3.   Educational program. Digital economics (Bachelor's degree) – guarantor of the educational program – Ivanova O. M., PhD in Economics, Associate Professor, Associate Professor of the Department of Digital Economics and System Analysis.

3.1. Profile of the educational program in Specialty 051 "Economics" (in Specialization "Digital Economics")

1 – General information	
Full name of HEI and structural unit	Kyiv National University of Trade and Economics, Faculty of Information Technologies, Department of Digital Economics and System Analysis
Degree of higher education and the qualification name in the original language	Degree of higher education "Bachelor", specialty "Economics", specialization "Digital Economics"
The official name of the educational program	"Digital Economics"
Diploma type and volume of the educational program	Bachelor diploma, single, 240 ECTS credits, term of study 3 years 10 months.
Accreditation	Primary accreditation is scheduled for 2023
Cycle\level	NFC of Ukraine – 6 level, FQ-EHEA – first cycle, EQF-LLL – 6 level
Prerequisites	Full general secondary education
Language(s) of teaching	Ukrainian
Validity period of the educational program	4 years
Internet address of the permanent placement of the description of the educational program	https://knute.edu.ua
2 – Purpose of the Educational Program	
Training of bachelors in digital economics who are able to carry out professional activities aimed at building models of economic objects and processes, their research and analysis in order to make effective management decisions based on the assimilation of basic economic concepts, digital technologies, principles of modeling and creating information systems.	
3 - Educational program characteristics	
Subject area (branch of knowledge, specialty and specialization (if available))	branch of knowledge 05 "Social and behavioral sciences" specialty 051 "Economics" specialization "Digital Economics".
Orientation of the educational program	Educational and professional. Emphasis on studying of principles of constructing of mathematical models and information systems and their practical implementation for real economic processes in the digital space.

The main focus of the educational program and specialization	Special education in branch of mathematical modeling and digital technologies in economics. Keywords: digital systems, digital technologies, economic systems, economic processes, mathematical modeling, mathematical methods, information systems, information technologies, decision-making, forecasting, management, digital infrastructure, digital space.
Peculiarities of the program	In the cycle of professional and practical training are provided disciplines, the study of which will allow to possess theoretical knowledge and practical skills of modeling and information support of management of economic systems in the digital space.

4 – Eligibility of graduates for employment and further education	
Eligibility for employment	The field of professional activity of graduates is the management of objects and processes of the digital economy by construction, research and analysis of models and their information support. List of economic activities that a bachelor of digital economics can perform:

Classification of types of economic activity DK 009: 2010	Name of economic activity
62.02	Consulting with informatization issues
63.11	Data processing, posting information on websites and related activities with them
63.12	Web portals

Positions that a bachelor in digital economics can hold:

National Classification of Ukraine "Classifier of professions DK 003:2010"	Name of professions
1226.2	The head of a structural division (sphere of information security)
2131.1	Researcher-consultant (computing systems)
2131.2	Computer communications analyst
2131.2	Computer systems analyst
2139.2	Computer application engineer
2139.2	Information technology management expert
2419.2	Specialist in economic modeling of environmental systems
2433.1	Researcher-consultant (information analytics)
2441.2	Economist of the computing (information and computing) center
3121	Information technology specialist

As a result of acquisition of relevant experience, he can adapt to the following directions of related professional activity: economic, marketing, foreign economic, educational, research.

Further education	Opportunity to study for obtaining master's degree for the educational and professional program "Digital Economics" or related fields, as well as to improve qualification and to get additional postgraduate education.
5 – Teaching and assessment	
Teaching and learning	Problem-oriented learning, self-learning, learning with the help of practical training.
Assessment	Current control, exams in written form, certification. Assessment is carried out in accordance with the "Regulation on assessment of the learning outcomes of students and PhD students of KNUTE", "Regulation on the organization of the educational process of students"
6 – Program competencies	
Integral competence	Ability to solve complex specialized problems and practical problems in the economic sphere, which are characterized by complexity and uncertainty of conditions, which implies the use of theories and methods of *economic science*
General Competence (GC)	GC 1. Ability to exercise their rights and obligations as a member of society, to realize the values of civil (democratic) society and the need for its sustainable development, the rule of law, rights and freedoms of human and citizen in Ukraine. GC 2. The ability to preserve moral, cultural, scientific values and increase the achievements of society based on an understanding of the history and regularities of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technic and technologies, to use various types and forms of motion activity for active recreation and maintaining a healthy lifestyle. GC 3. Ability to abstract thinking, analysis, synthesis. GC 4. Ability to apply knowledge in practical situations. GC 5. Ability to communicate in the state language both orally and in writing. GC 6. Ability to communicate in a foreign language. GC 7. Skills in using information and communication technologies. GC 8. Ability to search, process and analyze of information from various sources. GC 9. Ability to adapt and act in a new situation. GC 10. Ability to be critical and self-critical. GC 11. Ability to make informed decisions. GC 12. Interpersonal interaction skills. GC 13. Ability to act socially responsibly and consciously.
Professional competence of the specialty (PC)	PC 1. Ability to identify knowledge and understanding of the problems of the subject area, the basics of functioning of the modern economy at the micro, meso, macro and international levels. PC 2. Ability to carry out professional activities in accordance with current regulatory and legal acts. PC 3. Understanding of peculiarities of leading scientific schools and directions of economic science. PC 4. Ability to explain economic and social processes and phenomena based on theoretical models, analyze and interpret the obtained results meaningfully.

	PC 5. Understanding the features of the modern world and national economy, their institutional structure, justification of the directions of social, economic and foreign economic policy of the state.
	PC 6. Ability to apply economic and mathematical methods and models to solve economic problems.
	PC 7. Ability to apply computer technologies and data processing software to solve economic problems, analyze information and prepare analytical reports.
	PC 8. Ability to analyze and solve problems in the field of economic and social and labor relations.
	PC 9. Ability to predict socio-economic processes based on standard theoretical and econometric models.
	PC 10. Ability to use modern sources of economic, social, managerial and accounting information for drafting official documents and analytical reports.
	PC 11. Ability to justify economic decisions based on an understanding of the patterns of economic systems and processes and using modern methodological tools.
	PC 12. Ability to identify economic problems independently when analyzing specific situations, to suggest ways to solve them.
	PC 13. Ability to conduct an economic analysis of the functioning and development of business entities, assessment their competitiveness.
	PC 14. Ability to analyze problems and phenomena in depth in one or more professional areas, in consideration of economic risks and possible socio-economic consequences.
	PC 15. Ability to operate an information system and application software.
	PC 16. Ability to design the technological process of collecting, processing and storing information.
	PC 17. Ability to model economic and business processes, systems, phenomena using the mathematical and computer modeling device.

7 – Program learning outcomes	
	1. To associate yourself as a member of civil society, scientific community, recognize the rule of law, in particular in professional activities, understand and be able to use your own rights and freedoms, show respect for the rights and freedoms of others, in particular, team members.
	2. To reproduce moral, cultural and scientific values, increase the achievements of society in the socio-economic sphere, and promote a healthy lifestyle.
	3. To know and use economic terminology, explain the basic concepts of micro-and macroeconomics.
	4. To understand the principles of economic science, features of the functioning of economic systems.
	5. To apply analytical and methodological tools to justify proposals and make managerial decisions by various economic agents (individuals, households, enterprises and state authorities).
	6. To use professional argumentation to convey information, ideas, problems and ways to solve them to specialists and non-specialists in the field of economic activity.

	7. To explain models of socio-economic phenomena from the point of view of fundamental principles and knowledge based on an understanding of the main directions of economic science development.
	8. To apply appropriate economic and mathematical methods and models to solve economic problems.
	9. To be aware of the main features of the modern world and national economy, institutional structure, directions of social, economic and foreign economic policy of the state.
	10. To analyze the functioning and development of business entities, determine functional areas, calculate the corresponding indicators that characterize the effectiveness of their activities.
	11. To be able to analyze the processes of state and market regulation of socio-economic and labor relations.
	12. To apply the acquired theoretical knowledge to solve practical problems and interpret obtained results meaningfully.
	13. To identify sources and understand the methodology for determining and obtaining socio-economic data, collect and analyze the necessary information, calculate economic and social indicators.
	14. To identify and plan opportunities for personal professional development.
	15. To demonstrate basic creative and critical thinking skills in research and professional communication.
	16. To be able to use data, provide arguments, critically evaluate logic and form conclusions from scientific and analytical texts on economics.
	17. To perform an interdisciplinary analysis of socio-economic phenomena and problems in one or more professional areas, in consideration of risks and possible socio-economic consequences.
	18. To use regulatory and legal acts regulating professional activity.
	19. To use information and communication technologies to solve socio-economic problems, prepare and submit analytical reports.
	20. To possess the skills of oral and written professional communication in the state and foreign languages.
	21. To be able to think abstractly, apply analysis and synthesis to identify key characteristics of economic systems of various levels, as well as features of the behavior of their subjects.
	22. To demonstrate flexibility and adaptability in new situations, in working with new objects, and in uncertain conditions.
	23. To show independent work skills, demonstrate critical, creative, and self-critical thinking.
	24. To demonstrate the ability to act socially responsibly and consciously on the basis of ethical principles, to appreciate and respect cultural diversity, individual differences of people.
	25. To demonstrate a sustainable understanding of the functioning of economic systems in the digital space.
	26. To perform programming using tools in various software environments.
	27. To model decision-making processes in conditions of uncertainty.
	28. To develop models of business processes (organizational, functional, information and management models).

	29. To develop and study economic and mathematical models of economic objects and systems in order to analyze them and improve the management system.	

8 – Resource support for the implementation of the program	
Staff support	Specialists who train bachelors in the educational program "Digital Economics" must have professional knowledge and possess professional skills in the field of mathematical modeling and/or modern information technologies. It is possible to involve foreign specialists and practitioners in teaching disciplines of the professional training cycle
Material and technical provision	The basis of material and technical support consists of computer laboratories with modern hardware and software resources that provide high-quality training of bachelors in the educational program "Digital Economics".
Information and educational-methodological support	General scientific and special sources of information on the digital economics, educational-methodological and monographic literature, information resources of the distance learning system and the Internet.
9 – Academic mobility	
National Credit Mobility	National Credit mobility is carried out in accordance with the concluded academic mobility agreements.
International Credit Mobility	International credit mobility is implemented by concluding agreements on international academic mobility (Erasmus+), on double graduation, on long-term international projects that involve training students, issuing a double diploma and so on.
Teaching for foreign applicants of higher education	Conditions and features of the educational program in the context of teaching foreign citizens: knowledge of Ukrainian at a level not lower than B1.

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

3.2.1 List of EP components

Code n/a	Components of the educational program (academic disciplines, course projects (works), practices, qualification exam, final qualification work)	Number of credits
Required EP components		
RC 1	Discrete Mathematics	6
RC 2	Office Computer Technologies	6
RC 3	Jurisprudence	6
RC 4	Higher and Applied Mathematics	12
RC 5	Foreign Language for Specific Purposes	24
RC 6	Macroeconomics	6
RC 7	Philosophy	6
RC 8	Finance, Money and Credit	6
RC 9	Probability Theory and Mathematical Statistics	6
RC 10	Algorithmization and Programming	12
RC 11	Microeconomics	6
RC 12	Digital Systems and Technologies	6
RC 13	Business Economics and Finance	6
RC 14	Java Technology	6

RC 15	Forecasting of Socio-Economic Processes	9
RC 16	E-commerce	6
RC 17	Information Systems and Technologies in the Economy	6
RC 17.1	CW on Information Systems and Technologies in the Economy	
RC 18	Business Process Modeling	6
RC 18.1	CW on Business Process Modeling	
RC 19	Risk Manegement	6
RC 20	Practical Course "Business Simulation"	9
RC 21	Business Analytics Tools	6
RC 22	Decision-Making Systems	6
Total volume of required components:		**168**
Selective EP components		
SC 1.	Analysis of the Financial Markets	6
SC 2.	Life Safety	6
SC 3.	Business Planning	6
SC 4.	Business Technologies	6
SC 5.	Accounting	6
SC 6.	Economic Analysis	6
SC 7.	E-government	6
SC 8.	Electronic Document Circulation	6
SC 9.	Simulation Modeling	6
SC 10.	Intellectual Property	6
SC 11.	Internet Technologies in Business	6
SC 12.	Information Law	6
SC 13.	History of Ukraine	6
SC 14.	History of Ukrainian Culture	6
SC 15.	Cross-Platform Programming	6
SC 16.	Cultural Heritage of Ukraine	6
SC 17.	Machine Learning	6
SC 18.	Management	6
SC 19.	International Economics	6
SC 20.	International Economic Relations	6
SC 21.	National Interests in Global Geopolitics and Geoeconomics	6
SC 22.	Elocution	6
SC 23.	Organization of Computer Networks	6
SC 24.	Payment Systems	6
SC 25.	Psychology	6
SC 26.	Religious Studies	6
SC 27.	World Culture	6
SC 28.	Digital Marketing Technologies	6
SC 29.	Technology of Design and Administration of Databases and Data Warehouses	6
SC 30.	Technology for Creating Separated Databases and Knowledge	6
SC 31.	Ukrainian for Specific Purposes	6
SC 32.	Management of Innovations	6
SC 33.	Financial Services	6
SC 34.	Cloud and GRID Technologies	6
SC 35.	Digital Technologies in Business	6
SC 36.	WEB-analytics	6
Total volume of selective components:		**60**

Practical training	
Industrial practice 1	**3**
Industrial practice 2	**6**
Total	**9**
Certification	
Preparation for the qualification exam and certification	3
TOTAL VOLUME OF THE EDUCATIONAL PROGRAM	**240**

For all components of the educational program, the final control form is an exam.

3.2.2 Structural and logical scheme of the educational program
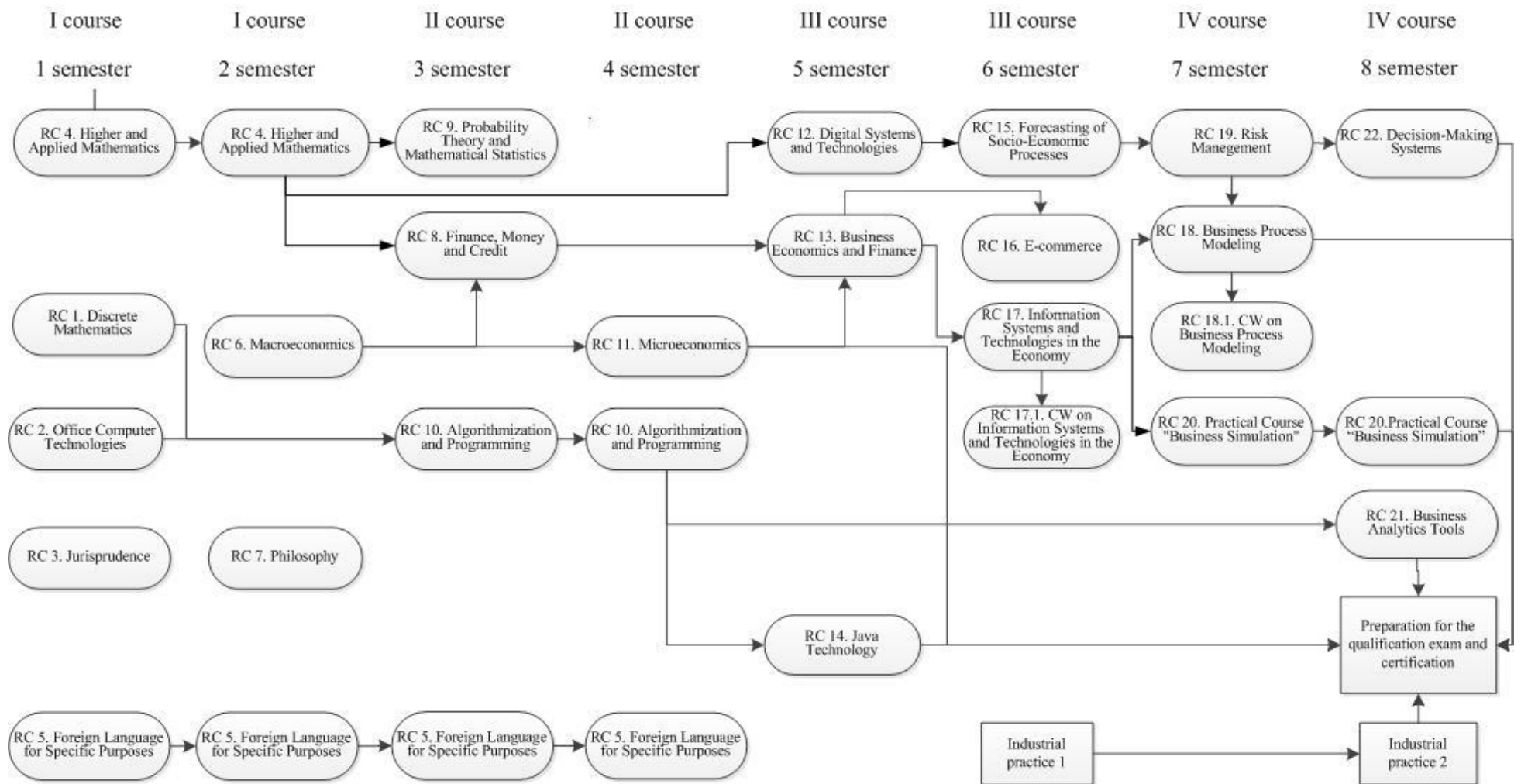
3.3. Form of certification of higher education applicants

Certification is carried out in the form of a qualification exam. The qualification exam in the specialty should check the achievement of learning outcomes defined by the Higher Education Standard and this educational program.

3.4. Matrix of correspondence of program competence to required EP components

Components / Competences	RC 1	RC 2	RC 3	RC 4	RC 5	RC 6	RC 7	RC 8	RC 9	RC 10	RC 11	RC 12	RC 13	RC 14	RC 15	RC 16	RC 17	RC 17.1	RC 18	RC 18.1	RC 19	RC 20	RC 12	RC 22
GC1.			+				+																	
GC2.							+																	
GC3.	+			+		+	+		+	+	+	+		+					+		+	+	+	+
GC4.	+	+	+	+				+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
GC5.			+			+							+						+		+			
GC6.					+																			
GC7.	+	+								+		+		+	+	+	+	+	+	+	+	+	+	+
GC8.	+	+		+				+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
GC9.			+				+															+		
GC10.			+				+																	
GC11.			+																		+	+		+
GC12.			+		+		+																	+
GC13.			+				+																	
PC1.		+				+		+			+		+		+	+			+		+			
PC2.			+										+											
PC3.						+					+													
PC4.						+					+		+		+	+			+	+	+	+		
PC5.						+		+			+		+											
PC6.		+		+											+				+		+	+	+	+
PC7.		+								+		+		+	+	+	+	+	+	+		+	+	+
PC8.						+					+		+				+							
PC9.		+													+							+		
PC10.		+											+											
PC11.						+		+			+		+		+	+	+	+				+		+
PC12.						+		+			+		+											
PC13.		+						+					+		+	+						+		
PC14.													+								+			
PC15		+								+				+				+	+	+	+	+	+	+
PC16		+														+	+	+				+	+	
PC17															+				+	+	+	+		+

3.5. Matrix of correspondence of program competence to selective EP components

Components / Competences	SC 1	SC 2	SC 3	SC 4	SC 5	SC 6	SC 7	SC 8	SC 9	SC 10	SC 11	SC 12	SC 13	SC 14	SC 15	SC 16	SC 17	SC 18	SC 19	SC 20	SC 21	SC 22	SC 23	SC 24	SC 25	SC 26	SC 27	SC 28	SC 29	SC 30	SC 31	SC 32	SC 33	SC 34	SC 35	SC 36
GC1							+			+		+																								
GC2		+											+	+		+										+	+									
GC3									+						+																					
GC4															+			+							+					+		+		+		+
GC5																						+									+					
GC6																			+	+																
GC7								+	+		+	+			+		+						+					+	+	+				+	+	+
GC8			+		+	+		+							+																					
GC9			+																						+							+				
GC10																			+						+											
GC11																			+		+	+			+											
GC12																							+		+	+										
GC13		+																							+											
PC1			+	+		+													+	+				+									+			
PC2										+		+																								
PC3																			+		+															
PC4	+																								+							+				
PC5																			+	+	+															
PC6									+								+																			
PC7					+			+	+		+				+		+											+	+	+				+	+	+
PC8					+	+				+		+									+											+				
PC9	+		+						+																											
PC10			+		+	+																														
PC11	+		+	+		+													+	+											+	+		+		
PC12																			+	+																
PC13	+					+																														
PC14	+		+			+																		+												
PC15								+	+		+				+								+					+	+	+				+	+	+
PC16				+				+																				+	+	+					+	+
PC17									+								+																			

3.6. Matrix for providing program learning outcomes (PLO) with relevant required EP components

Program learning outcomes	RC 1	RC 2	RC 3	RC 4	RC 5	RC 6	RC 7	RC 8	RC 9	RC 10	RC 11	RC 12	RC 13	RC 14	RC 15	RC 16	RC 17	RC 17.1	RC 18	RC 18.1	RC 19	RC 20	RC 21	RC 22
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														+							+			+

13

3.7. Matrix for providing program learning outcomes (PLO) with relevant selective EP components

Components / Program learning outcomes	SC 1	SC 2	SC 3	SC 4	SC 5	SC 6	SC 7	SC 8	SC 9	SC 10	SC 11	SC 12	SC 13	SC 14	SC 15	SC 16	SC 17	SC 18	SC 19	SC 20	SC 21	SC 22	SC 23	SC 24	SC 25	SC 26	SC 27	SC 28	SC 29	SC 30	SC 31	SC 32	SC 33	SC 34	SC 35	SC 36
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								+									+																			

14