



REPUBLIKA E SHQIPËRISË

**UNIVERSITETI "ISMAIL QEMALI" VLORE
SENATI AKADEMIK**

Nr. 258/14 Prot.

Vlorë më, 19.03 .2025

VENDIM

Nr. 18, datë 19.03.2025

PËR

**MIRATIMIN E PLANIT MËSIMOR TË PROGRAMIT TË STUDIMIT "BACHELOR
NË COMPUTER ENGINEERING"**

Në mbështetje të nenit 38, pika 1, shkronja d, të Ligjit nr. 80/ 2015 "*Për arsimin e lartë dhe kërkimin shkencor në institucionet e arsimit të lartë në Republikën e Shqipërisë*", nenit 19, pika 1, gërma dh, të Statutit të Universitetit "Ismail Qemali", Vlorë, Udhëzimit nr.1, datë 14.01.2020 "*Për dokumentacionin dhe procedurat për hapjen , rioorganizimin dhe mbylljen e institucionit të arsimit të lartë, degëve të tyre, njësive kryesore dhe programeve të studimit si dhe për ndarjen dhe bashkimin e Institucionit të Arsimit të Lartë*" si dhe referuar shkresës së Sektorit të Kurrikulave dhe Statistikave me nr. 951 datë 19.03.2025, Senati Akademik në mbledhjen e tij të datës 19.03.2024,

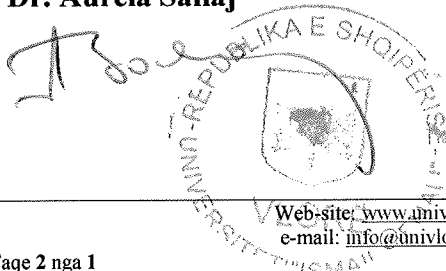
VENDOSI:

1. Të miratojë planin mësimor të Programit të studimit Bachelor në "Computer Engineering" sipas materialit bashkëlidhur dhe pjesë e këtij vendimi.
2. Ngarkohen për zbatimin e këtij vendimi Fakulteti i Shkencave Teknike dhe Natyrore, si dhe Zëvendësrektori Akademik.

Ky vendim hyn në fuqi menjëherë.

KRYETARI I SENATIT AKADEMIK

Prof. Dr. Aurela Saliaj





REPUBLIKA E SHQIPËRISË



UNIVERSITETI "ISMAIL QEMALI" VLORE
FAKULTETI I SHKENCAVE TEKNIKE DHE NATYRORE
DEPARTAMENTI I SHKENCAVE KOMPJUTERIKE

PROGRAM I CIKLIT TË PARË TË STUDIMIT "BACHELOR IN COMPUTER ENGINEERING"

Miratuar në Mbledhjen e Senatit të Universitetit "Ismail Qemali",

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Ky plan mësimor do të zbatohet gjatë vitit akademik 2025-2026

DREJTUESE E DEPARTAMENTIT

Dr. Alketa HYSO

DEKANI

Prof. Asoc. Miftar RAMOSAÇAJ

REKTORI

Prof. Dr. Aurela SALIAJ



**KUADRI I PËRGJITHSHËM FORMUES I PROGRAMIT TË STUDIMIT
“BACHELOR IN COMPUTER ENGINEERING”**

	Disciplinary fields with relevant modules, or other formative activities	CREDIT	Total credits
Activity in disciplines of general education (basic) (Symbol: A)	1. Calculus 1	6	36
	2. Calculus 2	6	
	3. Linear Algebra	6	
	4. Physics 1	6	
	5. Physics 2	6	
	6. Complex Analysis	6	
Activity in the characteristic disciplines of the study program. (Symbol: B)	7. Programming in C	8	92
	8. Object-oriented programming in C++	6	
	9. Object Oriented Programming in Java	6	
	10. Electrotechnics	6	
	11. Data Structures and Algorithmics	6	
	12. WEB programming	6	
	13. Operating Systems	6	
	14. Artificial Intelligence (AI) and machine learning	6	
	15. Database	6	
	16. Software Engineering	6	
	17. Computer Networks	6	
	18. Computer Architecture	6	
	19. Embedded Systems	6	
	20. Systems and signals	6	
Activity in Interdisciplinary/Integrative disciplines and with electives related to characterizing disciplines (Symbol: C)	21. Analog and digital electronics	6	26
	22. Probability and Statistics	6	
	23. Structure and interpretation of computer programs	8	
	24. Optional subject: Cybersecurity	6	
	Cloud Computing		
	25. Optional subject: Data Analytics	6	
	Modeling and simulation technology		
New formative knowledge, such as additions in foreign languages, IT knowledge, professional practices, etc. (Symbol: D)	26. Technological Innovation	4	20
	27. Legislation in ICT	4	
	28. Academic writing	4	
	29. Professional Practice	8	
Closing Obligations (Symbol: E)	30. Diploma Thesis	6	6
TOTAL			180

PLANI MËSIMOR I NDARË SIPAS FORMAVE TË MËSIMDHËNIES

Year	Semester	Code	OBJECT	CREDITS	Total. hours / semester inside & outside the auditori um	Total. hours / semester in the auditoriu m	Total hours / week in the auditorium				Total hours outside the auditoriu m
							Lex	Se m	Lab	Practic e in institu tion	
Year 1	Sem. I	CS111E	Structure and interpretation of computer programs	8	200	90	3	2	1		110
		MAT154E	Calculus 1	6	150	75	3	2	0		75
		FIZ151E	Physics 1	6	150	75	3	2	0		75
		MAT175E	Linear Algebra	6	150	75	3	2	0		75
		DRE132E	ICT legislation	4	100	45	2	1	0		55
	TOTAL			30	750	360	14	9	1		390
	Sem. II	CS121E	Programming in C	8	200	90	3	2	1		110
		MAT155E	Calculus 2	6	150	75	3	2	0		75
		FIZ152E	Physics 2	6	150	75	3	2	0		75
		MAT156E	Complex Analysis	6	150	75	3	2	0		75
MKT107E		Academic writing	4	100	45	2	1	0		55	
TOTAL			30	750	360	14	9	1		390	
Year 2	Sem. I	CS231E	Object-oriented programming: C++	6	150	75	3	1	1		75
		CS242E	Elektrotechnics	6	150	75	3	1	1		75
		CS240E	Data Structures and Algorithmics	6	150	75	3	2	0		75
		CS249E	Computer Architecture	6	150	75	3	1	1		75
		CS246E	Systems and signals	6	150	75	3	1	1		75
	TOTAL			30	750	375	15	6	4		375
	Sem. II	CS232E	Object Oriented Programming : JAVA	6	150	75	3	1	1		75
		CS245E	Database	6	150	75	3	2	0		75
		CS260E	Analog and digital electronics	6	150	75	3	1	1		75
		CS262E	Embedded systems	6	150	75	3	2	0		75
		MAT226E	Probability and Statistics	6	150	75	3	2	0		75
	TOTAL			30	750	375	15	8	2		375
	Year 3	Sem. I	CS341E/CS342E	Cybersecurity/Cloud Computing	6	150	75	3	2	0	
CS370E			Artificial Intelligence (AI) and machine learning	6	150	75	3	2	0		75
CS351E			WEB programming	6	150	75	3	1	1		75
CS347E			Computer Networks	6	150	75	3	1	1		75
CS350E			Operating systems	6	150	75	3	1	1		75
TOTAL			30	750	375	15	8	3		375	
Sem. II		CS360E/CS361E	Data Analytics/Modeling and Simulation Technology	6	150	75	3	1	1		75
		CS378E	Software Engineering	6	150	75	3	2	0		75
		CS379E	Technological Innovation	4	100	45	2	1	0		55
		CS397E	Professional Practice	8	200	30	0	1	1	75	95
		CS398E	Diploma Thesis	6	150	0	0	0	0		150
TOTAL			30	750	195	8	5	2		555	
TOTAL Bachelor in COMPUTER ENGINEERING				180	4500	2070				75	2355



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**UNIVERSITETI "ISMAIL QEMALI" VLORE
FAKULTETI I SHKENCAVE TEKNIKE DHE NATYRORE
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**PROGRAMI I CIKLIT TE PARE TE STUDIMIT
"BACHELOR IN COMPUTER ENGINEERING"**

PERSHKRIMI I LENDEVE/Courses Description

CS111E - Structure and Interpretation of Computer Programs: The course aims to cover the fundamental principles of computer programming. During it, a complete study of: program design, abstraction, modularity, algorithm implementation, and the theoretical foundations of software development. Students will develop problem-solving skills and learn to interpret and analyze computer programs.

MAT154E - Calculus 1: The course aims to cover the basic knowledge of differential and integral calculus. During it, a complete study of: limits, derivatives, integrals, and their applications in science and engineering. Students will develop a strong foundation in mathematical reasoning and analytical problem-solving.

FIZ151E - Physics 1: The course aims to cover the basic principles of classical mechanics. During it, a complete study of: motion, forces, energy, momentum, and their applications in real-world problems. Students will gain a foundational understanding of physical laws and their mathematical formulations.

MAT175E - Linear Algebra: The course aims to cover the basic concepts of linear algebra. During it, a complete study of: vectors, matrices, linear transformations, and systems of linear equations. Students will learn to apply these concepts to problems in computer science, physics, and engineering.

DRE132E - ICT Legislation: The course aims to cover the legal aspects of information and communication technology. During it, a complete study of: data protection laws, intellectual property, cyber security regulations, and ethical considerations in ICT. Students will gain an understanding of the legal framework governing technology.

CS121E - Programming in C: The course aims to cover the basics of structured programming using the C language. During it, a complete study of: variables, control structures, functions, pointers, and memory management. Students will learn to write efficient and maintainable code.

MAT155E - Calculus 2: The course aims to cover the advanced topics of mathematical analysis. During it, a complete study of: integration techniques, applications of integrals, polar coordinates, parametric equations, complex numbers, and numerical series. Students will further develop their analytical and problem-solving skills.

FIZ152E - Physics 2: The course aims to cover the principles of electromagnetism, waves, and optics. During it, a complete study of: electric and magnetic fields, wave propagation, and optical phenomena. Students will apply these principles to solve complex physical problems.

MAT156E - Complex Analysis: The course aims to cover the theory of functions of a complex variable. During it, a complete study of: complex numbers, analytic functions, contour integration, and their applications in engineering and physics. Students will develop a deep understanding of complex mathematical concepts.

MKT107E - Academic Writing: The course aims to cover the principles of effective academic writing. During it, a complete study of: essay structure, research techniques, citation practices, and argument development. Students will learn to write clear, coherent, and well-supported academic papers.

CS231E - Object-Oriented Programming: C++: The course aims to cover the principles of object-oriented programming using C++. During it, a complete study of: classes, inheritance, polymorphism, and encapsulation. Students will learn to design and implement robust, reusable software components.

CS242E - Elektrotechnics: The course aims to cover the fundamentals of electrical engineering. During it, a complete study of: circuit theory, electrical components, and system design. Students will gain practical skills in analyzing and designing electrical circuits.

CS240E - Data Structures and Algorithmics: The course aims to cover the design and analysis of data structures and algorithms. During it, a complete study of: lists, trees, graphs, sorting algorithms, and algorithm efficiency. Students will learn to solve complex problems using appropriate data structures and algorithms.

CS249E - Computer Architecture: The course aims to cover the structure and function of computer systems. During it, a complete study of: processors, memory, input/output systems, and the hardware-software interface. Students will gain an understanding of how computer systems are organized and operate.

CS246E - Systems and Signals: The course aims to cover the analysis of signals and systems. During it, a complete study of: Fourier transforms, system response, and signal processing techniques. Students will apply these concepts to problems in communications and control systems.

CS232E - Object-Oriented Programming: JAVA: The course aims to cover the principles of object-oriented programming using Java. During it, a complete study of: classes, objects, inheritance, interfaces, and platform-independent application development. Students will learn to design and implement Java-based software solutions.

CS245E - Database: The course aims to cover the design and management of databases. During it, a complete study of: relational models, SQL, database normalization, and query optimization. Students will gain practical experience in creating and managing databases.

CS260E - Analog and Digital Electronics: The course aims to cover the principles of analog and digital electronic circuits. During it, a complete study of: transistors, logic gates, microcontrollers, and their applications in computing and communication systems. Students will learn to design and analyze electronic circuits.

CS262E - Embedded Systems: The course aims to cover the design and programming of embedded systems. During it, a complete study of: microcontrollers, real-time operating systems, and hardware-software integration. Students will work on projects involving embedded applications.

MAT226E - Probability and Statistics: The course aims to cover the fundamentals of probability and statistics. During it, a complete study of: probability distributions, statistical inference, hypothesis testing, and data analysis. Students will apply these concepts to make informed decisions based on data.

CS341E - Cyber security: The course aims to cover the principles and practices of cyber security. During it, a complete study of: threat analysis, encryption, network security, and risk management. Students will learn to protect systems and data from cyber threats.

CS342E - Cloud Computing: The course aims to cover the concepts and technologies of cloud computing. During it, a complete study of: cloud architecture, services, deployment models, and cloud security. Students will gain hands-on experience with cloud platforms.

CS370E - Artificial Intelligence (AI) and Machine Learning: The course aims to cover the principles of AI and machine learning. During it, a complete study of: algorithms, neural networks, data mining, and intelligent system development. Students will learn to analyze large datasets and build AI models.

CS351E - WEB Programming: The course aims to cover the development of web applications. During it, a complete study of: HTML, CSS, JavaScript, server-side programming, and dynamic web content creation. Students will learn to build interactive and responsive web pages.

CS347E - Computer Networks: The course aims to cover the principles of computer networking. During it, a complete study of: network protocols, architecture, security, and data transmission. Students will gain an understanding of how networks operate and are managed.

CS350E - Operating Systems: The course aims to cover the design and functionality of operating systems. During it, a complete study of: process management, memory management, file systems, and system security. Students will learn about the core components that enable computer systems to function.

CS360E - Data Analytics: The course aims to cover the techniques and tools for analyzing data. During it, a complete study of: data visualization, statistical analysis, machine learning, and data-driven decision-making. Students will learn to extract insights from large datasets.

CS361E - Modeling and Simulation Technology: The course aims to cover the principles of modeling and simulation. During it, a complete study of: system modeling, simulation techniques,

and their applications in science and engineering. Students will learn to create and analyze models of complex systems.

CS378E - Software Engineering: The course aims to cover the processes and methodologies of software development. During it, a complete study of: project management, software design, quality assurance, and the software development lifecycle. Students will learn to manage and deliver software projects effectively.

CS379E - Technological Innovation: The course aims to cover the processes of technological innovation. During it, a complete study of: innovation management, product development, technology transfer, and competitive strategy. Students will learn to drive innovation in a rapidly changing technological landscape.

CS397E - Professional Practice: The course aims to provide practical experience in the field of study. During it, a complete study of: real-world project work, industry interaction, and professional skill development. Students will apply their knowledge in a professional setting, bridging the gap between academia and industry.