing substantiated economic models.
LO 3 Use comprehensive methods of data analysis and business modeling for critical evaluation and optimization of business processes and managerial decisions.
LO 4 Develop and apply modern methodological approaches for conducting scientific and business research, including data collection, analysis, and interpretation to obtain new knowledge and practical recommendations.
LO 5 Develop and implement innovative sustainable development strategies to ensure long-term economic growth and social stability.
LO 6 Conduct comprehensive financial analysis and evaluation of investment projects, using theoretical and practical aspects of monetary economics and banking.
LO 7 Apply advanced software development and information systems management technologies to enhance the efficiency and competitiveness of organizations.
LO 8 Use internet marketing and market analysis methods to develop effective marketing strategies and make informed business decisions.
LO 9 Develop skills in professional communication in a foreign language, including understanding specialized terminology and the ability to conduct business correspondence and negotiations.
LO 10 Apply psychological methods for effective personnel management and use pedagogical approaches for teaching in higher education.
LO 11 Analyze the development of scientific ideas and concepts in a historical context and apply philosophical approaches to the evaluation of scientific research and discoveries.

4. Passport of the educational program

4.1. General information

№	Field name	Note
1	Code and classification of the field of education	7M04 Business, management and law
2	Code and classification of areas of study	7M041 Business and management
3	Group of educational programs	M070 Economics
4	Name of the educational program	Economic analysis
5	Brief description of the educational program	The Master's degree program "Economic Analysis" is a field of study directly related to business practice, training specialists in the field of data analysis in organizations using advanced information technologies.
6	EP purpose	Training highly qualified specialists capable of applying modern economic analysis methods to make informed management decisions in various sectors of the economy.
7	Type of EP	NEW EP
8	NQF level	7
9	SQF level	7

10	Distinctive features of the OP	Collaborative EP
11	List of competencies of the educational program:	Able to conduct independent research using instrumental methods of economic analysis in accordance with the developed program Able to present the results of the research to the scientific community in the form of an article or report Able to develop strategies for the behavior of economic agents in various markets Able to prepare analytical materials for evaluating economic policy activities and making strategic decisions at the micro and macro levels Able to make a forecast of the main socio-economic indicators of the enterprise, industry, region and economy as a whole Able to develop options for management decisions and justify their choice based on criteria for socio-economic efficiency
12	Learning outcomes of the educational program:	LO 1 Apply advanced statistical and mathematical methods for forecasting economic trends and modeling financial processes. LO 2 Apply multivariate econometric and statistical methods for in-depth analysis and interpretation of complex economic data, with the aim of developing substantiated economic models. LO 3 Use comprehensive methods of data analysis and business modeling for critical evaluation and optimization of business processes and managerial decisions. LO 4 Develop and apply modern methodological approaches for conducting scientific and business research, including data collection, analysis, and interpretation to obtain new knowledge and practical recommendations. LO 5 Develop and implement innovative sustainable development strategies to ensure long-term economic growth and social stability. LO 6 Conduct comprehensive financial analysis and evaluation of investment projects, using theoretical and practical aspects of monetary economics and banking. LO 7 Apply advanced software development and information systems management technologies to enhance the efficiency and competitiveness of organizations. LO 8 Use internet marketing and market analysis methods to develop effective marketing strategies and make informed business decisions. LO 9 Develop skills in professional communication in a foreign language, including understanding specialized terminology and the ability to conduct business correspondence and negotiations.

		LO 10 Apply psychological methods for effective personnel management and use pedagogical approaches for teaching in higher education. LO 11 Analyze the development of scientific ideas and concepts in a historical context and apply philosophical approaches to the evaluation of scientific research and discoveries.
13	Form of study	Full-time
14	Training period	2 years
15	Quantity of credits	120
16	Languages of instruction	English, Kazakh, Russian
17	Awarded Academic Degree	Master of Economic Science
18	Developer(s) and authors:	Sarkambayeva Sh.G., assoc. professor at the Department of MME at KazNRTU Turegeldinova A.Zh., head of the department of MME KazNRTU

4.2. The relationship between the achievability of the formed learning outcomes in the educational program and academic disciplines

№	Name of the discipline	Brief description of the discipline	Number of credits	Formed learning outcomes (codes)										
				LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10	LO11
Cycle of basic disciplines														
Compulsory component														
1	Foreign language (professional)	The course is aimed at studying the main problems of scientific knowledge in the context of its historical development and philosophical understanding, the evolution of scientific theories, principles and methods of scientific research in the historical construction of scientific paintings of the world. The discipline will help to master the skills of developing critical and constructive scientific thinking based on research on the history and philosophy of science. At the end of the course, undergraduates will learn to analyze the ideological and methodological problems of science and engineering and technical activities in building Kazakhstan's science and the prospects for its development.	4									v		
2	History and philosophy of science	Purpose: to explore the history and philosophy of science as a system of concepts of global and Kazakh science. Content: the subject of philosophy of science, dynamics of science, the main stages of the historical development of science, features of classical science, non-classical and post-non-classical science, philosophy of mathematics, physics, engineering and technology, specifics of engineering sciences, ethics of science, social and moral responsibility of a scientist and engineer.	4											v
3	Higher school pedagogy	The course is aimed at mastering the methodological and theoretical foundations of higher education pedagogy. The discipline will	4											v

		help to master the skills of modern pedagogical technologies, technologies of pedagogical design, organization and control in higher education, skills of communicative competence. At the end of the course, undergraduates learn how to organize and conduct various forms of organizing training, apply active teaching methods, and select the content of training sessions. Organize the educational process on the basis of credit technology of education.												
4	Psychology of management	The course is aimed at mastering the tools for effective employee management, based on knowledge of the psychological mechanisms of the manager's activity. Discipline will help you master the skills of making decisions, creating a favorable psychological climate, motivating employees, setting goals, building a team and communicating with employees. At the end of the course, undergraduates will learn how to resolve managerial conflicts, create their own image, analyze situations in the field of managerial activity, as well as negotiate, be stress-resistant and effective leaders.	4										v	v
Cycle of basic disciplines **Elective component**														
5	Forecasting and Simulation	Purpose: To prepare graduate students to apply forecasting and simulation modeling methods for analyzing complex systems and making informed decisions. Content: During the course, graduate students will study time series methods, regression analysis, simulation modeling, as well as software for modeling and data analysis. Special attention is given to building predictive models, validating them, and applying them to solve practical problems in various fields.	4	v	v									
6	Data Analysis & Business Modeling	Purpose: To prepare graduate students to use data analysis and business modeling methods for making informed managerial decisions and improving business efficiency. Content: Graduate students will master methods for data			v				v		v			

		collection, processing, and analysis, tools for business modeling, the development and evaluation of business models, the use of analytical tools for forecasting and optimizing business processes, and the integration of data into strategic planning and managerial decisions.												
7	Multivariate Econometrics	Purpose: To train graduate students in multivariate econometric methods for analyzing and interpreting complex economic data. Content: Graduate students will study methods of multivariate regression, factor analysis, cluster analysis, and time series models. Practical assignments include applying econometric methods to solve real economic problems.	4	v	v									
8	Dynamic and static optimization	Purpose: To train graduate students in methods of dynamic and static optimization for solving economic and managerial problems. Content: Graduate students will study principles and methods of static and dynamic optimization, including linear and nonlinear programming, optimal control, and stochastic programming. During the course, graduate students will apply optimization methods to solve real economic and managerial problems.		v	v									
9	Research Methods	Purpose: To prepare graduate students to conduct scientific research using modern methods and approaches. Content: Graduate students will study the main methods of scientific research, including qualitative and quantitative methods, experimental and observational studies, data collection and analysis methods, and approaches to interpreting results.	4				v							
10	Business research	Purpose: To train graduate students in methods and tools for conducting business research to support managerial decisions and strategic planning. Content: Graduate students will study data collection and analysis methods, quantitative and qualitative research methods,					v		v					

		the development and conducting of surveys and interviews, analysis of market trends and competitive environment, as well as the preparation of analytical reports and presentations.												
11	Modelling of Financial Markets	Purpose: To train graduate students in methods for modeling financial markets to analyze and forecast their dynamics. Content: Graduate students will study theories of financial markets, methods of statistical and econometric analysis, models of financial asset pricing, simulation models, and methods for assessing and managing financial risks.	3						v					
12	Money & Banking	Purpose: To develop deep knowledge and skills in graduate students in the functioning of monetary systems and banking activities for strategic management of financial processes. Content: Graduate students will study theories of money, the roles and functions of central and commercial banks, mechanisms and tools of monetary policy, principles of banking and regulation, analysis of financial markets and instruments, as well as current trends in the banking sector.								v				
13	Sustainable development strategies	Purpose: To train graduate students in sustainable development strategies to achieve a balance between economic growth, social responsibility, and environmental protection. Content: Graduate students will study the concepts and principles of sustainable development, the development and implementation of sustainable development strategies, the evaluation of their effectiveness, and international standards and best practices. Cases and examples of successful sustainable development strategies are included.	5					v						
Cycle of major disciplines University's component														
10	Information management systems	Purpose: To prepare graduate students for the development, implementation, and management of information systems to improve business	5							v				

		processes and decision-making. Content: Graduate students will study the principles and architecture of information systems, methods of their development and integration, data and database management, information security, and the application of information systems in various business areas.												
11	Programming methods and techniques	Purpose: To train graduate students in modern programming methods and techniques for effectively solving complex problems in various fields. Content: Graduate students will study fundamental programming methods, including object-oriented, functional, and logic programming, algorithms and data structures, code optimization and debugging methods, as well as the use of modern development tools and technologies.	5							v				
12	Software Engineering	Purpose: To prepare graduate students for the design, development, and maintenance of software to solve complex problems in various fields. Content: Graduate students will study methods and models of software engineering, the software development lifecycle, project and quality management, testing and verification methods, as well as modern programming tools and technologies.	5							v				
13	Econometric methods	Purpose: To develop graduate students' skills in applying econometric methods for analyzing and interpreting economic data. Content: Graduate students will study basic econometric models, methods of regression analysis, time series, panel data, hypothesis testing, and the use of software for econometric analysis.	5	V	v									
14	Mathematical Economics and statistics	Purpose: To prepare graduate students to apply mathematical and statistical methods for analyzing and modeling economic processes. Content: Graduate students will study basic mathematical models in economics, methods of mathematical analysis and optimization, probability theory and statistics, regression analysis, and the application of statistical	5	v	v									

		methods in economic research and forecasting.												
Cycle of major disciplines														
Elective component														
13	Multidimensional Analisys	Purpose: To train graduate students in methods of multivariate analysis for processing and interpreting complex data. Content: Graduate students will study methods and models of multivariate statistical analysis, including factor analysis, cluster analysis, discriminant analysis, and principal component analysis. Examples of applying multivariate analysis to solve practical problems are included.	5	**v**	**v**									
14	Managerial analysis	Purpose: To develop graduate students' skills in conducting managerial analysis to support decision-making and improve organizational management. Content: Graduate students will study methods and tools of managerial analysis, including financial analysis, cost-benefit analysis, performance and efficiency analysis, as well as the use of data and analytical methods for solving managerial problems.	5								**v**			
15	Financial and Dynamic Econometrics	Purpose: To prepare graduate students to apply financial and dynamic econometric methods for analyzing and forecasting financial data. Content: Graduate students will study econometric analysis methods for financial time series, volatility models, cointegration, panel data analysis, and predictive modeling. Tools for evaluating and managing financial risks will also be covered.	5	**v**	**v**									
16	Monetary Economics	Purpose: To train graduate students in the theory and practice of monetary economics to understand the impact of monetary policy on the economy. Content: Graduate students will study the role of central banks, tools and mechanisms of monetary policy, theories of inflation and unemployment, the IS-LM model, and the impact of monetary policy on economic growth and stability.	5						**v**					
17	Financial analysis and	Purpose: To develop graduate students'	5	**v**					**v**					

	project evaluation	knowledge and skills in financial analysis and project evaluation for making informed investment decisions. Content: Graduate students will study methods of financial analysis, investment project evaluation, cash flow analysis, risk assessment, and determining the cost of capital. Practical assignments include conducting financial analysis and evaluating real projects.												
18	Internet Marketing	Purpose: To develop knowledge and skills in internet marketing for the effective promotion of goods and services in the online environment. Content: Graduate students will study the main tools and strategies of internet marketing, including SEO, pay-per-click advertising, social media, email marketing, and web analytics.	5								v			
19	Data Warehousing	Purpose: To train graduate students in the principles and methods of designing, creating, and managing data warehouses to support business analysis and decision-making. Content: Graduate students will study the architecture and components of data warehouses, data extraction, transformation, and loading (ETL) methods, data models, optimization and performance management methods, as well as data analysis tools and technologies.	5		v	v	v							
20	Market analysis and market research	Purpose: To prepare graduate students to conduct market analysis and marketing research to support strategic marketing and business decision-making. Content: Graduate students will study methods for collecting and analyzing market information, market segmentation, behavioral and demographic studies, competitive analysis, the development and conducting of surveys, and the use of analytical tools for data interpretation and marketing strategy development.	5								v			
21	Data mining	Purpose: To train graduate students in methods of extracting knowledge from data to make	5				v							

		informed decisions and improve business processes. Content: Graduate students will study methods and algorithms for data processing, machine learning, classification and clustering methods, time series analysis, and tools and technologies for data visualization and interpretation.													
22	Development Economics	Purpose: To prepare graduate students to understand and analyze the processes of economic development of countries and regions to develop effective growth strategies. Content: Graduate students will study theories and models of economic development, growth factors, the role of institutional and political aspects, strategies and policies for promoting development, and the evaluation of the effectiveness of development programs and projects.	5					**v**							