საქართველოს ეროვნული უნივერსიტეტი სეუ
GEORGIAN NATIONAL UNIVERSITY SEU

Georgian National University SEU
Master's Educational Program

ARTIFICIAL INTELLIGENCE

2025

GENERAL INFORMATION

Program Name: Artificial Intelligence

Higher Education Cycle: Second Cycle (Master)

Qualification Level: Level 7

Awarded Qualification: Master of Computer Science

Field and Classification Code: 0613 Software and Applications Development and Analysis

Teaching Language: Georgian

Program Duration: 2 years, 4 semesters

Program Credit Capacity (ECTS): 120 credits /3000 astronomical hours/

Head of Program: Daviti Datuashvili, Associate Professor

Co-head of Program: Sandro Giunashvili, Assistant-Professor

Program Development Manager: Besiki Tabatadze, Professor

PROGRAM DESCRIPTION

The relevance of a Master's program in Artificial Intelligence is driven by several factors. One of the main factors is the global trend. Today, leading universities and technology companies around the world are actively investing in AI research and education.

The Master's program in Artificial Intelligence aims to equip students with in-depth knowledge of the theoretical foundations, methodologies, and modern technologies of artificial intelligence. The program covers key areas such as machine learning, deep learning, neural networks, intelligent systems, natural language processing, intelligent data analysis, and the ethical aspects of AI use.

Students will acquire skills in designing, building, evaluating, and adapting AI systems for various professional and research contexts. The curriculum combines theoretical training with practical work, project-based learning, and research activities. Graduates of the program will be able to overcome challenges in the field of artificial intelligence, promote technological innovation, and develop and apply AI systems in both industrial and academic environments while adhering to ethical standards.

As part of the program, students will study the theoretical foundations of artificial intelligence, the latest technological methods, and their practical applications. The content of the program is tailored to both scientific-research and industrial needs, ensuring high competitiveness of graduates in both local and international job markets. The learning process incorporates modern approaches and research experience, which fosters students' professional growth and the development of innovative skills.

PROGRAM GOALS

The goals of the Artificial Intelligence Program are for a student to:

I. The student will master the theoretical foundations and modern approaches of Artificial Intelligence, including machine learning, deep learning, neural networks, computational models, and intelligent data analysis;
II. The student will plan and implement research-based projects involving data acquisition, preprocessing, modeling, and analysis;
III. The student will be able to evaluate, optimize, and adapt AI systems in various contexts from technical, functional, and applied perspectives;
IV. The student will study in depth the ethical, legal, and social aspects of AI applications in order to develop responsible solutions for real-world practice;
V. The student will develop research, collaboration, and self-development skills within a professional framework.

PROGRAM LEARNING OUTCOMES

The learning outcomes of the Artificial Intelligence Master's Program:

I. Describes, explains, and analyzes the fundamental concepts, algorithms, and models of Artificial Intelligence;
II. Plans, develops, and evaluates AI systems using appropriate modern software platforms;
III. Identifies the basic principles of data analysis and applies them in the processes of data acquisition, processing, and interpretation;
IV. Applies modern research methods and conducts experiments while adhering to professional and academic ethical standards;
V. Evaluates the impact of AI technologies on individuals and society and makes ethically informed decisions in the development of AI systems;
VI. Presents research results in a structured and well-argued manner, both in written and oral form, to academic and professional audiences.

MAP OF COMPETENCES

THE COMPLIANCE OF THE PROGRAM GOALS WITH THE PROGRAM LEARNING OUTCOMES

program of learning results / program goals		According to the numbering of learning outcomes					
		I	II	III	IV	V	VI
I	The student will master the theoretical foundations and modern approaches of Artificial Intelligence, including machine learning, deep learning, neural networks, computational models, and intelligent data analysis;	X					
II	The student will plan and implement research-based projects involving data acquisition, preprocessing, modeling, and analysis;		X				
III	The student will be able to evaluate, optimize, and adapt AI systems in various contexts from technical, functional, and applied perspectives;		X	X			
IV	The student will study in depth the ethical, legal, and social aspects of AI applications in order to develop responsible solutions for real-world practice;					X	
V	The student will develop research, collaboration, and self-development skills within a professional framework.				X		X

The Compliance Of Study Courses With The Program Learning Outcomes

A map of the relevance of the curriculum to the learning outcomes of the program (1- Introduction, 2- Deepening the knowledge, 3 - Mastering)

Study Courses		Learning Outcomes					
		I	II	III	IV	V	VI
1.	Research Methods				2	2	2
2.	Mathematics for Machine Learning	2		2			
3.	Intense Course in Statistics	2		2			
4.	Artificial Intelligence Methods and Algorithms		2		2	2	
5.	Information Security and Ethics	2			2	2	
6.	Machine Learning Models		3	3	3		
7.	Big Data Systems	3	2	3			
8.	Deep Learning Algorithms	3	3			3	
9.	Software Engineering and Infrastructure			2			3
10.	Computer Vision		**3**	**3**	**3**		**3**
11.	Large Language Models (LLM)		**3**		**3**		
12.	Creating and Managing Global Innovation Startup			**2**		**2**	
13.	Master's Thesis	**3**	**3**	**3**	**3**	**3**	**3**

Assessment of Program Learning Outcomes and Target Benchmark

Learning Outcome	Course(s)	Assessment Tool	Semester	Evaluator	Student Count	Target Benchmark
Describes, explains, and analyzes the fundamental concepts, algorithms, and models of artificial intelligence.	Mathematics for Machine Learning	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 60% of students must score no less than 30 points
	Intense Course in Statistics	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 60% of students must score no less than 30 points
	Information Security and Ethics	Final Exam	II Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 30 points
	Big Data Systems	Midterm Exam	II Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 18 points
	Master's Thesis	Thesis Defense	IV Semester	Master's Thesis Defense Committee, Supervisor, and Reviewer	30	At least 70% of students must score no less than 51 points
Designs, develops, and evaluates AI systems using appropriate modern software platforms.	Artificial Intelligence Methods and Algorithms	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Mathematics for Machine Learning	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Big Data Systems	Midterm Exam	II Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 18 points

	Deep Learning Algorithms	Final Exam	II Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Computer Vision	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Large Language Models (LLM)	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Master's Thesis	Thesis Defense	IV Semester	Master's Thesis Defense Committee, Supervisor, and Reviewer	30	At least 70% of students must score no less than 51 points
Identifies the key principles of AI development and applies them in the processes of data acquisition, processing, and interpretation.	Mathematics for Machine Learning	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 60% of students must score no less than 30 points
	Intense Course in Statistics	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 60% of students must score no less than 30 points
	Mathematics for Machine Learning	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Big Data Systems	Midterm Exam	II Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 18 points
	Software Engineering and Infrastructure	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 30 points
	Creating and Managing Global Innovation Startup	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 30 points

	Computer Vision	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 60% of students must score no less than 30 points
	Master's Thesis	Thesis Defense	IV Semester	Master's Thesis Defense Committee, Supervisor, and Reviewer	30	At least 70% of students must score no less than 51 points
Applies modern research methods and conducts experiments in compliance with professional and academic ethical standards.	Research Methods	Presentation	I Semester	Course Lecturer (Professor)	30	At least 70% of students must score no less than 10 points
	Artificial Intelligence Methods and Algorithms	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Information Security and Ethics	Final Exam	II Semester	Course Lecturer (Professor)	30	At least 55% of students must score no less than 30 points
	Mathematics for Machine Learning	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Computer Vision	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Large Language Models (LLM)	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Master's Thesis	Thesis Defense	IV Semester	Master's Thesis Defense Committee, Supervisor, and Reviewer	30	At least 70% of students must score no less than 51 points
Assesses the impact of AI technologies on society and makes ethically informed decisions in the process of developing AI systems	Research Methods	Presentation	I Semester	Course Lecturer (Professor)	30	At least 70% of students must score no less than 10 points

	Artificial Intelligence Methods and Algorithms	Final Exam	I Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Information Security and Ethics	Final Exam	II Semester	Course Lecturer (Professor)	30	At least 55% of students must score no less than 30 points
	Deep Learning Algorithms	Final Exam	II Semester	Course Lecturer (Professor)	30	At least 65% of students must score no less than 30 points
	Creating and Managing Global Innovation Startup	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 30 points
	Master's Thesis	Thesis Defense	IV Semester	Master's Thesis Defense Committee, Supervisor, and Reviewer	30	At least 70% of students must score no less than 51 points
Presents the results of research and technical work in a well-argued manner to academic and professional audiences.	Research Methods	Presentation	I Semester	Course Lecturer (Professor)	30	At least 70% of students must score no less than 10 points
	Software Engineering and Infrastructure	Final Exam	III Semester	Course Lecturer (Professor)	30	At least 50% of students must score no less than 30 points
	Master's Thesis	Thesis Defense	IV Semester	Master's Thesis Defense Committee,	30	At least 70% of students must score no less than 51 points

Program Admission Requirements

Enrollment Conditions

A person with a bachelor's degree or an equivalent academic degree is eligible to study for a master's degree program, who will be enrolled in the Unified Master's Examination and the Georgian National University (SEU) as a result of passing a specialty and passing an entrance exam in a foreign language (English). A candidate who presents a certificate of foreign language proficiency at B2 level is exempted from foreign language testing, as well as a candidate who has completed a bachelor's or master's degree in the relevant language.

Enrollment Without Passing the Unified Master's Examination

A) For master's degree candidates who have received a document certifying the academic degree of higher education in a foreign country;
B) For foreign citizens (except for students participating in a joint higher education program) who are studying / have studied and received credit /qualifications in a master's degree at a higher education institution recognized in a foreign country in accordance with the legislation of that country;

B[1]) For Georgian citizens (except for students participating in the joint higher education program and students participating in the exchange education program) who live / have lived, studied / studied and received credits / qualifications recognized abroad in accordance with the legislation of this country for a period determined by the Ministry of Education and Science In a master's degree at an educational institution;

C) For Master's degree candidates who have been admitted to a higher education institution without the Unified National Examinations;

D) For foreign citizens who have obtained the right to continue their education in a higher education institution of Georgia before the enactment of the Law of Georgia on Higher Education and have a document certifying higher education recognized by the state in Georgia.

E) The Higher Educational Institution is obliged to confirm that the persons, wishing to obtain the right to study, possess the language of instruction of the chosen educational program at least B2 level.

Enrollment by Mobility

Admission of students from other higher education institutions / programs to the master's program through mobility is carried out in accordance with the rules established by the order N 10 / N of the Minister of Education and Science of February 4, 2010.

A person whose enrollment in a higher education institution has been carried out in accordance with the rules established by law and is a student of the institution wishing to register for mobility on the electronic portal of the Education Management Information System has the right to mobility.

The right to mobility is also granted to a person whose student status has been suspended at the time of registration on the electronic portal or to a person whose status has been terminated within 12 months of the termination of the status.

Enrollment in the master's educational program or enrollment by transfer from a recognized higher education institution abroad is carried out on the basis of the order of the Minister of Education and Science of Georgia. Based on the decision / consent of the Ministry of Education and Science of Georgia.

ORGANIZING TEACHING

The duration of the Master's Program in Artificial Intelligence 2 academic years (4 semesters) and implies the accumulation of 120 ECTS, which equals to 3000 hours. Each credit (ECTS) equals to the learning activity of a student (student workload) of 25 hours and includes both – contact and independent hours.

The distribution of credits among the different study components should be based on a realistic assessment of the study load of a student with average academic achievements that are required to achieve the learning outcomes and goals set for each component.

When calculating the credit, the time determined for the additional exam (preparation, passing, evaluation) as well as the consultation time with the person implementing the component of the educational programme should not be taken into account.

The full workload of an academic year includes 60 (ECTS). During the academic (spring and autumn) semester the student must cover on average 30 credits.

Taking into account the features of the higher education programme and/or the student's individual curriculum, it is allowed for the student's study load to exceed 60 credits or be less than 60 credits during one academic year. It is not allowed for a student's study load to exceed 75 (ECTS) credits in one academic year.

An academic week is a period of time over which the study load of a student with average academic achievement is distributed and includes a combination of activities to be performed during both contact and independent hours.

A semester is a period of time that includes a combination of academic weeks, a period of conducting an exam/additional exam and evaluation of student's learning outcomes.

The program is regarded as completed, when the student accumulates at least 120 ECTS, which implies the fulfilment of the basic, elective and free components of the field determined under the program.

TEACHING-LEARNING METHODS

Lecture - is a creative process where a lecturer and a student take part simultaneously. The main aim of the lecture is to understand the idea of the subject regulations to be learnt, which means a creative and active perception of presented material. In addition, an attention should be paid to the main provisions of transferable material, definitions, indications, assumptions. Critical analysis of the main issues, facts and ideas are necessary. A lecture should provide a scientific and logically consistent knowledge of main subject regulations to be learnt without excessive details overloading. Therefore, it must be logically completed. In addition, facts, examples, charts, drawings, tests and other visual aspects should be aimed at the explanation of the lecture's idea. The lecture should provide an accurate analysis of science dialectical process and should be based on free-thinking ability of students in particular environment, understanding of the basic scientific problems and the orientation of understanding. Lecture uses rbal or oral method and involves the communication of the lecture material to students verbally, method used during this process include: questions and answers, interactive work, the theoretical explanations of the provisions based on practical situations.

Collaborative - teaching method involves dividing students into groups and giving them learning assignments. The members of the group work on the issue individually and at the same time share it with the other members of the group. Due to the set task, it is possible to redistribute functions among the members during the group work process. This strategy ensures maximum involvement of all students in the learning process.

Independent work- material heard in the lecture is formed as a whole system of knowledge by the independent work of the student. The student should be interested in the book and other sources of information and want to study the issues independently, which is a way to stimulate independent thinking, analysis and drawing conclusions.

Verbal, or oral, method includes lecture, narration, conversation, and etc. In this process, the lecturer conveys the teaching material through words, while the students actively perceive and master it by listening, remembering and understanding.

Method of working on the book involves introduction, processing and analysis of independently given reading material.

The method of written work- involves the following types of activities: making records, compiling material, composing thesis, performing an abstract, or essay, etc.

Practical methods combine all the forms of teaching that develop the student's practical skills, here the student independently performs this or that activity on the basis of acquired knowledge.

Discussion / debate is one of the most common methods of interactive teaching. The discussion process drastically increases the quality and activity of student engagement. The discussion can turn into an argument. This process is not limited to questions asked by the lecturer. This method develops the student's ability to argue and justify his or her own opinion.

Problem-Based Learning (PBL) - a learning method that uses the problem in the early stages of the process of acquiring and integrating new knowledge.

Cooperative learning - is a teaching strategy in which each member of the group is required not only to study but also to help his or her teammate learn the course better. Each group member works on the problem until all of them have mastered the issue.

Case study -an active problem-situation analysis method, based on teaching by solving specific tasks - situations (so-called case solving). This method of teaching is based on the discussion of specific practical examples (cases). The case is a kind of tool that allows the application of the acquired theoretical knowledge to solve practical tasks. By combining theory and practice, the method effectively develops the ability to make reasoned decisions in a limited amount of time. Students develop analytical thinking, teamwork, listening and understanding alternative thinking, the ability to make generalized decisions based on alternatives, plan actions, and predict their outcomes.

Brain storming- is a method student can use to generate ideas for solving the problem. In the process of brainstorming students must suspend any concerns about staying organized. The goal is to pour their thoughts without worrying about whether they make sense or how they fit together. It is effective method within the group and contains following stages:

- Creative definition of problem
- Taking notes of ideas without criticism
- Definition of estimation criterion
- Evaluation of ideas by preliminarily defined criterion
- Selection of best matching ideas by exclusion
- Manifestation of idea with the highest estimation for solving the problem

Demonstration method- involves visual representation of information. It is quite effective in terms of achieving results. In many cases, it is best to provide the material to students in both audio and visual form. Demonstration of the study material can be done by both the teacher and the student. This method helps us to visualize the different levels of perception of the learning material, to specify what students will have to do independently; At the same time, this strategy visually illustrates the essence of the issue / problem. Demonstrations may look simply, such as solving a mathematical problem, visualizing a step on its board, or taking on a complex look, such as conducting a multi-level science experiment.

Inductive Method- defines a form of transferring knowledge, when the course of thought in the process of learning is directed from facts to generalization, that is, when conveying material, the process proceeds from specific to general.

Deductive Method- the process of reasoning from one or more statements (premises) to reach a logically certain conclusion. It works from the more general to the more specific.

Analysis- through this method, lecturers and students discuss specific cases together. Students thoroughly learn the previously unknown sides of the issue. The method of analysis enables us to break up the whole part of the study the material into constituent parts, which simplifies the understanding of the specific issues of the problem.

The synthesis method -involves composing one whole by grouping individual issues. This method helps to develop the problem as the ability to see the whole.

The explanatory method is based on reasoning around a given issue. In presenting the material, the lecturer gives a specific example, which is discussed in detail in the given topic.

Action-oriented teaching - requires the active involvement of the lecturer and the student in the teaching process, where the practical interpretation of the theoretical material becomes particularly important.

Role-playing and situational games Scenario-based role-playing games which allow students to look at the issue from different positions and help them form an alternative point of view. Like the discussion, role-playing games develop the student's ability to express and defend his or her position independently.

Laboratory learning- is more visible method and allows you to perceive an event or process. In the lab, the student learns to conduct an experiment. During the laboratory study, the student should be able to control the devices, adjust them and determine the mode of operation. Habits developed in learning laboratories provide an understanding of the theoretical material heard in lectures.

The development and presentation of the project -is a combination of educational and cognitive tools, which allows to solve the problem in the conditions of the necessary presentation of the student's independent actions and the obtained results. Teaching in this way raises students' motivation and responsibility. Work on the project includes stages of planning, research, practical activity and presentation of results according to the chosen issue. The project will be considered feasible if its results are visible, convincing and concrete. It can be performed individually, in pairs or in groups; Also, within one subject or several subjects (integration of subjects). Upon completion, the project will be presented to a wide audience.

Master's thesis is the final phase of the Master's level and it aims at the systematization of the gained theoretical and practical knowledge and the reasoned solution of certain scientific, technical, economic and professional objectives. The thesis must reveal the level of knowledge of the research methods and experiments related to the given issue and the readiness of the student to work independently in the conditions of the future professional activities. Consultation – the contact time used by the student with the supervisor of the Master's thesis, when the student obtains information regarding the issues of drafting the plan, searching for empirical materials, their preparation, making conclusions in terms of the contents of the thesis, technical design of the thesis, its preparation for presentation.

E-learning - This method includes three types of teaching:

- Attendance when the teaching process takes place within the contact hours of the lecturer and the students, and the teaching material is delivered through an electronic course.
- Hybrid (attendance / distance), the main part of the learning course is done remotely, and a small part is done within the contact hours.
- Completely distance learning involves conducting the learning process without the physical presence of the lecturer. The learning course is held electronically from beginning to end.

EVALUATION SYSTEM

The system of evaluation of learning outcomes and competencies is based on the system recognized by the legislation and corresponds to the evaluation and credit granting standards approved by the OrderN3 of the Minister of Education and Science of Georgia dated January 5, 2007.

Student assessment system includes:

a) Five types of positive evaluation:

a.a) (A) Excellent – 91-100 points;
a.b) (B) Very good – 81-90 points;
a.c) (C) Good – 71-80 points;
a.d) (D) Satisfactory – 61-70 points
a.e) (E) Sufficient – 51-60 points;

b) Two types of negative evaluation:

b.a) (FX) did not pass - 41-50 points of maximum evaluation, which means that the student needs more work to pass the examination and is given the right to retake (one time) an exam via independent work;
b.b) (F) Failed – 40 points or less, which means that the work done by the student is not sufficient and he/she has to retake the course.

In case student gets FX, he/she can take the additional exam in the same semester at least 5 days after the announcement of the final exam results.

The number of points obtained in the final assessment is not added to the grade received by the student at the additional exam. The grade obtained at the additional exam is the final grade and is reflected in the final grade of the study component of the educational program.

Considering the additional exam evaluation if the points accumulated by student in the educational program component is 0-50 points, student is evaluated with F-0.

A prerequisite for a student's admission to the final exam is to overcome the competence threshold of the Midterm Evaluation (No less than 11 points within Midterm Evaluation).

Competency threshold for the Final Exam is 30%, no less than 12 points.

Prerequisite for granting the credit is accumulating no less than 51 from 100 points and to overcome the minimum competency threshold of Midterm Evaluation and Final Exam.

EVALUATION COMPONENTS

Student assessment in each learning component of the program includes two forms of assessment - midterm assessment and final assessment.

Each form of evaluation includes an evaluation component/components, which includes the evaluation method/methods, and the evaluation method/methods are measured by the evaluation criteria, which are spelled out in the syllabi of the respective program and are available to all students at the beginning of the semester in the electronic system of the educational process - emis.seu.edu.ge.

In each study component of the educational program, for the determination of the student's final assessment, the breakdown of the midterm and final assessment points from the total assessment score (100 points) is given in the study course syllabi. The intermediate and final assessment has a minimum level of competence, which is determined by the syllabus of the relevant component. The exception is established taking into account the peculiarities of a specific program/educational component, in accordance with the requirements established by the current legislation of Georgia.

PROGRAM INTERNATIONALIZATION

1. Constructor University
2. The University of Europe for Applied Sciences
3. Rome Business School
4. Transport and Telecommunication Institute
5. UCSI University
6. University of Economics and Human Sciences in Warsaw
7. University of Medicine, Pharmacy, Science, and Technology of Târgu Mureş
8. Bucharest University of Economic Studies
9. Titu Maiorescu University
10. Eastern Switzerland University of St Gallen
11. EU Business School

PARTNER ORGANIZATIONS

1. Georgian National University SEU LLC (Information Technology Department)
2. IT Academy STEP LLC
3. INI.GE LLC
4. Hosti.ge LLC
5. Global IT LLC
6. Avia Network LLC
7. Microfinance Organization LendUp LLC
8. allmarket.ge LLC
9. Easy Credit LLC
10. JSC Wissol Petroleum Georgia
11. JSC Bank of Georgia
12. JSC TBC Bank
13. JSC FINCA Bank Georgia
14. IT Synergy LLC
15. ITCraft LLC
16. Provider LLC
17. Tech Engineering Group LLC
18. Non-entrepreneurial (non-commercial) Legal Entity – Georgian Artificial Intelligence Association
19. Discover Georgia LLC
20. Solvity LLC
21. Softegen LLC
22. LiveSupport LLC
23. Explorium LLC
24. ITechnics LLC
25. CityPay LLC
26. Orient Logic LLC
27. Liberty Bank
28. Terabank

PROGRAM EMPLOYMENT FIELD

A graduate of the Master's program in Artificial Intelligence possesses both theoretical and practical knowledge of modern AI algorithms and systems, and is prepared to work in various positions across both the public and private sectors. The graduate is capable of working as a data analyst, AI or machine learning engineer, data scientist, R&D specialist, software architect, or researcher. Their expertise includes the application of areas such as predictive modeling, computer vision, natural language processing, and more.

OPPORTUNITIES TO CONTINUE STUDYING

A graduate of the Master's program in Artificial Intelligence is can continue studies at the third level of higher education (Doctorate), in Georgia or abroad, in accordance with the rules established by the law, by complying with the prerequisites for admission to the Doctoral educational program.

FUNDING OF THE PROGRAM

Financial support for the master's program in Artificial Intelligence is provided through the program budget. Money allocated from the budget is allocated for the constant updating of the material and technical base and literature provided for by the program, the organization of scientific conferences, the cost of salaries of academic/invited employees, as well as the publication and printing of their works. The budget also provides for expenses for scientific trips of scientific and administrative personnel, funding for students on exchange programs, international internships and conferences.

MONITORING OF THE PROGRAM QUALITY

The monitoring and the periodical assessment of the Master’s Program in Artificial Intelligence shall be performed with the participation of academic/invited, administrative/assistant personnel, students, alumni, employers and other interested persons, through systematic collection, processing and analysis of information. Based on the assessment outcomes, when necessary, the program will be modified/developed.

The Quality Enhancement Department performs regular analysis and other activities intended for the quality enhancement, which consist of the following surveys:

- Lecturer and Study Course Evaluation by students (once per semester);
- Educational Program Evaluation by students (have they achieved the learning outcomes determined by the program) (in the last year of the study);
- University's Institutional Evaluation by students (once a year);
- Evaluation of the Master's Thesis Supervisor by students (upon the completion of the master's thesis);
- Alumni Research (six months after the end of the program);
- Employers' Survey (once a year);
- Self-evaluation of the study course (by the lecturer, once a semester);
- Self-evaluation of the program (by the head/co-head of the program, once a year);
- Analysis of academic performance.

Each survey is analyzed and the tendencies are determined across the University. Also, at the level of structural units, faculties and educational programs. The surveys and studies enable the conducting of the comparative analysis between the faculties and the educational programs. The comparative analysis is performed by the Quality Enhancement Department and the results are provided to all interested persons. The Quality Enhancement Department plans the organization of trainings with the personnel and students involved in the quality assurance processes in order to further reinforce the processes for their active participation in these processes.

Survey results are visualized using the automated system Microsoft Power BI. It is a business analytics and data visualization tool that, by connecting to databases, allows for the transformation of raw data, data modeling, and visually interactive analysis of survey results. Power BI supports Excel, SQL databases, and various cloud services. Currently, the university is analyzing student academic performance, student internship satisfaction survey, freshman survey, and educational program learning outcome evaluation report in a fully automated mode.

PROGRAM RESOURCES

MATERIAL RESOURCES

Master's Program in Artificial Intelligence is implemented in the campus equipped with modern infrastructure, it is provided with library, material and technical resources, which ensure the achievement of the program goals and learning outcomes in material and quality terms. All rooms are equipped with the devices necessary for the implementation of learning process. Students are informed about the opportunity to use existing resources and about the rules of use.

Computer classes are available at the University for practical and laboratory works with relevant equipment. The computer capabilities and their number totally make it possible to implement the program perfectly in terms of software and hardware.

All necessary literature and other materials (including those existing on the electronic carriers) determined by the course syllabuses of the program are available in the library, which ensures the achievement of the learning outcomes of the educational program.

The University has executed an agreement with the NNLE Georgian Library Association on the service of international electronic library bases. The most recent scientific periodicals, international electronic library bases are available for students, that enables the, to familiarize themselves with the most recent scientific data of the respective field in order to achieve the learning outcomes of the program.

At the university, computer labs equipped with the necessary hardware are designated for practical and laboratory work. The specifications and quantity of computers fully support the effective implementation of the program, both in terms of software and hardware resources.

Information Technology Laboratory (IT Lab) – A specialized educational lab designed for hands-on learning in computer architecture, networking, and system administration. The lab is equipped with computer hardware components, including processors, motherboards, RAM, hard drives, and network devices (routers, switches), along with other technical elements. In this lab, students acquire practical skills in assembling computers, installing operating systems, configuring network infrastructure, and implementing security mechanisms.

Artificial Intelligence Laboratory (AI Lab) – A modern and innovative educational-research lab equipped with next-generation computers. The lab serves both educational/practical and research purposes. It is designed to foster the development of artificial intelligence technologies, including machine learning, natural language processing, robotics, and more. It also facilitates the implementation of various applied projects, such as developing practical applications for industries like healthcare, business analytics, finance, commerce, education, and so on.

Blockchain Laboratory – Equipped with state-of-the-art computers, this lab offers practical courses aimed at supporting technological advancement and enabling students to explore and implement modern blockchain solutions.

Tech and Entrepreneurship Laboratory – To foster the development of practical skills, the university also hosts a Tech and Entrepreneurship Lab. This lab provides students with the opportunity to engage in real business projects and acquire specific skills needed for various projects through individual mentorship. Within the context of elective courses, the lab connects students with shared ideas and gives them the chance to turn their business concepts into reality. Additionally, workshops and activities are organized by industry specialists to develop specific skillsets. The lab is actively involved in integrating practical elements into specific courses and coordinates the participation of practitioners and companies in the educational process.

Master's Program of Artificial Intelligence Curriculum

	Study Course	ECTS	Total Hours	Prerequisite	Students' Workload						Credits Allocation Through Semester			
					Lecture	Working in Group, Practical or Laboratory Work	Midterm Exam	Final Exam	Total Contact Hours	Independent Work	I	II	III	IV
Study Courses for Main Field														
N	**Mandatory Study Courses**		**Number of Mandatory Credits to be Earned in the Relevant Semester**								**I**	**II**	**III**	**IV**
1.	Research Methods	6	150	N/A	13	24	1	2	40	110	**6**			
2.	Mathematics for Machine Learning	9	225	N/A	13	24	2	2	41	184	**9**			
3.	Intense Course in Statistics	6	150	N/A	13	24	1	2	40	110	**6**			
4.	Artificial Intelligence Methods and Algorithms	9	225	N/A	13	24	1	2	40	185	**9**			
5.	Information Security and Ethics	6	150	N/A	13	12	1	2	28	122		**6**		
6.	Machine Learning Models	9	225	Mathematics for Machine Learning	13	24	2	2	41	184		**9**		
7.	Big Data Systems	6	150	N/A	13	24	1	2	40	110		**6**		

8.	Deep Learning Algorithms	9	225	Machine Learning Models	13	24	2	2	41	184		**9**		
9.	Software Engineering and Infrastructure	6	150	N/A	13	12	2	2	29	121			**6**	
10.	Computer Vision	6	150	Deep Learning Algorithms	13	12	2	3	30	120			**6**	
11.	Large Language Models (LLM)	6	150	Deep Learning Algorithms	13	12	2	2	29	121			**6**	
12.	Creating and Managing Global Innovation Startup	6	150	N/A	11	14	2	3	30	120			**6**	
13.	Master's Thesis	24		Research Methods; Large Language Models (LLM); Big Data Systems; Computer Vision Software Engineering and Infrastructure.										**24**
N	**Elective Study Courses**	**12**	**Number of Elective Credits to be Earned in the Relevant Semester**								**I**	**II**	**III**	**IV**
													6	**6**
1.	Digital Signal Processing	6	150	Machine Learning Models	13	12	2	2	29	121				
2.	Blockchain Technologies	6	150	N/A	13	12	1	3	29	121				
3.	Cloud Technologies	6	150	N/A	13	12	2	2	29	121				
4.	Scientific Computing	6	150	N/A	13	12	2	2	29	121				
5.	Principles of Interaction Design	6	150	N/A	13	12	2	2	29	121				
6.	Scientific Writing	6	150	N/A	13	24	2	3	42	108				
	Total	**120**									**30**	**30**	**30**	**30**

Human Resources

N	Study Course	Lecturer Name - Surname
1.	Research Methods	Mzia kiknadze Besiki Tabatadze
2.	Mathematics for Machine Learning	Besiki Tabatadze Vera Jeladze
3.	Intense Course in Statistics	Otar Abesadze Temur Chilachava
4.	Artificial Intelligence Methods and Algorithms	Levan cholikidze Daviti Datuashvili
5.	Information Security and Ethics	Levani Julakidze Giorgi Pirveli
6.	Machine Learning Models	Tornike Skhirtladze Besiki Tabatadze
7.	Big Data Systems	Avtandil Bichnigauri Gulnara Janelidze
8.	Deep Learning Algorithms	Besiki Tabatadze Daviti Datuashvili
9.	Software Engineering and Infrastructure	Khatuna Elbakidze Sandro Giunashvili
10.	Computer Vision	Daviti Datuashvili Tea Todua

11.	Large Language Models (LLM)	Besiki Tabatadze Daviti Datuashvili
12.	Creating and Managing Global Innovation Startup	Maria Kldiashvili Zurab Pertaia
13.	Master's Thesis	Besiki Tabatadze Mzia kiknadze Daviti Datuashvili Lia Kurtanidze Gulnara Janelidze Levan cholikidze Davit Gulua
14.	Digital Signal Processing	Daviti Datuashvili
15.	Blockchain Technologies	Davit Khipshidze Erekle Zarandia
16.	Cloud Technologies	Davit Gulua
17.	Scientific Computing	Besiki Tabatadze Lia Kurtanidze
18.	Principles of Interaction Design	Lia Kurtanidze Tea Todua
19.	Scientific Writing	Ina shanava

Academic/Invited Staff

N	Name and Surname	Status	Affiliation
1.	Mzia kiknadze	Associate Professor	
2.	Besiki Tabatadze	Professor	
3.	Vera Jeladze	Professor	Affliate
4.	Otar Abesadze	Associate Professor	
5.	Temur Chilachava	Professor	
6.	Levan cholikidze	Associate Professor	
7.	Daviti Datuashvili	Associate Professor	
8.	Levani Julakidze	Associate Professor	
9.	Giorgi Pirveli	Assistant-Professor	
10.	Tornike Skhirtladze	Associate Professor	
11.	Avtandil Bichnigauri	Associate Professor	
12.	Gulnara Janelidze	Professor	
13.	Khatuna Elbakidze	Associate Professor	
14.	Sandro Giunashvili	Assistant-Professor	Affliate
15.	Davit Khipshidze	Assistant-Professor	
16.	Erekle Zarandia	Associate Professor	Affliate
17.	Tea Todua	Professor	
18.	Maria Kldiashvili	Associate Professor	Affliate
19.	Zurab Pertaia	Associate Professor	Affliate
20.	Lia Kurtanidze	Associate Professor	Affliate

21.	Davit Gulua	Professor	
22.	Ina shanava	Associate Professor	