Study program Overview: Information and Communication Technologies – BSc 2024-2027

Name of the institution	University of Prishtina "Hasan Prishtina"
Faculty/Department:	Faculty of Electrical and Computer Engineering
Main and/or Branch Campus:	Main Campus
Name of the study programme:	**Information and Communication Technologies**
Level of qualification according to NQF:	Level VI
Academic degree or the name of Diploma:	Bachelor of science in Information and Communication Technologies
ECTS:	180
Profile of the academic program (specialization):	**Information and Communication Technologies – ICT**
Minimum duration of studies:	3 years
Number of study places:	80

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 Rexhbeqaj-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	Probability and statistics	3	1	0	7	Valdete Rexhebeqaj Hamiti
2	M	Signals and Information	3	2	0	6	Enver Hamiti
3	M	Electronics for ICT	2	0	2	6	Milaim Zabeli
4	M	Internet Technologies	2	0	2	6	Mimoza Ibrani
5	M	Software tools for Engineering (Matlab, Python, etc.)	2	0	2	5	Bujar Krasniqi

Semester IV

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Digital Communications	3	1	1	6	Enver Hamiti
2	M	Electromagnetic waves	2	1	1	6	Mimoza Ibrani
3	M	Data Transmission	2	0	2	5	Bujar Krasniqi
4	M	Communication networks	2	0	2	5	Mimoza Ibrani
5	M	Internship	1	0	0	3	From department
Elective subjects (select one of the following electives)							
6-1	E	Project Management	2	1	0	5	Nora Sadiku Dushi
6-2	E	Professional Communications in English	2	1	0	5	UP
6-3	E	Digitalization and innovation for sustainable development	2	1	0	5	Bujar Krasniqi
6-4	E	Ethics in science and engineering	2	1	0	5	Department/Industry

Year of study: III

Semester V

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Project in networking and communication	2	0	1	6	Mimoza Ibrani
2	M	Internet of things	3	0	2	5	Bujar Krasniqi
3	M	Network programming	2	0	2	6	Zana Limani
4	M	Internship	1	0	0	3	From department
Elective subjects (select one of the following electives)							
6-1	E	Web application development	2	0	2	5	Zana Limani Fazliu
6-2	E	Multimedia technologies and systems	2	0	2	5	Hëna Maloku
6-3	E	Cloud networking and big data	2	0	1	5	Department/Industry
6-4	E	Entrepreneurship and innovation	2	0	1	5	Nora Sadiku Dushi

Semester VI

No	M/E	Subjects	L	NE	LE	ECTS	Lecturer
1	M	Microwave and RF Engineering	2	1	1	6	Enver Hamiti
2	M	Mobile Communications	2	0	1	6	Hena Maloku
3	M	Artificial Intelligence and applied methods	3	0	1	6	Zana Limani
4	M	Final project (Internship and presentation) Students spend 6x25 hours (6 ECTS) in ICT sector. He prepares seminar/presentation and presents his/her work in front of joint academy-industry evaluation panel (2 ECTS)	1	0	2	8	Department and Industry
Elective subjects (select one of the following electives)							
5-1	E	Secure communications	2	0	1	4	Zana Limani
5-2	E	Optical Communications	2	0	1	4	Bujar Krasniqi
5-3	E	Emerging topics in communications	2	0	1	4	Mimoza Ibrani
5-4	E	Animation and Virtual Reality	2	0	1	4	Hena Maloku

Mission and objectives

The mission of the bachelor program in Information and Communication Technologies is in full compliance with the mission of the university and faculty. The study program will provide qualitative academic development, aligned with the strategic objectives and interests of the Republic of Kosovo, building a digital economy for successful global competition. ICT is a strategic sector for the Kosovo economy (https://mzhe-ks.net/en/information-technology-telecommunications.html). We aim for a professional engineer profile that is trained in the broad ICT domain and is equipped with both technical and market-oriented skills and, therefore, that can contribute to the techno-economic society challenges. The graduates of this study program should be trained to understand and respond to new information and communication technologies relevant to industry needs. They should be prepared to pursue master's studies in the same or comparable field of study and should have a good basis and incentive for further independent study within the framework of lifelong learning.

The European Commission Digital Agenda for the Western Balkans calling for capacity building on ICT, aiming training for a new generation of researchers and engineers that will promote interdisciplinary collaboration across Europe, is still an actual call for investment in ICT education. Investment in the quality of education, teaching, learning and innovation, especially in the area of ICT, increase economic competitiveness and unlock the economic potential of smaller countries, especially for those with high unemployment rates (https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4242).

The ICT study program will prepare and deliver graduates who will be able to enhance productivity, innovation and market competitiveness both in the country and worldwide. The graduates of the bachelor program in ICT will have the knowledge, competencies and skills needed to perform functions in public and private enterprises as well as governmental and non-governmental

organizations. The program develops competencies to analyze and solve problems of medium complexity, work as an efficient team member, and contribute to the enhancement of systems and processes in the field of ICT engineering. Finally, our graduates should not only be able to fulfil the professional competencies of current market needs but also have the ability to enhance participation and collaborative opportunities with national, regional and international companies.

Still, the proposed study program is the only study program, unique in the country, from which students will gain knowledge and skills in ICT combined with radio frequency engineering. The objectives of the ICT Bachelor study program have been set in accordance with the FECE mission and the labour market requirements. FECE is an academic unit of the UP, based on Article 6 of the UP Statute, supporting the three-pronged mission of the University of Prishtina, providing high-quality education, and advancing professional and scientific knowledge through applications and scientific research in specific fields.

The basic program objectives are:

- To provide students with high-quality knowledge and skills in the field of ICT.
- To encourage creativity, responsibility, teamwork, research and innovation interest.
- To offer a good foundation for further academic degree education in similar disciplines and/or lifelong learning paths.
- To deliver applicable knowledge and skills to ensure smooth students' transition from university to the labour market.
- To contribute to the creation of a knowledge-driven society aiming to shape the technological development of the country, region and beyond.

The general competencies obtained through the study program are:

- The ability to apply the knowledge of mathematics, physics, science and engineering to identify and solve problems in the ICT field.
- Achieve an appropriate level of knowledge of the application of programming languages and algorithms.
- Gain and apply knowledge and skills in information systems and communication networks, wired and wireless networks as well as radio frequency engineering.
- Develop professional skills in using information systems and networks for collecting, processing and transmitting data.
- Demonstrate professional ethics and responsibility in engineering work, and develop both oral and written communication abilities.
- To follow the ICT sector's progress and contribute by inclusion in the labour market.

Learning outcomes

Upon successful completion of this program, the student will be able to:

- Identify, define, understand and analyze problems in the field of ICT and other fields related to engineering.
- Demonstrate a satisfactory level of professional knowledge in the field of ICT.
- Effectively work and communication orally and in writing, individually or in groups in multidisciplinary settings.
- Design, implement, certify and deploy a communication network or system, in accordance with professional, environmental and social responsibility.
- Gain hands-on practical knowledge that meets the needs of the job market.
- Follow the development trends in the field of ICT, at the level of its competencies.
- Implement contemporary trends in the field of ICT, at the level of its competencies.