

Study program Overview: Information and Communication Technologies- BSc

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

Syllabus: Level 1 study cycle in **Information and Communication Technologies** study program

Sem 1

No	M/E	Course title	ECTS
1	M	Linear Algebra and calculus 1	7
2	M	Physics 1	6
3	M	Fundamentals of electrical engineering 1	7
4	M	Fundamentals of programming	5
		Elective Courses (1)	
5-1	E	Technical English	5
5-2	E	Communication skills	5
5-3	E	German language	5
5-4	E	Practicum in Mathematics	5

Sem 2

No	M/E	Course title	ECTS
1	M	Calculus 2	7
2	M	Physics 2	6
3	M	Fundamentals of electrical engineering 2	7
4	M	Algorithms and Data Structures	5
5	M	Digital logic circuits	5

Sem 3

No	M/E	Course title	ECTS
1	M	Calculus 3 and Probability	6
2	M	Signals and Information	7
3	M	Electronics	7
4	M	Internet Technologies	6
		Elective Courses (1)	
5-1	E	Matlab Practicum	4
5-2	E	Practicum in Labview	4

Sem 4

No	M/E	Course title	ECTS
1	M	Digital Communications	7
2	M	Electromagnetic fields and waves	7
3	M	Data Transmission	7
		Elective Courses (1)	
4-1	E	ICT Project Management	4
4-2	E	Economics for Engineering	4
		Elective Courses (1)	
5-1	E	Computer and Mobile Equipment's Architecture	5
5-2	E	Application development in C++	5
5-3	E	Web application development	5

Sem 5

No	M/E	Course title	ECTS
1	M	Communication networks I	6
2	M	Operating Systems for ICT	5
3	M	Object oriented programming	5
4	M	Multimedia technologies and systems	6
		Elective Courses (2)	
5-1	E	Python	4
5-2	E	Application development for Android an iOS	4
5-3	E	Computer games development	4
5-4	E	Matlab Practicum	4
5-5	E	Practicum in Labview	4

Sem 6

	M/E	Course title	ECTS
1	M	Microwave and RF Engineering	4
2	M	Mobile Communications	4
3	M	Distributed programming	4
4	M	Communication networks II	4
5	M	Final project (Internship and presentation) Student spends 6x25 hours (6 ECTS) in ICT sector. He prepares seminar/presentation and presents his/her work in front of joint academy-industry evaluation panel (4 ECTS)	10
		Elective Courses (1)	
6-1	E	Optical Communications	4
6-2	E	Bioelectromagnetics	4
6-3	E	Communication protocols	4
6-4	E	Animation and Virtual Reality	4

Explanation:

- Total number of credits (ECTS) accumulated for one year is 60 ECTS - credits.
- The first year (first and second semesters) is the same for all programs at FECE.
- In all semesters besides the compulsory courses (O) there are also elective courses.
- After choosing the elective course it becomes a compulsory course, the student or the professor will not be able to change the course.
- In the last semester the compulsory course "Final Project" is organized so that the student must complete 125 working hours, in one of the companies with which FIEK has an agreement and which are an integral part of the Advisory Body.

Comparability of the proposed program with other universities programs:

Comparison of study programs with similar programs in the region:

- University of Zagreb, Electrical Engineering and Information Technology, 75-80 % https://www.fer.unizg.hr/en/study_programs
- University of Ljubljana, Faculty of electrical engineering, Information and Communication Technologies program, 70-75% http://www.fe.uni-lj.si/en/education/1st_cycle_academic_study_programme/electrical_engineering/curriculum/

The mission, objectives and administration

The exponential growth and widespread application of Information and Communication Technologies (ICT) in all fields of modern society has positioned this sector as one of the main supports/pillars of the country economy and beyond, thus creating the need for more ICT professionals with relevant university degrees. University graduate professionals should not only be able to fulfill the current market needs but also have the ability to exploit opportunities that new technologies offer.

At the Digital Assembly held on June 2018, the European Commission launched the 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. Investment in the quality of education, teaching, learning and innovation,

especially in the area of ICT, as these types of skills increase economic competitiveness, are considered key to unlocking the economic potential of smaller countries, especially for those with high unemployment rate. (https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4242).

The mission of the bachelor program in Information and Communication Technologies is in compliance with the mission of university and faculty, to provide qualitative academic education 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 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 ICT study program will prepare and deliver graduates who will be able to enhance productivity, innovation and market competitiveness both in 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, to work as an efficient member of a team, and to contribute to enhancement of systems and processes in the field of ICT engineering.

This program will enable students to acquire the necessary knowledge from: fundamental electrical engineering courses, programming languages, communication systems and networks, multimedia communications and the basics of radio engineering. The proposed program integrates the theory developed with modern teaching methods as well as the practice carried out in the relevant ICT laboratories in FECE for different courses.

The objectives of the ICT Bachelor study program have been set in accordance with the FECE mission and the labor 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, 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, team work, 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 ensuring smooth students transition from university to labor market.
- To contribute in creation of knowledge-driven society aiming to shape the technological development of country, region and beyond.

The general competences 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 on information systems and communication networks, wired and wireless networks as well as radio frequency engineering.
- Develop professional skills in the use of information systems and networks for the collection, processing and transmission of data.
- Demonstrate professional ethics and responsibility in engineering work, develop both oral and written communication abilities.
- To follow ICT sector progress and contribute by inclusion in the labor market.

Learning outcomes

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

- Identifies, defines, understands and analyzes problems in the field of ICT and other fields related to engineering.
- Demonstrates a satisfactory level of professional knowledge in the field of ICT.
- Effective work and communication orally and in writing, individually or in groups in multidisciplinary settings.
- Design, implementation, certification and deployment of 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.
- Follows the development trends in the field of ICT, at the level of its competencies.
- Implements contemporary trends in the field of ICT, at the level of its competencies.