

3. Educational programme.

Digital Economics (for Master's degree). The Director of the Master's degree programme is Gamaliy, V. F., Doctor of Sciences (Physics and Mathematics), Professor, Professor of the Department of Digital Economics and System Analysis.

3.1. Profile of the educational programme "Digital Economics" in the subject area 051 "Economics"

1 – Загальна інформація	
Full name of the HEI and structural unit	State University of Trade and Economics, Faculty of Information Technology, Department of Digital Economics and System Analysis
Degree of higher education and title of qualification in the original language	Master's degree in higher education Subject Area "Economics"
Official name of the educational programme	"Digital Economics"
Compliance with the standard of higher education of the Ministry of Education and Science of Ukraine	Complies with the Standards of Higher Education approved by the Ministry of Education and Science of Ukraine
Type of diploma and duration of the educational programme	Master's degree, single, 90 ECTS credits, duration of study 1 year 4 months
Holding of accreditation	First accreditation is scheduled for 2026
Cycle/level	NQF of Ukraine – level 7, FQ-EHEA – second cycle, EQF-LLL – level 7
Academic background	Holding a bachelor's degree in higher education
Language(s) of instruction	Ukrainian, English
Validity of the educational programme	2 years
Internet address of the permanent webpage of the educational programme description	https://knute.edu.ua
2 – Objective of the Educational Programme	
Training of masters in digital economics capable of creating and researching mathematical models of development of various spheres of economic activity in the digital space, implementation and use of digital technologies for the effective functioning of complex economic objects, processes and systems.	
3 - Outline of the educational programme	

Field of study	<p>Object of study and/or activity: modern economic processes and phenomena, scientific methods of regulatory, quantitative and institutional analysis, tools for the formation of international, national, regional, sectoral economic policy and enterprise economics.</p> <p>Learning objectives: training of highly qualified professionals in economics with modern economic thinking, theoretical knowledge and applied skills capable of solving complex research, innovation and management tasks and problems of functioning of economic systems of different levels, characterized by uncertainty of conditions and requirements.</p> <p>Theoretical content of the subject area: general laws and trends of economic development, motivation and behavior of market participants; theories of micro-, macro- and international economics; modern quantitative methods of analysis of economic processes; institutional and interdisciplinary analysis; regularities of modern socio-economic processes; theories of economic management for various production systems and sectors of the economy.</p> <p>Methods, techniques and technologies: general scientific and specific methods of cognition and research; mathematical, statistical, qualitative methods of economic analysis; sociological, expert evaluation, questionnaires; economic and mathematical modeling, forecasting; information and communication technologies, special software; methods of research and presentation of research results.</p> <p>Tools and equipment: modern information and communication equipment, information systems and software products used in economic activities.</p>
Focus of the educational programme	Educational and professional. Emphasis is on the study of theoretical and practical principles of modeling complex economic systems in the digital space and their information support in the digital economy.
The main focus of the educational programme	<p>Specialized education in the field of mathematical modelling and digital technologies in economics.</p> <p>Keywords: economic systems, economic processes, mathematical modeling of the digital economy, information systems, information technologies, digital space, digital technologies.</p>
Advantages of the programme	Professional and practical training involves the study of educational components that will allow you to master theoretical knowledge and practical skills of mathematical modeling and creation of information systems for managing complex economic processes in the digital space.
4 – Career opportunities and further learning	
Career opportunities	The field of professional activity of graduates is the preparation and implementation of effective solutions to the problems of digitalization of the economy on the basis of economic and mathematical methods and models using computer technology and information technology.

	<p>List of economic activities that a master's degree in digital economy can perform:</p> <table border="1"> <tr> <td>Code in CLASSIFIER OF ECONOMIC ACTIVITIES DK 009:2010</td> <td>National Classification of Occupations</td> </tr> <tr> <td>62.02</td> <td>Consulting on informatization issues</td> </tr> <tr> <td>63.11</td> <td>Data processing, publishing information on websites and related activities</td> </tr> <tr> <td>63.12</td> <td>Website portals</td> </tr> <tr> <td>85.42</td> <td>Higher Education</td> </tr> </table> <p>Positions that a Master of Science in Digital Economics can hold:</p> <table border="1"> <tr> <td>Code in DK 003:2010</td> <td>Occupation title</td> </tr> <tr> <td>1210.1</td> <td>Head of the computing (information and computing) center</td> </tr> <tr> <td>1210.1</td> <td>Head of an enterprise (institution, organization) (information security)</td> </tr> <tr> <td>2131.1</td> <td>Researcher-consultant (computer systems)</td> </tr> <tr> <td>2131.2</td> <td>Computer communications analyst</td> </tr> <tr> <td>2131.2</td> <td>Computer systems analyst</td> </tr> <tr> <td>2433.1</td> <td>Researcher-consultant (information analytics)</td> </tr> <tr> <td>3121</td> <td>Information technology specialist</td> </tr> </table> <p>Subject to the acquisition of relevant experience, he can adapt to the following areas of related professional activity: marketing, foreign economic, educational, research and development.</p>	Code in CLASSIFIER OF ECONOMIC ACTIVITIES DK 009:2010	National Classification of Occupations	62.02	Consulting on informatization issues	63.11	Data processing, publishing information on websites and related activities	63.12	Website portals	85.42	Higher Education	Code in DK 003:2010	Occupation title	1210.1	Head of the computing (information and computing) center	1210.1	Head of an enterprise (institution, organization) (information security)	2131.1	Researcher-consultant (computer systems)	2131.2	Computer communications analyst	2131.2	Computer systems analyst	2433.1	Researcher-consultant (information analytics)	3121	Information technology specialist
Code in CLASSIFIER OF ECONOMIC ACTIVITIES DK 009:2010	National Classification of Occupations																										
62.02	Consulting on informatization issues																										
63.11	Data processing, publishing information on websites and related activities																										
63.12	Website portals																										
85.42	Higher Education																										
Code in DK 003:2010	Occupation title																										
1210.1	Head of the computing (information and computing) center																										
1210.1	Head of an enterprise (institution, organization) (information security)																										
2131.1	Researcher-consultant (computer systems)																										
2131.2	Computer communications analyst																										
2131.2	Computer systems analyst																										
2433.1	Researcher-consultant (information analytics)																										
3121	Information technology specialist																										
Further learning	<p>Opportunity to study in postgraduate programmes in the specialties:</p> <p>051 – Economics; 121 – Software engineering; 122 – Computer science; 123 – Computer engineering; 124 – Systems analysis; 125 – Cybersecurity; 126 – Information systems and technologies.</p>																										
5 – Teaching and assessment																											
Teaching methods and learning	Problem-based learning, self-study, learning through practical training.																										
Assessment	Ongoing assessment, written exams, defense of qualification work. Assessment is carried out in accordance with the Regulations on Assessment of Undergraduate and Postgraduate Students' Learning Outcomes at SUTE, the Regulations on the Organization of the Students' Educational Process																										
6 – Programme competences																											
Integral competence	Ability to identify and solve complex economic modeling problems and problems of digital economy management, to make appropriate analytical and managerial decisions in the field of																										

	economics or in the process of study, which involves research and/or innovation and the use of information technology under uncertain conditions and requirements.
General competencies (GC)	<p>GC1. Ability to generate new ideas (creativity).</p> <p>GC2. Ability to think abstractly, analyze and synthesize.</p> <p>GC3. Ability to motivate people and move towards a mutual goal.</p> <p>GC4. Ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge/ types of economic activity).</p> <p>GC5. Ability to work in a team.</p> <p>GC6. Ability to develop and manage projects.</p> <p>GC7. Ability to act on the basis of ethical considerations (motives).</p> <p>GC8. Ability to conduct research at the appropriate level.</p>
Vocational (professional, study-related) competencies	<p>VC1. Ability to apply scientific, analytical, methodological tools to substantiate the development strategy of economic entities and related management decisions.</p> <p>VC2. Ability to communicate professionally in the field of economics in a foreign language.</p> <p>VC3. The ability to collect, analyze and process statistical data, scientific and analytical materials necessary for solving complex economic problems, and to draw reasonable conclusions based on them.</p> <p>VC4. Ability to use modern information technologies, methods and techniques for researching economic and social processes that are adequate to the established research needs.</p> <p>VC5. Ability to identify key trends in socio-economic and human development.</p> <p>VC6. Ability to formulate professional tasks in the field of economics and solve them, choosing appropriate directions and appropriate methods for their solution, taking into account available resources.</p> <p>VC7. Ability to rationalize management decisions on the effective development of business entities.</p> <p>VC8. Ability to assess possible risks, social and economic consequences of management decisions.</p> <p>VC9. Ability to apply a scientific approach to the formation and implementation of effective projects in the socio-economic sphere.</p> <p>VC10. Ability to develop scenarios and strategies for the development of socio-economic systems.</p> <p>VC11. Ability to plan and develop projects in the field of economics, provide information, methodological, material, financial, and personnel support.</p> <p><i>VC12. Ability to study methods and tools for modeling economic processes and systems in the digital space and develop technologies for their software implementation.</i></p> <p><i>VC13. Ability to conduct research in the field of modeling, informatization and digitalization of the economy.</i></p>

	<p><i>VC14. Ability to think systematically, apply the methodology of system analysis to study complex problems of different nature, methods of formalizing and solving systemic problems with conflicting goals, uncertainties and risks.</i></p> <p><i>VC15. Ability to perform intellectual multidimensional data analysis and their operational analytical processing with visualization of analysis results in the process of solving applied problems of the digital economy.</i></p>
7 – Programme learning outcomes (PLO)	
	<ol style="list-style-type: none"> 1. Formulate, analyze and synthesize solutions to scientific and practical problems. 2. To develop, justify and make effective decisions on the development of socio-economic systems and management of economic entities. 3. Communicate fluently on professional and scientific issues in the state and foreign languages orally and in writing. 4. Develop socio-economic projects and a system of comprehensive actions for their implementation, taking into account their goals, expected socio-economic consequences, risks, legislative, resource and other limitations. 5. Adhere to the principles of academic integrity. 6. Reflect on the results of their own work, demonstrate leadership skills and the ability to manage staff and work in a team. 7. Choose effective methods of managing economic activities, justify proposed solutions based on relevant data and scientific and applied research. 8. Collect, process and analyze statistical data, scientific and analytical materials necessary for solving complex economic problems. 9. Make effective decisions under uncertain conditions and requirements that require the use of new approaches, methods and tools for socio-economic research. 10. Apply modern information technologies and specialized software in socio-economic research and in the management of socio-economic systems. 11. Identify and critically evaluate the state and trends of socio-economic development, create and analyze models of economic systems and processes. 12. Justify managerial decisions on the effective development of business entities, taking into account goals, resources, constraints and risks. 13. Assess possible risks, social and economic consequences of management decisions. 14. Develop scenarios and strategies for the development of socio-economic systems. 15. Organize the development and implementation of socio-economic projects, taking into account information, methodological, material, financial and personnel support.

	<p>16. To develop and analyze models of digitalization of economic processes and carry out their software implementation in the digital space.</p> <p>17. Know and understand modern methods of researching mathematical models and algorithms for data mining, information retrieval and knowledge acquisition in the field of economics.</p>
8 – Resource support for programme implementation	
Staffing support	<p>Specialists who train masters in the educational program “Digital Economics” must have professional knowledge and professional skills in the field of mathematical modeling and modern information technology.</p> <p>The participation of foreign specialists and practitioners in teaching the disciplines of the professional training cycle is possible.</p>
Facilities	<p>The basis of material and technical support is computer laboratories with modern hardware and software resources that ensure high-quality training of masters in the Digital Economics programme.</p>
Informational, teaching and learning materials	<p>General scientific and specialized sources of information on the digital economy, educational and monographic literature, information resources of the Department of Distance Learning Support and the Internet.</p>
9 – Academic mobility	
National credit system-based mobility	<p>National credit mobility is carried out in accordance with the concluded agreements on academic mobility.</p>
International credit system-based mobility	<p>International credit mobility is realized through the conclusion of agreements on international academic mobility, including Erasmus+ programs, long-term international projects involving education in programmes implemented jointly with foreign universities, etc.</p>
Training of foreign higher education students	<p>Prerequisites and specifics of the educational program in the context of studying for foreign citizens: knowledge of Ukrainian at least B1 level.</p>

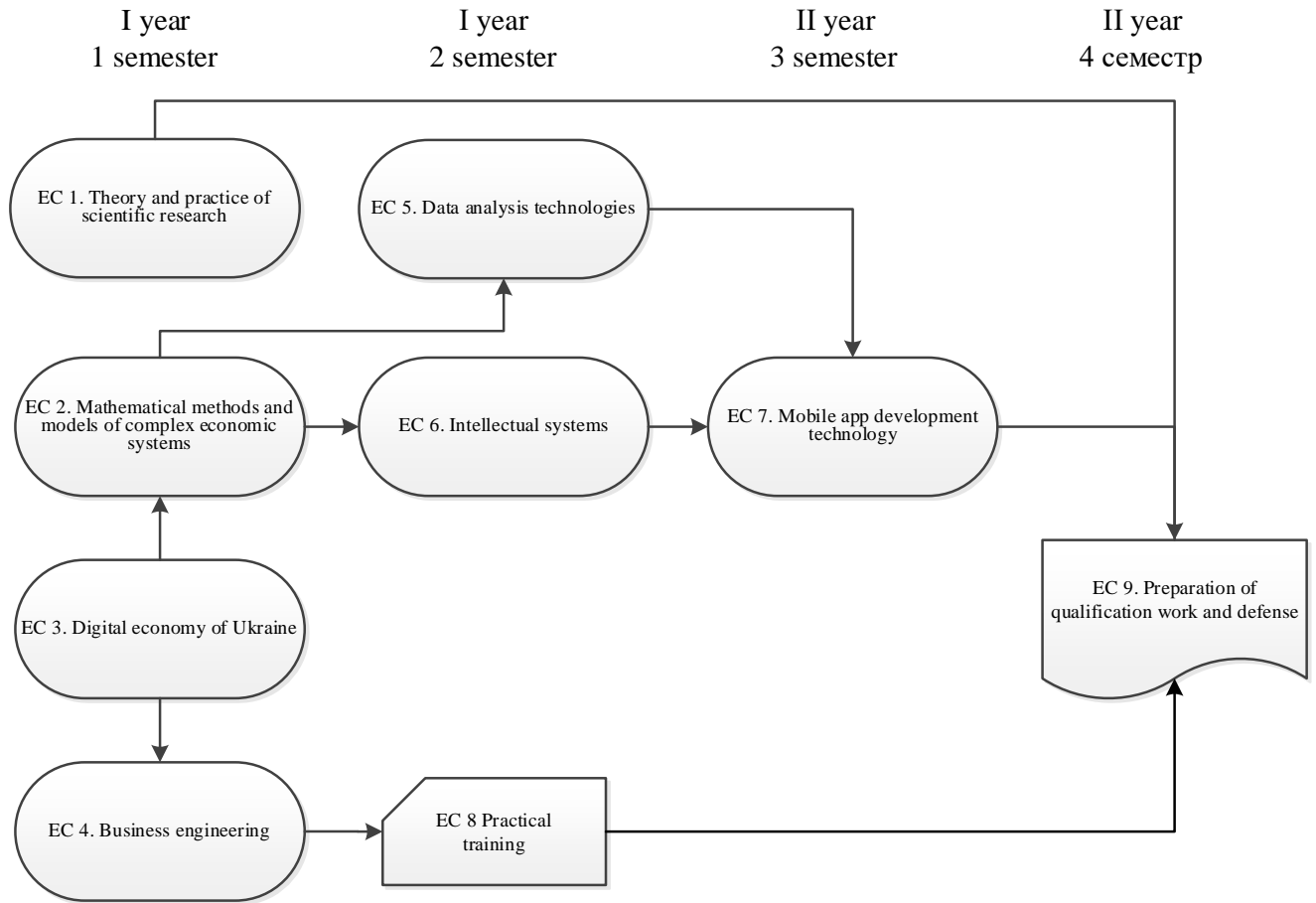
3.2. List of components of the educational program and their logical sequence

3.2.1 List of educational programme components

Code #	Components of the educational program (academic disciplines, course projects (works), internships, qualifying examination, qualifying work)	Total credits
Compulsory components of educational programme (CC)		
CC 1.	Theory and practice of scientific research	6
CC 2.	Mathematical methods and models of complex economic systems	6
CC 3.	Digital economy of Ukraine	6
CC 4.	Business engineering	6
CC 5.	Data analysis technologies	7,5
CC 6.	Intellectual systems	7,5
CC 7.	Mobile app development technology	6
CC 8.	Hands-on training	9
CC 9.	Preparation of qualification work and defense	12
Total credits for compulsory components:		66
Elective courses of educational programme (EC)		
EC 1.	Enterprise programming in Java	6
EC 2.	Big Data analytics	6
EC 3.	Life safety	6
EC 4.	Security of information systems and networks	6
EC 5.	Biometric authentication technologies in information systems	6
EC 6.	Public financial strategy	6
EC 7.	Contract law	6
EC 8.	Information policy of the state	6
EC 9.	Information warfare	6
EC 10.	Cryptographic methods of information protection	6
EC 11.	Video information processing methods	6
EC 12.	Methods of formalized representation of systems	6
EC 13.	Fundamentals of cybersecurity	6
EC 14.	Applied systems analysis	6
EC 15.	Software tools for project management	6
EC 16.	Design of recommender systems	6
EC 17.	Systematic analysis of complex economic systems under uncertainty	6
EC 18.	Stochastic models in the economy	6
EC 19.	IoT security technology	6
EC 20.	Knowledge management	6
EC 21.	Project management	6
EC 22.	Financial ecosystems	6
EC 23.	Digital technologies in advertising	6
Total credits for elective courses:		24
TOTAL CREDITS FOR THE EDUCATIONAL PROGRAMME		90

The exam is a form of final control for all components of the educational programme.

3.2.2 Structural and logical scheme of the educational programme



3.3. Qualification forms for higher education graduates

The qualifying assessment is carried out in the form of a public defense of the qualifying work.

The qualification work must provide for an independent solution to a complex task or problem in the political sphere based on professional research and/or innovation. The qualification work should not contain academic plagiarism, falsification and fabrication.

The qualification work must be made available on the official website or in the repository of the higher education institution or its subdivision. Disclosure of qualification papers containing limited access information shall be made in accordance with the requirements of applicable law.

3.4. Matrix of conformity of mandatory competencies with educational programme components

Components Competencies	EC 1	EC 2	EC 3	EC 4	EC 5	EC 6	EC 7	EC 8	EC 9
GC1.	+			+	+		+		+
GC2.		+				+			+
GC3.				+					
GC4.	+		+						
GC5.				+			+	+	
GC6.	+		+	+			+	+	+
GC7.	+	+				+			
GC8.	+	+			+			+	+
VC 1	+		+	+				+	+
VC 2					+			+	+
VC 3		+			+			+	+
VC 4					+	+	+	+	+
VC 5			+					+	+
VC 6		+		+				+	+
VC 7		+	+	+				+	+
VC 8		+						+	+
VC 9	+							+	+
VC 10			+					+	+
VC 11				+				+	+
VC 12		+					+	+	+
VC 13	+				+	+	+	+	+
VC 14	+				+	+		+	+
VC 15					+	+		+	+

3.5. Matrix of correspondence of program competencies to elective components of the educational programme

Components Competencies	EC1	EC2	EC3	EC4	EC5	EC6	EC7	EC8	EC9	EC10	EC11	EC12	EC13	EC14	EC15	EC16	EC17	EC18	EC19	EC20	EC21	EC22	EC23	
	GC1.	+																			+	+		+
GC2.		+				+		+				+		+			+	+						
GC3.																				+	+	+		
GC4.				+	+		+		+	+												+		+
GC5.	+		+								+				+	+						+		+
GC6.											+				+							+		
GC7.			+				+		+				+											+
GC8.		+		+	+	+		+		+			+	+				+	+				+	
VC 1		+				+		+														+	+	
VC 2	+																							
VC 3		+							+			+	+				+	+	+			+		+
VC 4	+	+		+	+					+	+	+	+		+	+			+					+
VC 5						+	+	+	+														+	
VC 6														+				+				+		
VC 7																		+		+	+			
VC 8			+	+	+	+	+			+			+				+	+					+	
VC 9													+									+		
VC 10						+		+															+	
VC 11														+	+						+	+		
VC 12												+		+										
VC 13	+							+			+					+				+				+
VC 14												+		+			+	+		+				
VC 15		+														+		+						

3.6. Matrix of providing of the programme learning outcomes (PLOs) with the relevant mandatory components of the educational programme

Components Programme learning outcomes	EC 1	EC 2	EC 3	EC 4	EC 5	EC 6	EC 7	EC 8	EC 9
1					+			+	+
2		+		+				+	+
3	+		+		+			+	+
4			+	+				+	+
5	+							+	+
6				+			+	+	+
7		+						+	+
8					+			+	+
9		+				+		+	+
10					+	+	+	+	+
11			+					+	+
12		+		+				+	+
13		+	+	+				+	+
14			+	+				+	+
15				+			+	+	+
16						+	+	+	+
17					+	+		+	+

3.7. Matrix of providing programme learning outcomes (PLOs) with relevant elective components of the educational programme

Components Programme learning outcomes	EC1	EC2	EC3	EC4	EC5	EC6	EC7	EC8	EC9	EC10	EC11	EC12	EC13	EC14	EC15	EC16	EC17	EC18	EC19	EC20	EC21	EC22	EC23	
1												+		+						+	+			
2							+	+														+	+	
3								+	+															+
4						+	+	+	+				+		+	+			+		+			
5							+	+																
6	+			+	+					+	+				+							+		
7						+		+										+		+				
8	+	+		+	+					+	+	+				+			+		+			
9							+		+			+	+				+	+						
10	+	+		+	+					+	+								+		+			+
11						+			+					+							+		+	
12			+				+						+				+	+				+		
13			+										+	+				+						
14						+		+															+	
15															+	+						+		+
16	+			+	+					+	+	+					+		+					+
17		+			+									+					+	+				

