

## BACHELOR ENGINEERING PROGRAM IN TELEMATICS ENGINEERING (CODE 59TL)

**ACADEMIC YEAR 2023-2024**

### FIRST YEAR

CODE	COURSES	ECTS	TYPE	SEMESTER	DEPARTMENT CODE
595000201	LINEAR ALGEBRA	6	Elem	1 <sup>st</sup>	D540
595000203	CIRCUITS ANALYSIS I	6	Elem	1 <sup>st</sup>	D250
595000202	CALCULUS I	6	Elem	1 <sup>st</sup>	D540
595000205	INTRODUCTION TO TELECOMMUNICATIONS	3	Comp	1 <sup>st</sup>	D250
595000204	PROGRAMMING I	6	Elem	1 <sup>st</sup>	D230
595000200	INTRODUCTORY WORKSHOP ON ENGINEERING	3	Comp	1 <sup>st</sup>	D250
595000207	CIRCUITS ANALYSIS II	6	Elem	2 <sup>nd</sup>	D250
595000209	CALCULUS II	6	Elem	2 <sup>nd</sup>	D540
595000206	PROFESSIONAL COMMUNICATION SKILLS	3	Comp	2 <sup>nd</sup>	D240
595000208	ELECTRONICS I	6	Elem	1 <sup>st</sup> and 2 <sup>nd</sup>	D230
595000210	PROGRAMMING II	6	Elem	1 <sup>st</sup> and 2 <sup>nd</sup>	D230
595000211	SEARCH TECHNIQUES AND INFORMATION SYSTEMS	3	Comp	2 <sup>nd</sup>	D230

### SECOND YEAR

CODE	COURSES	ECTS	TYPE	SEMESTER	DEPARTMENT CODE
595000212	ELECTROMAGNETISM AND WAVES	6	Elem	1 <sup>st</sup> and 2 <sup>nd</sup>	D510
595000214	ELECTRONICS II	6	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D230
595000213	STATISTICS AND STOCHASTIC PROCESSES	6	Elem	1 <sup>st</sup> and 2 <sup>nd</sup>	D540
595000215	TELECOMMUNICATIONS NETWORKS AND SERVICES	6	Comp	1 <sup>st</sup>	D230
595000216	SIGNALS AND SYSTEMS	6	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D250
595000217	SCIENCE. TECHNOLOGY AND SOCIETY	3	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D230
595000220	MICROPROCESSORS	6	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D230
595000222	ADVANCED APPLICATION PROGRAMMING	6	Comp	2 <sup>nd</sup>	D230
595000218	WAVE PROPAGATION	4.5	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D510
595000219	COMPUTER NETWORKS	4.5	Comp	2 <sup>nd</sup>	D230
595000221	COMMUNICATION THEORY	6	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D250

### THIRD YEAR

CODE	COURSES	ECTS	TYPE	SEMESTER	DEPARTMENT CODE
595000223	ECONOMICS AND BUSINESS MANAGEMENT	4.5	Comp	1 <sup>st</sup>	D400
595000226	MODELLING LANGUAGES	4.5	Comp	1 <sup>st</sup>	D230
595000227	SIGNALLING AND SWITCHING	6	Comp	1 <sup>st</sup>	D230
595000229	AUDIOVISUAL SYSTEMS	4.5	Comp	1 <sup>st</sup>	D250
595000228	TRANSMISSION SYSTEMS	6	Comp	1 <sup>st</sup>	D230
595000225	OPERATING SYSTEMS	4.5	Comp	1 <sup>st</sup>	D230
595000224	DIGITAL SIGNAL PROCESSING	4.5	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D250
595000232	INFORMATION PROCESSING IN TELEMATIC APPLICATIONS	4.5	Comp	2 <sup>nd</sup>	D230
595000230	ADVANCED NETWORKS AND SERVICES	6	Comp	2 <sup>nd</sup>	D230
595000231	NETWORKS AND SERVICES SECURITY	6	Comp	2 <sup>nd</sup>	D230
	ELECTIVE SUBJECTS/INTERNSHIP CREDITS	9	Elec		

### FORTH YEAR

CODE	COURSES	ECTS	TYPE	SEMESTER	DEPARTMENT CODE
595000233	ENGLISH FOR PROFESSIONAL AND ACADEMIC COMMUNICATION (*)	6	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	D240
595000234	MOBILE COMMUNICATIONS NETWORKS	6	Comp	1 <sup>st</sup>	D230
595000235	COMMUNICATIONS SOFTWARE	4.5	Comp	1 <sup>st</sup>	D230
	ELECTIVE SUBJECTS/INTERNSHIP CREDITS	13.5	Elec	1 <sup>st</sup>	
595000236	PROJECT MANAGEMENT	4.5	Comp	2 <sup>nd</sup>	D400
595000237	ADVANCED TELEMATIC APPLICATIONS	4.5	Comp	2 <sup>nd</sup>	D230
595000240	FINAL DEGREE PROJECT *	12	Comp	1 <sup>st</sup> and 2 <sup>nd</sup>	ALL
	ELECTIVE SUBJECTS/INTERNSHIP CREDITS	9	Elec	2 <sup>nd</sup>	

(\*) A B2 English certificate is required for the enrolment.

#### TYPE OF COURSES:

- *"Elem"* – Elementary.
- *"Comp"* – Compulsory.
- *"Elec"* – Elective.

## ELECTIVE COURSES

TYPE	SPEC	SEMESTER	YEAR	CODE	COURSES	ECTS	REQUIREMENTS	DEPT. CODE
A	TL	1 <sup>st</sup>	4 <sup>th</sup>	595040248	INTERACTION SYSTEMS FOR SOCIAL ROBOTICS	4.5	--	D230 D250
			4 <sup>th</sup>	595040253	MULTI-PARADIGM PROGRAMMING FOR ICT	4.5	--	D230
		2 <sup>nd</sup>	3 <sup>th</sup>	595040254	EMERGING ICT FOR SUSTAINABILITY	4.5	--	D230
			3 <sup>th</sup>	595010242	NETWORK AND SYSTEM ADMINISTRATION	4.5	--	D230
			4 <sup>th</sup>	595010252	INTRODUCTION TO ARTIFICIAL INTELLIGENCE IN THE CLOUD	4.5	--	D230
			4 <sup>th</sup>	595010243	MOBILE APPLICATIONS DEVELOPMENT	4.5	--	D230
B	EC	1 <sup>st</sup>		595024027	DIGITAL DESIGN I	4.5	--	D230
				595024028	MICROPROCESSOR-BASED SYSTEMS	6	--	D230
		2 <sup>nd</sup>		595024023	ANALOG ELECTRONICS I	6	--	D230
				595024033	PRODUCTION TECHNOLOGIES OF ELECTRONICS SYSTEMS	4.5	--	D510
	SC	1 <sup>st</sup>		595024327	WAVE TRANSMISSION AND PROPAGATION	6	--	D250
				595024328	COMMUNICATIONS ELECTRONICS I	6	--	D250
		2 <sup>nd</sup>		595024322	ANALOG ELECTRONICS	6	--	D250
				595024331	COMMUNICATIONS ELECTRONICS II	6	24328	D250
	SO	1 <sup>st</sup>		595024126	AUDIO ENGINEERING I	4.5	24122	D250
				595024128	IMAGE AND VIDEO TECHNOLOGIES	6	24122	D250
		2 <sup>nd</sup>		595024122	SOUND AND IMAGES FUNDAMENTALS	6	--	D250
				595024131	AUDIO ENGINEERING II	6	24122	D250
C	-	1 <sup>st</sup> / 2 <sup>nd</sup>		595040064	AIMING AT B2 IN ENGLISH	3	--	D240
		1 <sup>st</sup>		595040341	COMMUNICATION SYSTEM ARCHITECTURE	4.5	--	D250
				595040066	INTRODUCTION TO MACHINE LEARNING	3	--	D230
				595040049	PROGRAMMING IN LABVIEW	4.5	--	D510/D230
				595040060	RENEWABLE ENERGY	3	--	D510
				595040061	SMART HOME	3	--	D230
				595040062	TELECOMUNNICATION COMMON INFRASTRUCTURES	3	--	D250
				595040074	CIS TO DEFENCE	3	--	D250
		2 <sup>nd</sup>		595040072	DISCRETE MATHEMATICS	3	--	D540
				595040073	DYNAMICAL SYSTEMS	3	--	D540
				595040050	FUNDAMENTALS OF ENERGY HARVESTING	4.5	--	D230
				595040537	INTRODUCTION TO QUANTUM COMPUTING	4,5	--	D540
				595040070	MANAGEMENT OF TECHNOLOGICAL INNOVATION	3	--	D230
				595040042	PHOTOVOLTAIC ENGINEERING	4.5	--	D510/D230
				595040065	WOMEN IN SCIENCE AND TECHNOLOGY	3	--	D510

TIPO	PERIODO	CÓDIGO	ASIGNATURAS	ECTS
PE	1º y 2º	595030275	P1 PRÁCTICAS EXTERNAS	3
		595040090	P1B PRÁCTICAS EXTERNAS	3
		595030276	P2 PRÁCTICAS EXTERNAS	4,5
		595040091	P2B PRACTICAS EXTERNAS	4.5
		595030277	P3 PRÁCTICAS EXTERNAS	6
		595040092	P3B PRACTICAS EXTERNAS	6
		595030278	P4 PRÁCTICAS EXTERNAS	9
		595030279	P5 PRÁCTICAS EXTERNAS	12
		595030287	P6 PRÁCTICAS EXTERNAS	15

## ELECTIVE COURSES

- Each student must pass at least 31.5 elective ECTS to complete the degree.

### TYPES OF ELECTIVE COURSES

Each academic year, the School Board will establish the range of optional courses.

**A Type** - Elective courses to strengthen the specialty.

**B Type** - Elective courses to strengthen other specialties.

**C Type** - Elective courses for the four degrees.

**PE** - Internship credits.

### ADMISSION REQUIREMENTS FOR ELECTIVE COURSES

To enroll on an elective course, every student must have taken or passed the course(s) shown in the **REQUIREMENTS** box.

#### SPEC.:

EC: Electronics for Communications.

SC: Telecommunications Systems.

SO: Image and Sound.

TL: Telematics.

#### DEPARTMENT CODES

D230: Telematics and Electronic Engineering.

D240: Linguistics Applied to Science and Technology.

D250: Audiovisual and Communications Engineering.

D400: Organization Engineering, Business Management and Statistics.

D510: Physical Electronics, Electrical Engineering and Applied Physics.

D540: Mathematics Applied to Information and Communication Technologies.