

Caucasus University



კავკასიის ტექნოლოგიების სკოლა
CAUCASUS SCHOOL OF TECHNOLOGY

Bachelor's Degree Program in
Cyber Security
(Delivered in English)



Caucasus University
Caucasus School of Technology



Program Name	Cybersecurity		
Program Name In Georgian	კიბერუსაფრთხოება		
Degree level	Bachelor's Degree		
Type of the educational program	Academic		
Instruction Language	English		
Expected Qualification			
In English	Bachelor of Cybersecurity	0613	
In Georgian	კიბერუსაფრთხოების ბაკალავრი	0613	
Date of Program Approval & Update			
	27.11.2024 (Order N01/01-69)		
	29.04.2026 (Order N01/01-33)		
Academic head of the Program	Maksim Iavich, PhD., Affiliated Porfessor at Caucasus University		
Program Volume in Credit Hours			
The Bachelor's Degree Program comprises 180 credits. 1 ECTS equals 25 hours, which includes class hours and time spent on independent work (midterm and final examinations, as well as homework assignments). Consequently, the standard official duration of the Bachelor's Degree Program is three years, but a maximum of five years. After the expiration of the standard duration of the Bachelor's Degree Academic Program, the students having academic debts, with the view of completing the program, are allowed to continue their education through additional semesters by retaining the student's status. The program envisages learning courses of a narrow sphere and of free components: <u>Learning courses of a narrow sphere (154 ECTS):</u> – Mandatory learning courses -148 ECTS – Optional learning courses - 6 ECTS <u>Learning courses of free component (26 ECTS):</u> – University Mandatory learning courses - 15 ECTS – University Optional learning courses - 5 ECTS – Free Credits - 6 ECTS			

Program Description

Admission Requirements

- Any person with secondary education is entitled to enroll in the Undergraduate Program. The precondition for admission to the program is to pass the Unified National Examination. Any exceptions to the Law on Enrolment at Higher Education Institutions are allowed only in the cases prescribed by Law.
- Passing the English Language as a foreign language in the Unified National Examinations is a mandatory requirement for program enrollment.
- Prospective students eligible for the program without having passed the Unified National Examinations must:
 - Confirm English language B2 level proficiency (IELTS-6.0; TOEFL-78; or other relevant international certificate confirming B2 level proficiency) or he/she has to pass an English language B2 level exam administered by the Caucasus University;
 - Pass an exam in Mathematics administered by the Caucasus University.
- Mobility to the program is allowed following the procedures set by the relevant law

Program Objectives

The objectives of the Program in Cybersecurity are to:

- Provide the student with an in-depth knowledge of the theoretical aspects of higher education disciplines, which prepares the person for further study at the Master's degree program or work with a qualification.
- Provide students with the necessary knowledge, skills, and professional training to pursue careers in the rapidly growing field of Cybersecurity.
- Prepare high-level, competitive specialists with the broad theoretical knowledge and practice-oriented, transferable skills necessary for professional development in modern ICT field with the focus on security.
- To satisfy the demand of Cybersecurity workforce in the government and private industry.

Learning Outcomes

Upon completion of the Bachelor's degree program in Cybersecurity, the graduate will acquire the following competencies:

1. Describes security design principles and identifies the security mechanisms to implement desired security principles.
2. Identifies the main issues in the fundamental knowledge areas of ICTs.
3. Reviews algorithms related to the implementation and deployment of ICT tasks/projects and matches them with appropriate software tools.
4. During the process of developing/evolving/implementing various ICT tasks/projects, identifies and connects client and user interests in the direction of cybersecurity.
5. Evaluates the architecture of a typical, complex system and identifies potential risks, vulnerabilities, and points at which specific security technologies/ methods should be employed.
6. Identifies which cryptographic protocols, tools and techniques are appropriate for a given situation.
7. Identifies malicious activities and attacks in the system and recommends appropriate response capabilities.
8. Executes incident response activities and helps to solve cyber-crime investigations.
9. In accordance with cybersecurity disciplines context, participates in developing computer technology-based solutions, implementing and evaluating assigned tasks according to given ICT requirements, and carries out effective communication.
10. During professional activities, makes reasoned decisions based on ethical principles.
11. Performs team member and/or leader duties in the ICT field.
12. Determines individual learning needs and plans personal development both in professional and ICT application fields.

Building a Career

Program graduates will be qualified to pursue diverse career paths as cybersecurity analysts, security systems administrators, network security specialists, ethical hackers, and information security consultants. They will be equipped to perform crucial roles in protecting digital infrastructures, implementing security protocols, conducting vulnerability assessments, managing security risks, and responding to cyber incidents. Graduates can find employment opportunities across various sectors including technology companies, financial institutions, government agencies, telecommunications firms, healthcare organizations, educational institutions, and cybersecurity consulting companies, where they will contribute to maintaining robust digital security systems and protecting against evolving cyber threats.

Study Continuation Opportunities

The program graduates can continue their studies at any of Master's Degree programs in Georgia or abroad, in accordance with the regulation required by the law.

Program Curriculum

Course				Year						ECTS
				I	II		III			
Nº	Code	Prerequisite	Name	Semester						
				I	II	III	IV	V	VI	
Required Specialization Courses										
Mandatory learning courses – 148 ECTS										
1.	CSC 1144.32		Fundamentals of Computer Science I	x						5
2.	MATH 0003.32		Calculus I	x						5
3.	DM 1144.32		Discrete Mathematics	x						5
4.	CARC 1144.32		Computer Architecture	x						5
5.	CSC 1244.32	CSC 1144.32	Fundamentals of Computer Science II		x					5
6.	MATH 0004.32	MATH 0003.32	Calculus II		x					5
7.	PYTH 1244.32	CSC 1141.32	Python Programming I		x					5
8.	IDB 1244.32		Introduction to Database Systems		x					5
9.	OSSC 1244.32	CARC 1144.32	Operating Systems & Computer Security		x					5
10.	PYTH 2144.32	PYTH 1244.32	Python Programming II			x				5
11.	PRP 2144.32	CSC 1244.32	Programming Paradigms			x				5
12.	PST 2144.32	MATH 0003.32	Probability & Statistics			x				5
13.	ENCS 2144.32		Ethics in National Cyber Security			x				5
14.	ALGO 2144.32	CSC 1244.32	Algorithms & Data Structures			x				5
15.	SCMP 2244.32	MATH 0004.32	Scientific Computing				x			5
16.	OOP 2244.32	CSC 1244.32	Object Oriented Programming				x			5
17.	NWSC 2244.32		Computer Networks & Security				x			5
18.	ETHK 2244.32	OSSC 1244.32	Ethical hacking I				x			5
19.	CMP 2244.32	CSC 1244.32	Compilers				x			5
20.	AI 2244.32	ALGO 2144.32	Artificial Intelligence				x			5
21.	CRPT 3144.32	SCMP 2244.32	Cryptography					x		6
22.	SSEC 3144.32	CSC 1244.32	Software Security					x		6
23.	SE 3144.32	CSC 1244.32	Software Engineering I					x		6
24.	CSRM 3144.32		Cyber security Risk Management					x		6
25.	HFI 3244.32	OSSC 1244.32	Hacking and Forensic Investigation						x	6
26.	CSEM 3244.32		Cyber security & Event Management						x	6
27.	IDP 3244.32	OSSC 1244.32	Intrusion Detection & Prevention						x	6
28.	BPR 3244.32		Bachelor’s Thesis						x	6
Optional learning courses - 6 ECTS										
29.	WEB 3144.32	CSC 1144.32	Web Technologies I					x		6
30.	INTG 3144.32		Intro to Intelligence					x		6
31.	PYTH 3144.32	PYTH 2144.32	Python Programming III					x		6
32.	DBA 3144.32	IDB 1244.32	Database Administration					x		6
33.	NET 3144.32	CSC 1244.32	.NET Technologies I					x		6
34.	JAVA 3144.32	CSC 1244.32	Java Programming I					x		6
35.	ETHK 3144.32	ETHK 2244.32	Ethical hacking II					x		6
36.	STMA 3144.32	OSSC 1244.32	System Administration I					x		6
37.	ITPM 3144.32		IT Project Management					x		6

Course				Year						ECTS
				I		II		III		
№	Code	Prerequisite	Name	Semester						
				I	II	III	IV	V	VI	
38.	EIT 3144.32		Ethics in Information Technologies					x		6
39.	WEB 3244.32	WEB 3144.32	Web Technologies II						x	6
40.	NET 3244.32	NET 3144.32	.NET Technologies II						x	6
41.	JAVA 3244.32	JAVA 3144.32	Java Programming II						x	6
42.	SE 3244.32	SE 3144.32	Software Engineering II						x	6
43.	STMA 3244.32	OSSC 1244.32	System Administration II						x	6
44.	ML 3244.32	PST 2144.32	Machine Learning						x	6
45.	DSY 3244.32	ALGO 2144.32	Distributed Systems						x	6
46.	PAR 3244.32	PYTH 1244.32	Principles of Parallel Programming						x	6
Learning courses of free component										
University Mandatory learning courses - 15 ECTS										
47.	ACWR 0007E		Academic Writing	x						5
48.	ENGL 0009E		General English C1.0	x						5
49.	ENGL 0010E	ENGL 0009E	General English C1		x					5
University Optional learning courses – 5 ECTS										
50.	ENGF 0001.32		General English Language Skills B2.0+ ¹	x						5
51.	ENGF 0002.32	ENGF 0001.32	General English Language Skills B2+		x					5
52.	GEO 0001.32		Georgian Language A1 ²			x				5
53.	GEO 0002.32	GEO 0001.32	Georgian Language A2				x			5
54.	HIST 0001.32		Introduction to World History & Civilization			x				5
55.	POLS 0002.32		Political Science			x				5
56.	HIST 0003.32		History of Georgia			x				5
57.	SOCI 0004.32		Sociology			x				5
58.	PHIL 0005.32		Philosophy			x				5
59.	PSYC 0006.32		Psychology			x				5
60.	ENTP 0009.32		Entrepreneurship			x				5
Free Credits - 6 ECTS										
61.			Free Credits ³						x	
ECTS Credits Per Year				60		60		60		
Courses Per Year				12		12		10		

¹ General English Language B2 Level is offered for those students who have English language competency lower, than the Level C1

² In case a foreign student attests the level of general English language proficiency defined by the program, he / she will be exempted from passing English language courses and will study the courses in Georgian language within these credits, but if a student also is fluent in Georgian, he / she is entitled to study courses from the program's electives or free courses

³ Student can take courses in terms of “Free Course” from other Bachelor's degree programs and/or from the Elective Courses within this program