

## BACHELOR IN “INFORMATICS ENGINEERING”

### STUDY PROGRAMME OBJECTIVES

The aim of this study program is to prepare specialists that are capable of fulfilling computer technology demands regarding data processing and information communication between computers in engineering systems. This programme of study prepares students with the necessary knowledge to fulfil local and international labour demands by making use of computer technology, to solve software and hardware engineering problems. The curriculum offers courses that professionally prepare students as specialists in three main aspects of contemporary information systems development, which are hardware, software, and information technology. Students who complete this study program have good programming skills in several programming languages, databases, computer networks, software engineering, electronics, robotics, numerical signal processing, etc.

### LEARNING OUTCOMES

At the end of the study program, the student will be able to:

- Develop programs and software systems using different programming languages and techniques according to specific requirements.
- Analyse, design, and administer databases.
- Configure, administer, and maintain computer networks.
- Analyse aspects of security in the IT systems and infrastructure of an organization/company and recommend technical solutions to detect and prevent cyber-attacks.
- Maintain and improve digital communication systems, including mobile telecommunications.

### SPECIALISATION: TELECOMMUNICATION ENGINEERING

- Configure and maintain digital transmission and communication systems including mobile networks.
- Analyse important aspects of telecommunications, including processing, modulation, coding and communication protocols.

### SPECIALISATION: SOFTWARE DESIGN

- Design and develop computer programs using different programming languages and techniques.
- Analyse, design, develop and administer databases.
- Maintain and improve information systems.
- Develop and implement digital services.

### JOB OPPORTUNITIES

Students who complete their studies in this study program have opportunities to be employed in all sectors where computer technology is used, including information processing and operational processes, software development companies, hardware and software product development companies, etc. The diploma holder



of this program has employment opportunities in the following positions:

- Specialist of IT Systems
- Specialist of computer networks
- Database specialist,
- Software developer (frontend, backend, mobile, desktop, etc.)
- Software engineer
- Analyst and designer of software systems
- IT project management
- Systems security specialist
- Telecommunications specialist
- Digital communications specialist

Graduates may be employed in business and financial sector, public institutions, nonprofit organizations, health, educational, etc.



**BACHELOR in "INFORMATICS ENGINEERING" - 180 ECTS**

No.	Year	Term	Subject Title	ECTS
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**A - GENERAL COURSES**

1	I	1	Algebra and Geometry	6
2	I	1	Mathematics Analysis 1	6
3	I	2	Mathematics Analysis 2	6
4	I	2	Introduction to probability	6
5	I	1	Basics of Informatics	4
6	I	2	Physics 2	6

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**B - CORE COURSES**

1	I	1	Algorithmics and introduction to programming	6
2	I	2	Computer Architecture and Organisation	6
3	I	2	Programming 1	6
4	II	2	Programming 2	6
5	II	2	Computer Networks	6
6	II	2	Theory and Numerical Processing of Signals	6
7	II	1	Electronics	8
8	II	1	Data Structure	6
9	II	1	Theory of Databases	6
10	II	2	Operating Systems	6
11	III	1	Virtualisation and cloud computing	5
12	III	1	Data Communication	6
13	III	1	Security of Information Systems	6
14	III	2	Introduction to software engineering	6
15	III	2	Elements of Robotics and automatisisation	6

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**C - INTERDISCIPLINARY/INTEGRATIVE COURSES**

Specialization I			Software Design	
1	III	1	E-services	6
2	III	1	Mobile application development	6
3	II	2	Web development	6
4	III	2	Machine learning	6
5	III	1	Honors Course	6
Specialization II			Telecommunication Engineering	
1	III	1	Telecommunication Systems	6
2	III	2	Systems in Radiofrequency	6
3	III	1	Electromagnetic field theory	6
4	II	2	Introduction to Telecommunication	6
5	III	1	Honors Course	6

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**D - ADDITIONAL COURSES**

1	II	1	English	5
2	I	1	Accademic writing and research methods	8
3	II	1	Projects design and management	6
4	III	2	Internship	5

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**E - FINAL OBLIGATIONS**

1	III	2	Diploma Thesis/Final Exam	7
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