



The University Of Georgia

Program name:	Blockchain - Distributed Information Systems (Eng)
Study Level:	Graduate
Program leader:	Alex Sudadze Vakhtangi Chkhenkeli
Study language:	English
Qualification:	Master of Information Systems
Program capacity:	120
Program permission:	Admission to the second cycle of academic higher education (Master's programs) is carried out cumulatively based on the following: • Based on the Unified Master's Examinations or in accordance with the Order of the Minister of Education and Science of Georgia No. 224/N (December 29, 2011); • Confirmation of English language proficiency at the B2 level (confirmed through one of the following international certificates: TOEFL iBT – minimum score 80; IELTS – minimum score 6.5; PTE General – minimum level B2; FCE – minimum level B; CPE – passing is sufficient; CAE – passing is sufficient. Applicants without an international certificate may take the university's internal English language test at the B2 level, where a minimum score of 70% is considered sufficient); • Successful completion of an oral examination in the specialty; • Completion of administrative registration and issuance of a presidential decree by the university.
Program goals:	The program aims to prepare modern, competitive, and highly qualified specialists (developers, system architects, consultants, analysts, and IT project managers) in the fields of blockchain technologies, virtual assets, and decentralized finance, tailored to the demands of local and global markets. Graduates will be capable of creating, developing, and supporting blockchain-based products, platforms, and services in the rapidly evolving ecosystem of distributed ledger systems, cryptoeconomics, and decentralized internet technologies by synthesizing the latest knowledge and innovative approaches. The program intends to establish a learning environment grounded in both theoretical and practical competencies, which will contribute to strengthening the blockchain ecosystem in Georgia, increasing export products in the technology sector, and positioning the country as one of the regional centers for blockchain innovations. Graduates will be employable in blockchain technologies, virtual assets, and decentralized finance sectors in both private and public organizations in Georgia and international markets. They will also have the opportunity to develop their own startups and blockchain-based projects.
Methods for Attaining Learning Outcomes:	• Explanatory Method; • Group work; • Demonstration Method; • Presentation and defense of discussion-debating topics verbal, i.e. oral method; • Interactive lectures; doing research; • Critical analysis; • Lecture- Seminar; • Survey of literature; • Doing research of increasing complexity; • Practical work; • Giving presentations; • Clarifying problems and their solutions; • Problem-solving tasks; • Projects; • Critical self-assessment; • News discussion; • Constructive criticism of others' work; • Search for relevant material in electronic format or at the library; • Method of written work; • E-learning and collaboration-interaction methods
Learning outcomes:	Knowledge and understanding Upon completion of the course, the student will: • Review systemic information about blockchain technologies, distributed ledger systems, and virtual assets; • Describe the principles of blockchain network architecture, consensus algorithms, smart contracts, and tokenization; • Explain the workings of cryptographic primitives (hashing, digital signatures, asymmetric cryptography); • Describe the operating models of Decentralized Finance (DeFi), NFT, and Web3 systems; • Analyze the main issues concerning the legal, ethical, and regulatory aspects of blockchain projects; • Review the principles of research and innovation in the field of blockchain. Skills Upon completion of the course, the student will: • Critically examine the security issues of blockchain infrastructure; • Manage a team within the framework of a blockchain project and effectively collaborate with multidisciplinary groups; • Plan and lead a research project or a startup in the field of blockchain;

	- Develop a scientific, research, or practical project in the direction of virtual assets, distributed ledger systems, and/or decentralized internet; - Continuously improve knowledge and skills in professional activities, in the conditions of the rapidly changing blockchain ecosystem. Responsibility and autonomy Upon completion of the course, the student will: - Consistently and comprehensively evaluate their own learning process in the field of blockchain technologies and virtual assets; - Independently evaluate and plan their own path of professional development, taking into account technological innovations; - Determine the need for and plan studies at the doctoral level, with the aim of deepening professional knowledge; - Participate in the process of forming professional values and actively use acquired knowledge for the development of the blockchain community.
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Date of program update:	
Update protocol number:	

Program details:	During the first semester, students deeply familiarize themselves with global transformations and technological trends within the context of which they will operate. During this period, they acquire fundamental knowledge of the principles and operational foundations of decentralized systems, and deepen their understanding of innovative business models, cryptography, and practical programming. In the second semester, students develop theoretical and practical competencies related to the functioning and programming of cryptocurrencies. Simultaneously, they gain knowledge and skills in business process description, modeling, documentation, and redesign. In the third semester, students acquire theoretical knowledge and practical skills in smart contracts, as well as study principles and methods of information technology project management. At the end of each semester, students create integrated projects based on the theoretical and practical knowledge acquired, facilitating the consolidation of interdisciplinary skills. Based on the experience from these integrated projects, in the fourth semester (after one year of study), the master's student begins preparing the master's thesis. During the thesis preparation process, the student receives consultations from the program director and/or co-supervisor, ensuring the successful development of the research component and professional growth. Students also create a prototype of their own startup, blockchain-based system, or service. The study process is at 07:00 -09:15 pm, from which the auditory loading time is 120 minutes, break time 15 minutes. Maximum number of graduate students in groups is determined by 25-30 students. Components of undergraduate and graduate programs are composed of items that are intended for 19 weeks.
Teaching Process Characteristics:	120 credits of the program consist of: main part of the program - 60 ECTS, incl. Compulsory subjects 30 ECTS and master's program 30 ECTS. The total number of optional subjects is 108 ECTS, from which the student chooses 60 ECTS.

Program Core

Code	Subject	ECTS	Semester
BLCH5111E	Architecture and Infrastructure of Distributed Ledger Systems	6	1
INFO5600E	Law of Virtual Assets	6	1
BLCH5141E	Blockchain-Based Business Models and Real-World Asset Tokenization	6	2
BLCH5146E	Security Methods in Blockchain	6	2
BLCH5148E	Secure Coding and Cybersecurity in Blockchain Systems	6	3
BLCH5400E	Master's Project	30	4

Total ECTS to be taken: 60

Program Elective

Code	Subject	ECTS	
BLCH5117E	Legal regulations for crypto assets	6	
BLCH5147E	Money Laundering, Terrorism Financing, International Sanctions, and Virtual Assets	6	
BLCH5220E	Cryptography	6	
BLCH5231E	Business-Processes	6	

BLCH5321E	Smart Contract Technologies	6	
INFO5112E	Programming instrument for databases	6	
INFO5246E	ITIL4 Create, Deliver and Support	6	
INFO5249E	Agile-Software Development Project Management	6	
INFO5254E	IT Service Strategy and Design	6	
INFO5256E	Transition of IT Services	6	
INFO6130E	Android Development	6	
INFO6140E	ERP systems structure and Functionality	6	
INFO6250E	Industrial Platform-Based Development	6	
INFO6260E	IT Project Management	6	
INFO6263E	Big Data Systems	6	
INFO6271E	Database System	6	
INFO6330E	IT Management	6	
INFO6340E	Structural analysis of systems	6	

Total ECTS to be taken: 60

Matrix Of Prerequisites

Point	GPA	The university assessment	The general assessment in Georgia	
97-100	4,00	A+	A	Excellent
94-96	3,75	A		
91-93	3,50	A-		
87-90	3,25	B+	B	Very good
84-86	3,00	B		
81-83	2,75	B-		
77-80	2,50	C+	C	good
74-76	2,25	C		
71-73	2,00	C-		
67-70	1,75	D+	D	Satisfactory
64-66	1,50	D		
61-63	1,25	D-		
51-60	1,00	E	E	Sufficient
Not passed				
41-50		FX	FX	Insufficient
<40		F	F	Failed