

Study program Overview: Computer and Software Engineering – BSc 2024-2027

Name of Institution:	University of Prishtina
Faculty / Department:	Faculty of Electrical and Computer Engineering Department of Computer and Software Engineering
Main Campus and / or Branch:	Main campus
Title of Study Program:	Computer and Software Engineering – BSc
NQF level of qualification:	Level VI
Academic degree or denomination of academic degree in diploma:	Bachelor of Science in Computer and Software Engineering
ECTS:	180
Study program profile (specializations):	Computer Engineering Software Engineering
Erasmus Subject Area Codes (ESAC):	06.9
Form of studies:	Regular studies
Minimum duration of studies:	3 years / 6 semesters
Number of places to study:	250 places / academic year

Year of study: I

Semester I

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Linear Algebra with Calculus 1	3	3	0	7	Qefsere Doko, Shqipe Lohaj, Valdete Rexhebeqaj
2	M	Physics for engineering 1	2	1	1	5	Valon Veliu
3	M	Fundamentals of electrical engineering 1	3	1	1	6	Enver Hamiti, Mimoza Ibrani, Vjosa Shatri
4	M	Fundamentals of programming	2	0	2	5	Avni Rexhepi Kadri Sylejmani
5	M	Communication skills	2	0	0	3	Blerim Rexha, Sabrije Osmanaj, Bujar Krasniqi
Elective subjects (select one of the following electives)							
6-1	E	Practicum in Mathematics	2	0	0	3	Valdete Rexhebeqaj-Hamiti
6-2	E	Basics Software Tools	2	0	0	3	Core FECE staff

Semester II

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Analytical geometry with Calculus 2	3	3	0	7	Qefsere Doko, Shqipe Lohaj, Valdete Rexhebeqaj
2	M	Physics for engineering 2	2	1	1	5	Valon Veliu
3	M	Fundamentals of electrical engineering 2	3	1	1	6	Enver Hamiti, Mimoza Ibrani, Vjosa Shatri
4	M	Algorithms and Data Structures	2	0	2	6	Kadri Sylejmani, Avni Rexhepi
5	M	Digital logic circuits	2	1	1	6	Sabrije Osmanaj, Artan Mazrekaj

Year of study: II

Semester III

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Discrete Mathematics with Probability & Statistics	2	2	0	5	Qefsere Doko
2	M	Electronics	2	1	1	5	Qamil Kabashi, Milaim Zabeli
3	M	Legal, Ethical and Social Issues in ICT	2	0	2	5	Dhurate Hyseni
4	M	Databases	2	0	2	5	Lule Ahmedi
5	M	Object Oriented Programming	2	0	2	5	Isak Shabani
6	M	Client-Side Web Programming	2	0	2	5	Dhurate Hyseni

Semester IV

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Computer Architecture	2	0	2	6	Qamil Kabashi
2	M	Computer Networks	2	0	2	5	Blerim Rexha
3	M	Data Security	2	0	2	5	Blerim Rexha
4	M	Human Computer Interaction	2	0	2	5	Isak Shabani
5	M	Server-Side Web Programming	2	0	2	5	Dhurate Hyseni
Elective subjects (select one of the following electives)							
6-1	E	Project Management	2	0	1	4	Nora Sadiku-Dushi
6-2	E	Marketing for Engineers	2	0	1	4	Nora Sadiku-Dushi

Year of study: III**Semester V**

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Operating Systems	2	0	2	6	Artan Mazrekaj
2	M	Software Engineering	2	0	2	5	Blerim Rexha
3	M	Design and Analysis of Algorithms	2	0	2	5	Avni Rexhepi
4	M	Entrepreneurship and innovation	2	0	1	4	Nora Sadiku-Dushi
Elective subjects 1 (select one of the following electives)							
5-1	E	Microprocessors & Microcontrollers	2	0	2	5	Lavdim Kurtaj
5-2	E	Signal Processing	2	0	2	5	Faton Maliqi
Elective subjects 2 (select one of the following electives)							
6-1	E	Internet Security	2	0	2	5	Blerim Rexha
6-2	E	Software Quality Assurance	2	0	2	5	Kadri Sulejmani
6-3	E	Data Mining	2	0	2	5	Lule Ahmedi
6-4	E	Scripting Languages	2	0	2	5	Kadri Sylejmani
6-5	E	Data Analysis	2	0	2	5	Blerim Rexha

Semester VI

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Internship	-	-	-	6	Core CSE Staff
2	M	Professional Project	2	0	2	6	Core CSE Staff
3	M	Distributed Systems	2	0	2	M	Isak Shabani
Elective subjects (select one of the following electives)							
4-1	E	Cloud Computing	2	0	2	6	Artan Mazrekaj
4-2	E	Fundamentals of Artificial Intelligence	2	0	2	6	Avni Rexhepi
4-3	E	Game Programming	2	0	2	6	Blerim Rexha
4-4	E	Augmented, Virtual and Mixed Reality	2	0	2	6	Lule Ahmedi
4-5	E	Data Engineering	2	0	2	6	Lule Ahmedi
4-6	E	Platform-Based Development	2	0	2	6	Lule Ahmedi
4-7	E	Fundamentals of Blockchain Technologies	2	0	2	6	Blerim Rexha

4-8	E	Data communication	2	0	2	6	Bujar Krasniqi
4-9	E	Introduction to Large Language Models	2	0	2	6	Blerim Rexha
4-10	E	Biometrics & Forensics	2	0	2	6	Blerim Rexha
4-11	E	Coding and Algorithms Bootcamp	2	0	2	6	Kadri Sylejmani
4-12	E	Embedded Systems	2	0	2	6	Faton Maliqi
5	E	Diploma	6	-	-	M	Core CSE Staff

Mission and objectives

Mission

The Bachelor of Science in Computer and Software Engineering program has been designed by the Computer and Software Engineering department of FECE, while ensuring that it meets the standards set by European, and American universities - making it comparable and compatible with their programs. It is designed to prepare students for professional careers in computer science and engineering while also providing them with the necessary basic research skills for further studies at the master or doctoral level.

The program is highly adaptable to meet the demands of both local and international markets, offering a modern and flexible curriculum that includes practical placements in industry. This approach ensures that students gain a comprehensive understanding of the structure, function, and evolution of information technology and develop the skills necessary to keep pace with the rapidly changing landscape of the global labor market.

The program's specialized content covers a wide range of topics related to computer and software engineering, including programming, algorithms, computer architecture and networks, databases and data structures, advanced algorithms and artificial intelligence, web development, operating systems, parallel and distributed computing, interface design, and information security.

As the first specialized program of its kind in Kosovo, this bachelor's degree program in Computer and Software Engineering plays a crucial role in building national technological capacity and providing a highly skilled workforce for private enterprises, government organizations, and non-governmental organizations.

The Faculty of Electrical and Computer Engineering is committed to supporting the triple mission of the University of Prishtina by providing high-quality education, advancing scientific knowledge through research, and offering educational expertise to the local, national, and international community. As such, the objectives of the program are in line with the mission of the faculty and the university, ensuring that the graduates are well-prepared to make meaningful contributions to the field of computer and software engineering.

The program's curriculum is carefully designed to integrate theory and practice, utilizing examples from real-world computer science and engineering applications. This approach enables students to

develop relevant research skills in their field of interest, allowing them to stay ahead of the curve in an ever-changing industry.

The Bachelor of Science in Computer and Software Engineering program is committed to providing students with a detailed overview of the latest information technologies and their business implications. Students will learn how to plan and implement these technologies, gaining a comprehensive understanding of their impact on the global economy. In addition, the program aims to address the critical shortage of specialized programs in computer and software engineering in Kosovo's higher education institutions.

Objectives

The Bachelor's program in Computer and Software Engineering at UP/FECE is designed to equip students with a well-rounded understanding of the field. In addition to technical skills, the program places great emphasis on the development of essential skills such as critical thinking, problem-solving, and teamwork. With this comprehensive approach, students are well-prepared for the demands of the ever-evolving field of Computer and Software Engineering.

Upon completion of the program, graduates will be able to demonstrate a comprehensive understanding of computer and software engineering principles.

The program's objectives are based on the mission of the faculty, which prioritizes the following:

- Providing students with an advanced level of understanding of Computer and Software Engineering, including the form and function of these fields at all levels of organization.
- Developing in-depth knowledge of key topics in Computer and Software Engineering.
- Systemizing, analyzing, and reporting data collected and processed in the laboratory at different levels in a professional and effective manner.
- Developing critical professional skills, such as writing, information retrieval, statistical data analysis, presentation of results, problem-solving, and teamwork, that are essential for employment in today's dynamic job market.
- Preparing students to provide expert advice and support to relevant institutions and organizations.

The realization of the objectives of the Bachelor's program in Computer and Software Engineering at the University of Prishtina is dependent upon the successful achievement of the outlined learning outcomes. These outcomes represent a comprehensive set of skills and knowledge that students will acquire during the program:

- Ability to critically and creatively analyze problems in Computer and Software Engineering and provide solutions to them through the use of information technology (IT) techniques
- Authenticity in applying acquired knowledge and practical understanding of problem finding and solving, and can act independently in planning and implementing research
- Ability to analyze and design software systems as well as their interaction scenarios
- Skills to analyze IT requirements considering customer needs and implement these requirements in a practical way

- Effective communication skills, both oral and written, to efficiently and persuasively communicate technical information
- Comprehensive understanding of the problems and basic principles of the various tools used in the IT field
- Basic research skills to undertake a research approach towards the solutions to be offered using IT
- Proficiency to analyze, model, abstract, and implement business and technical aspects during IT projects
- Expertise to provide advice and expertise in the field of Computer and Software Engineering
- Ability to read critically and evaluate the results of qualitative and quantitative research in the chosen field
- Ability to identify, discuss, and resolve potential conflicts and potential misunderstandings between business and technology at both technical and interpersonal levels and taking preventative measures
- Quick familiarization with specialized topics to understand complex technical interconnections in the business environment