Name of the program	Data Science
Level	Second level (master's degree)
Description	Master's program in Data Science has been developed in accordance with the "Educational Program Development, Revision and Termination Procedures" of the National University of Georgia SEU. The program is designed in accordance with the modern challenges in the field and the requirements of the local labor market. The purpose is the development of teaching results of the second level of higher education, which aims to provide deep and systematic knowledge in the given field and student involvement in various subfields. More precisely, the program focuses on such sectoral competencies as knowledge of the basics of modern computer science and their practical application, which are so necessary for organizations to properly manage information. The content, scope and complexity of the Master's program in Data Science correspond to the second level of higher education. The content of the program takes into account the prerequisites for admission to the program and learning outcomes. The structure of the program is coherent and logical. The content and structure ensure that the learning outcomes of the program are achieved. The awarded qualification MSc in Data Science is consistent with the program content and learning outcomes. The language of instruction of the educational components provided by the program is Georgian. The main teaching materials are presented in Georgian, a number of additional materials are also provided in foreign language sources (in English). The Data Science Master's Program is built on the following principle: compulsory and optional courses. It is mandatory for the student to complete a master's thesis.
Number of credits	120 ECTS
Program Goals	• To introduce methods of processing and research of data arrays of different structure and type. • To develop skills of data acquisition, analysis and decision-making from all possible sources, including real-time information flows; • To deepen the competence of solving practical tasks in the direction of data science; • To develop the skills of finding logical connections in the information collected in the system and processing business decisions based on it

	• To acquire the ability to plan, create, develop and manage a project/task in an interdisciplinary environment, on the basis of the latest approaches in data science; • To develop research skills based on the latest methods.
Program learning Outcomes are the following	I. Describes the basic concepts, theories, methods, latest trends and technological solutions of computer and data science; II. Defines the methods and approaches of computer and data science research, data transformation and standardization, machine learning, big data storage and processing technologies; III. Regulates the processes of creation/implementation of products in the direction of computer and data science, their ethical and legal aspects; IV. Researches and develops new approaches in the field of data science, independently makes adequate and original decisions, plans and implements short-term and long-term tasks; V. Uses the latest technologies of computer and data science, elements of probability theory and mathematical statistics to create new or significantly improved products, services, processes, business models; VI. On the basis of on the latest research methods and technologies, creates and develops new products both in a sectoral and interdisciplinary context; VII. Presents the research results in a concise, comprehensive manner, taking into account the language norms and adhering to the principles of academic integrity and ethics. VIII. In compliance with the norms of professional ethics, coordinates the working group, determines his/her own and team members' concerns and works in a multidisciplinary environment; IX. Independently decides issues related to data collection, integration and processing and takes responsibility for these decisions; X. Contributes to the development of computer and data science through research and/or practical activities.

Program Structure

	Name of the study course	ECTS	Total hours	Prerequisite	Students' Workload						Credits Allocation Through The Semester			
					Lecture	Group,/Practical/ Laboratory Work	Midterm Exam	Final Exam	Total Contact Hours	Independent Hours	I	II	III	IV
Courses in the field of basic education														
N	**Mandatory Courses**	**96**	**The number of compulsory credits to be taken in the relevant semester**								**I**	**II**	**III**	**IV**
											30	**18**	**18**	**24**
1.	Advanced course in statistics	6	150	N/A	14	12	1	2	29	121	**6**			
2.	Information security	6	150	N/A	14	12	1	2	29	121	**6**			
3.	Modern database management systems (Sql, NoSql)	6	150	N/A	14	24	1	2	41	109	**6**			
4.	Research methods in information technologies	6	150	N/A	14	24	1	2	41	109	**6**			

5.	Data Science for Business	6	150	N/A	14	12	1	2	29	121	**6**			
6.	Artificial intelligence methods and algorithms	6	150	Data Science for Business	14	24	1	2	41	109		**6**		
7.	Big data systems	6	150	Modern database management systems (Sql, NoSql)	14	12	1	2	29	121		**6**		
8.	Analytical services in databases	6	150	Modern database management systems (Sql, NoSql)	14	12	1	2	29	121		**6**		
9.	Big data analytics	6	150	Big data systems	14	12	1	2	29	121			**6**	
10.	Scientific writing	6	150	N/A	13	24	2	3	42	108			**6**	
11.	Cybercrime	6	150	N/A	13	12	2	3	30	120			**6**	
12.	Practice	6	150	Modern database management systems (Sql, NoSql);									**6**	

				Data Science for Business Big data systems										
13.	Master thesis	24	600	All compulsory courses										**24**
N	**Elective Courses**	**24**	**The number of elective credits to be taken in the relevant semester**								**I**	**II**	**III**	**IV**
												12	**6**	**6**
1.	Modern network technologies	6	150	N/A	14	12	1	2	29	121				
2.	Machine Learning with Python	6	150	N/A	14	24	1	2	41	109				
3.	Creation and management of information systems (based on C#.NET)	6	150	Modern database management systems (Sql, NoSql)	13	12	1	2	28	122				
4.	ERP systems	6	150	N/A	13	12	1	2	28	122				
5.	Blockchain technologies	6	150	N/A	13	12	1	2	28	122				
6.	Strategic business communications	6	150	N/A	13	12	1	2	28	122				

7.	Computer vision	6	150	Advanced course in statistics	12	13	2	3	30	120				
8.	Digital transformation of business and e-commerce	6	150	N/A	13	12	1	2	28	122				
9.	Strategic management in the digital era	6	150	N/A	13	12	1	2	28	122				
10.	IT philosophy and human resource management	6	150	N/A	13	12	1	2	28	122				
	Total	**120**									**30**	**30**	**30**	**30**