



Anexa III.1.b. Fișe discipline de învățământ

UNIVERSITATEA TEHNICĂ „GHEORGHE ASACHI” DIN IAȘI
Facultatea de Electronică, Telecomunicații și Tehnologia Informației
 B-dul Carol I nr. 11
 IAȘI - 700506
ROMANIA
 Tel: +40-232-270041; Fax: +40-232-217720

Domeniul de licență: Inginerie Electronică și Telecomunicații
Programul de studii universitare de licență: Tehnologii și Sisteme de Telecomunicații
Limba de predare: engleza
Forma de învățământ: zi

COURSE INFORMATION

Course name	Mathematical analysis – Part one						
Code	EDIF101	Semester	I	Credits	5		
Faculty	Electronics, Telecommunications and Information Technology		Number of hours				
Profile	Electronic		Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies		56	28	28	-	-
Category							DF
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical							
Optionality							DM
DM – mandatory, DE –elective, DL –facultative							
Previous discipline	mandatory						
	recommended						
Objectives	Give some mathematical tools which are useful for solving several mathematical problems, show some basic ideas which relate the mathematics studied in high school with some technical courses studied in faculty and provide a background to understand many applications of this theory.						
Content	I. Introduction The set of real numbers, the n-dimensional Euclidean space, the closed real line ... 4 hours II. Real sequences and series _____ ...4 hours III. Limit and Continuity _____ ...4 hours IV. Derivability for functions of one variable, Theorems of Fermat, Rolle, Cauchy, Lagrange, L'Hospital, Taylor formula ... 4 hours V. Partial derivatives, Differentiation, Derivability of higher order, Taylor formula for functions of several variables, the chain rule.....6 hours VI. Implicit functions, extrema, functional dependence.....2 heures VII. Sequences and Series of functions, power series4hours						
Course Grade							
Final evaluation	Exam						E

Grading Plan	Exam (The final written work) is 60% The activity during all seminars is 10% The activity during all courses is 10% The first test paper is 10% The second test paper is 10%.	

Instructor	Title, first name, last name	Signature
	Professor Cornelia-Livia BEJAN	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Linear Algebra
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Code	EDIF102	Semester	I	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL – facultative	DM

Previous discipline	mandatory	Algebra and analytical geometry (from high school)
	recommended	Calculus

Objectives	First objective is to give mathematical knowledge to students that are necessary to understand the fundamental and speciality subjects. The second objective is to form a logical thinking and improve their calculus capacity.
Content	<ul style="list-style-type: none"> - Linear algebra (vectorial spaces, linear transformations, quadratic forms). - Vectorial algebra (free vectors, products of vectors, vectorial equations). - Applications of the linear algebra in geometry (lines and planes in spaces).

Course Grade		
Final evaluation	Exam	E
Grading Plan	Final Exam	60%
	Seminar	20%
	Tests during the semester	10%
	Homework	10%

Instructor	Title, first name, last name	Signature
	Professor PhD Constantin FETECAU	

**Dean
Prof. Ion Bogdan, PhD**

C O U R S E I N F O R M A T I O N

Course name	PHYSICS I
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Code	EDIF103	Semester	1	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	28	28	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	1. Mathematical Analysis 2. Special Mathematics 3. Differential Equations, Algebra and Mathematical Analysis
	recommended	Processing of experimental data

Objectives	<ul style="list-style-type: none"> - Presentation of the most important physical phenomena, emphasizing these phenomena with applications in Electronics and Information Technology - Helping the students to acquire competencies in performing measurements and processing the experimental data - Student learning of the fundamental laws of physics and their applications in technics - Presentation of some methods for evaluation the measurement accuracy using adequate computer programs
Content	<ol style="list-style-type: none"> 1. Introduction 2. Fundamental Principles of the Newtonian Mechanics 2. Mechanical Oscillations 3. Mechanical Waves 4. Theory of Relativity 5. Wave Optics

Course Grade		
Final evaluation	Examination	E
Grading Plan	Final evaluation through exam	70%
	Seminary activity	15%
	Laboratory activity	15%

Course holder	Title, first name, last name	Signature
	Lecturer GABRIELA APREOTESEI, PhD	

COURSE INFORMATION

Course name	Computer Programming and Programming Languages I
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Code	EDIF104	Semester	1	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	-

Objectives	<p>This course introduces students to the structure and operation of computers, to the analysis and design of computer algorithms, as well as to basic C Programming Language elements. Upon completion of this course, students will be able to do the following:</p> <ul style="list-style-type: none"> - Demonstrate a familiarity with major algorithms and data structures. - Write simple programs in C language
Content	<p>Intended for students with no computing background, the course provides an overview of hardware, software, memory, input/output, processors and storage. Algorithms development and structured programming are introduced. The C programming language is used to support the concepts of problem analysis and program design. Its main goal is to develop proficiency in C programming and to prepare the students for subsequent courses.</p>

Course Grade		
Final evaluation	Exam	E
Grading Plan	Exam	60%
	Laboratory	20%
	Project	0%
	Assignments	20%

Instructor	Title, first name, last name Prof. Adriana SÎRBU, PhD	Signature
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**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Computer-Aided Graphics
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Code	EDIF105	Semester	1	Credits	3
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	28	-	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Mathematics, Physics, Fundamentals of Electrical Engineering
	recommended	Electronic Devices and Circuits

Objectives	The purpose of discipline is to familiarize students with techniques to use desktop publishing programs and programs devoted to the printed wiring.
Content	- Microsoft Office - OrCAD

Course Grade		
Final evaluation	colloquim	C
Grading Plan	Laboratory	100%
	Project	
	Assignments	

Instructor	Title, first name, last name	Signature
	Lecturer Tecla Castelia Goras	

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Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	ENGLISH I ADVANCED LEVEL
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Code	EDIC106	Semester	I	Credits	1
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	All	Total	C	S	L	P
Specialization	All	14	-	14	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	
	recommended	

Objectives	The main objectives consist in developing various abilities, in accordance with the Common European Framework of Reference for Languages. By the end of the course the students will be able to <ul style="list-style-type: none"> - express in a fluent manner different attitudes, opinions, feelings and give arguments, reasons, details to support their point of view - use language effectively for social and academic purposes - understand complex reading/listening texts - summarize the information from reading/ listening texts - produce clear and well-structured texts on complex subjects, using various organizational patterns and cohesive devices
Content	<p>Interesting Lives Interviews It's a long story Against the odds</p> <p>Personal Tastes Makeovers Fashion Personal style</p> <p>World Cultures Traditional things Manners Proverbs</p> <p>Socializing Party time We've got to get going Social style</p> <p>Consolidation</p>

Course Grade		
Final evaluation	Collocutional examination	C 50%
Grading Plan	Coursework	25%
	Continuous assessment	25%

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Lecturer	Title, first name, last name	Signature
	Associate Professor Nicoleta -Mariana IFTIMIE, PhD	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	PHYSICAL TRAINING AND SPORT 1
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Code	EDIC107	Semester	1	Credits	1
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	14	-	-	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	-

Objectives	<ul style="list-style-type: none"> The encrease of physical and intellectual capacity The emprovement of basic movement ability The inducement of independent practice of the exercise Teaching of basic notions regarding the rules of sportive competition
Content	<ul style="list-style-type: none"> To identify the structural and functional purpose of physical exercise, basic mean in physical education; To identify the proper means of developing physical activity; To know the meaning of specialty documents in organizing the learning process To individualize the physical effort based on particularities, options and preferences; To identify actions and to dose the physical means used depending on the team To adapt the possessed materials to the student groups and working methodology.

Course Grade		
Final evaluation	Evaluation during the semester	VP
Grading Plan	Exam	
	Laboratory	50%
	Project	50%
	Assignments	

Instructor	Title, first name, last name	Signature
	Lector drd. Abălașei Cătălin Petronel	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Mathematical Analysis II
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Code	EDIF108	Semester	2	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Algebra. Mathematical Analysis I
	recommended	Integral calculus from secondary school

Objectives	To study integrals and their applications . To generalize integrals, like improper integrals or multiple integrals To study differential equations.
Content	Indefinite Integrals. Definite Integrals. Improper Integrals. Parameter Integrals. Euler Integrals. Multiple Integrals. Line Integrals and Surface Integrals. Green’s Formula. Gauss-Ostrogradsky Formula. Stokes Formula. Vector Fields. Vector Fields. Differential Equations. First Order Differential Equations. Linear Equations.

Course Grade		
Final evaluation	<i>Exam</i>	E
Grading Plan	Seminary activity	20%
	<i>Exam</i>	30%
	Mid term (written paper)	50%

Instructor	Title, first name, last name Assoc. Prof. PhD. Liliana Popa	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Special Mathematics
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Code	EDIF109	Semester	2	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	School textbooks: Mathematical Analysis, Algebra, Trigonometry
	recommended	Calculus, Analytic Geometry, Linear ordinary differential equations

Objectives	<ul style="list-style-type: none"> To introduce functions of a complex variable, define concepts as continuity, differentiability, analyticity, line integral, singular points. To introduce Fourier Series and their applications. To introduce Fourier Integral and their applications. To introduce students to the Laplace transform method for solving linear ordinary differential equations. To introduce students to the Z-transform method for solving linear difference equations. To introduce students to the second order partial differential equations. To introduce students to some equations of Physical Mathematics.
Content	<ul style="list-style-type: none"> Function of a complex variable, continuity, differentiability, analyticity, line integral, singular point. Fourier Series. Fourier Integral. Laplace transform, linear ordinary differential equation. Z-transform, linear difference equation. Second order partial differential equations. Equations of Physical Mathematics.

Course Grade		
Final evaluation	Exam	E
Grading Plan	Continuous evaluation (Seminar activity)	10%
	Semester test	10%
	The final evaluation (Written Exam)	80%

Instructor	Title, first name, last name	Signature
	Lecturer dr. Silvia – Otilia Corduneanu	

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C O U R S E I N F O R M A T I O N

Course name	PHYSICS II
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Code	EDIF110	Semester	2	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	42	28	-	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	3. Mathematical Analysis 4. Special Mathematics 3. Differential Equations, Algebra and Mathematical Analysis
	recommended	Processing of experimental data

Objectives	<ul style="list-style-type: none"> - Presentation of the most important physical phenomena, emphasizing these phenomena with applications in Electronics and Information Technology - Helping the students to acquire competencies in performing measurements and processing the experimental data - Student learning of the fundamental laws of physics and their applications in technics - Presentation of some methods for evaluation the measurement accuracy using adequate computer programs
Content	1. Electromagnetic field. Electromagnetic waves 2. Quantization and dual nature of the matter 3. Quantum mechanics elements 4. Quantum electronics 5. Condensed-matter physics

Course Grade		
Final evaluation	Colloquim	C
Grading Plan	Final evaluation through exam	80%
	Laboratory activity	20%

Course holder	Title, first name, last name	Signature
	Lecturer GABRIELA APREOTESEI, PhD	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Fundamentals of Electrical Engineering
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Code	EDID111	Semester	2	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	84	42	28	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	<ul style="list-style-type: none"> Mathematical analysis Mathematical algebra Computing

Objectives	<ul style="list-style-type: none"> To provide a broad introduction of fundamental concepts, principles and analysis techniques of electrical DC, AC and transient circuits to enable higher level study in the subject.
Content	<ul style="list-style-type: none"> Fundamentals of DC circuit analysis. Network theorems . Fundamentals of AC circuits. Application of phasors. Application of complex numbers Time-dependent response of R-C, R-L and R-L-C circuits Analysis techniques of three-phase circuits. Filters and resonant circuits Electrical power Analysis techniques of transient circuits.

Course Grade		
Final evaluation	Exam	E
Grading Plan	Exam	50%
	Laboratory	20%
	Project	0%
	Assignments	30%

Instructor	Title, first name, last name	Signature
	Conf.dr.ing. Iustina ZAHARIA	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Computer Programming and Programming Languages II
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Code	EDIF112	Semester	2	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	PCLP I
	recommended	-

Objectives	The course provides essentials of data structures and special programming techniques with emphasis on numerical methods applied in electronic engineering. Students should be familiar with the C language basics. Upon completion of this course, students will be able to do the following: - Demonstrate a familiarity with major data structures specific for C Language. - Write complex projects in C language - Use the C Standard Library
Content	pointers, memory allocation, structures and user defined types, files, numerical methods, sorting and searching techniques, optimization methods

Course Grade		
Final evaluation	Colloquium	C
Grading Plan	Colloquium	50%
	Laboratory	30%
	Project	-
	Assignments	20%

Instructor	Title, first name, last name Prof. Adriana SÎRBU, PhD	Signature
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**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Electronic Materials, Passive Devices and Circuits
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Code	EDID113	Semester	2	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronics Engineering and Telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	
	recommended	

Objectives	To develop theoretical and practical ability required to analyse and design fundamental electronic passive circuits; to achieve the fundamental knowledges of electronic materials fabrication and utilisation.
Content	Electronic materials Passive electronic devices Passive electronic circuits

Course Grade		
Final evaluation	Exam	E
Grading Plan	Exam	60%
	Laboratory	40%
	Project	
	Assignments	

Instructor	Title, first name, last name PhD Lecturer Liviu Țigăeru	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	ENGLISH II ADVANCED LEVEL
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Code	EDIC114	Semester	II	Credits	1
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	All	Total	C	S	L	P
Specialization	All	14	-	14	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	ENGLISH I ADVANCED LEVEL
	recommended	

Objectives	The main objectives consist in developing various abilities, in accordance with the Common European Framework of Reference for Languages. By the end of the course the students will be able to <ul style="list-style-type: none"> - express in a fluent manner different attitudes, opinions, and give arguments, reasons, details to support their point of view - use language effectively for social, academic and professional purposes - acquire and use technical vocabulary - understand and extract relevant information from ESP texts produce a variety of clear and well-structured texts on technical and academic subjects, using various organizational patterns and cohesive devices: instructions, formal letters, memos, academic essays
Content	Units : Computers Virtual Reality Systems Systems Software High Tech and Higher Education Robotics What Is a Robot? Robosaurus Will Robots Take Over Everything?

Course Grade		
Final evaluation	Collocutional examination	C 50%
Grading Plan	Coursework	25%
	Continuous assessment	25%

Instructor	Title, first name, last name	Signature
	Associate Professor Nicoleta -Mariana IFTIMIE, PhD	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	PHYSICAL TRAINING AND SPORT 2
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Code	EDIC115	Semester	2	Credits	1
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	14	-	-	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	-

Objectives	<ul style="list-style-type: none"> The encrease of physical and intellectual capacity The emprovement of basic movement ability The inducement of independent practice of the exercise Teaching of basic notions regarding the rules of sportive competition
Content	<ul style="list-style-type: none"> To identify the structural and functional purpose of physical exercise, basic mean in physical education; To identify the proper means of developing physical activity; To know the meaning of specialty documents in organizing the learning process To individualize the physical effort based on particularities, options and preferences; To identify actions and to dose the physical means used depending on the team To adapt the possessed materials to the student groups and working methodology.

Course Grade		
Final evaluation	Evaluation during the semester	VP
Grading Plan	Exam	
	Laboratory	50%
	Project	50%
	Assignments	

Instructor	Title, first name, last name	Signature
	Lector drd. Abălașei Cătălin Petronel	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	CAD Techniques for Electronics
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Code	EDOD116A	Semester	1	Credits	3
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Applied Electronics	42	14	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DE

Previous discipline	mandatory	----
	recommended	Physics, Devices and Circuits

Objectives	Knowledge of the main aspects of electric components and design of simple systems for power supply electronic circuits; Study the principles of operation for design; Familiarization with the main simple components, circuits and power supply sources;
Content	Stationary Electric Current. Electric current in metal conductors. Electric circuit. Electric current intensity. Laws of the electric current. Electric voltage. Electromotor voltage. Resistance. Resistivity. Ohm's law. Kirchhoff's laws. Group resistors. Group capacitors. Semiconductors. Load carrier in semiconductors. Conductors, isolators, semiconductors. Intrinsic semiconductors. Electric conductivity in semiconductors. Energetically bands structure. p-n junction. Physical processes in p-n junction. Static characteristic for p-n junction. Types of semiconductor diodes. Bipolar transistor. Static characteristics. Temperature influence. Conclusions.

Course Grade		
Final evaluation	Colloquim	C
Grading Plan		50%
	Laboratory	25%
	Project	--
	Assignments	25%

Instructor	Title, first name, last name	Signature
	Assist. Prof. Liliana Vornicu, PhD	

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Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	ROMANIAN LANGUAGE 1
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Code	EDLC117	Semester	1	Credits	2
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Domain	Electronics and Telecommunications Engineering	Total	C	S	L	P
Specialization	Telecommunications Technologies and Systems in English	28	-	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DL

Previous discipline	mandatory	
	recommended	

Objectives	This is a course in basic Romanian language intended for students with no previous knowledge of Romanian, designed for use at the college level. Since the main emphasis is on <i>communication</i> , <i>grammar</i> is introduced in the context of all four communication skills – <i>listening</i> , <i>speaking</i> , <i>reading</i> and <i>writing</i> . By the end of the course students will be able to: <ul style="list-style-type: none"> - use language effectively for social and academic purposes - understand reading/ listening texts - summarise and produce simple texts.
Content	The course presents all the basic grammatical structures of the Romanian language along with the basic vocabulary and additional structural and grammatical exercises. Another important emphasis is that of teaching language through culturally conditioned situations giving students the opportunity to use the language in real-life situations.

Course Grade		
Final evaluation	Exam Oral examination	C 50%
Grading Plan	Continuous assessment	50%

Lecturer	Title, first name, last name	Signature
	Associate Professor Constanta AVADANEI, PhD	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	ROMANIAN LANGUAGE 2
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Code	EDLC118	Semester	2	Credits	2
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Domain	Electronics and Telecommunications Engineering	Total	C	S	L	P
Specialization	Telecommunications Technologies and Systems in English	28	-	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DL

Previous discipline	mandatory	
	recommended	

Objectives	This is a course in basic Romanian language intended for students with no previous knowledge of Romanian, designed for use at the college level. Since the main emphasis is on <i>communication</i> , <i>grammar</i> is introduced in the context of all four communication skills – <i>listening</i> , <i>speaking</i> , <i>reading</i> and <i>writing</i> . By the end of the course students will be able to: <ul style="list-style-type: none"> - use language effectively for social and academic purposes - understand reading/ listening texts - summarise and produce simple texts.
Content	The course presents all the basic grammatical structures of the Romanian language along with the basic vocabulary and additional structural and grammatical exercises. Another important emphasis is that of teaching language through culturally conditioned situations giving students the opportunity to use the language in real-life situations.

Course Grade		
Final evaluation	Exam Oral examination	C 50%
Grading Plan	Continuous assessment	50%

Lecturer	Title, first name, last name	Signature
	Associate Professor Constanta AVADANEI, PhD	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Electronic Devices
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Code	EDID201	Semester	3	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Engineering in Electronics and Telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Physics, Materials and passive components and circuits, Fundamentals of electrical engineering
	recommended	

Objectives	<ul style="list-style-type: none"> Introducing of basic knowledge on the construction and operation of the main devices; The study of the static and dynamic (small signal and large signal) operating conditions of the usual devices and their switching behavior, emphasizing the parameters by which they are characterized; The study of the theoretical and practical aspects of modeling of semiconductor devices including their non-ideal behavior; The presentation of some devices using examples that highlights the correlation between the devices characteristics and the circuits performances, focusing on analysis and design of basic amplifier stages
Content	I. Introduction II. General Properties of the Electronic Devices III. Semiconductor Diode IV. Bipolar Junction Transistors (BJT) V. Physical Processes in p-n Junction and BJT VI. Field Effect Transistors (FET) VII. The Switching Regime of the Semiconductor Devices VIII. Other semiconductor devices and applications

Course Grade		
Final evaluation	Exam (written test with two theoretical issues and two problems)	E 50%
Grading Plan	Laboratory and seminar activity	30%
	Project	-
	Mid-term test (written test with two theoretical subjects and a problem)	20%

Instructor	Title, first name, last name	Signature
	Associate Professor Mihail FLOREA, Ph.D.	

**Dean,
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Signals, Circuits and Systems 1
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Code	EDID202	Semester	3	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Mathematics, Physics, Fundamentals of Electrical Engineering
	recommended	Electronic Devices and Circuits

Objectives	<ul style="list-style-type: none"> - Presentation of the basic principles used in signal, circuits and systems modelling, and analysis. - Presentation of the principles of analysis of analog and discrete signals, circuits and systems and their relationships. - Presentation of specific methods of circuit and system analysis. - Presentation of basic principles for temporal and spectral analysis. - Circuit analysis at the level of device and functional blocks. - Linear filters response and orthogonal transforms
Content	<ul style="list-style-type: none"> - From physical realities to models - Classification of signals, circuits and systems - Circuit and systems elements, analog and discrete signals. - Linear circuit analysis; response computing in time and frequency domains. - Laplace and Fourier transforms. - Discrete signals and systems - Z transform, discrete Fourier transform and series - Discrete simulation of analog systems - Discrete Fourier Series and Fast Fourier Transform algorithm

Course Grade		
Final evaluation	Exam	E
Grading Plan	Laboratory	20%
	Project	
	Assignments	

Instructor	Title, first name, last name Professor Liviu Goras	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Electrical and Electronic Measurements
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Code	EDID203	Semester	3	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	“Physics”, “Electronic Materials, Passive Devices and Circuits”, “Basics of Electrotechnics”.

Objectives	The aim of this course is to introduce the concept of measurement and the related instrumentation aspects as a vital ingredient of electronics and telecommunications engineering. The following major topics will be covered by the course: basic measurement concepts; analog instruments; bridge measurements; digital instruments; data acquisition systems.
Content	Basics of measurement, Analog DC and AC meters, Bridge measurements, Digital instruments, Oscilloscope (Cathode Ray Oscilloscope, Digital Storage Oscilloscope), Signal generators and analyzers, Data acquisition systems.

Course Grade		
Final evaluation	Exam	E
	Evaluation requirements for E / C: 1. Theme development, weight 40 % 2. Problem solving, weight 40 % 3. Knowledge test questions, weight 20 %	
Grading Plan	Exam	65%
	Laboratory	15%
	Project	10%
	Assignments	10%

Instructor	Title, first name, last name	Signature
	Lecturer Dr. Eng. Eduard Lunca	

Dean
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COURSE INFORMATION

Course name	Object Oriented Programming
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Code	EDID204	Semester	3	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	14	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	PCLP I, PCLP II
	recommended	-

Objectives	<p>This course introduces students to the object oriented programming paradigm, using C++ Upon completion of this course, students will be able to do the following:</p> <ul style="list-style-type: none"> - Write complex programs in C++ language - Use the Standard Template Library basic components
Content	<p>Abstract data types, constructors, destructors, operator overloading, inheritance, polymorfism, I/O streams, templates, exceptions, generic programming, Standard Template Library</p>

Course Grade		
Final evaluation	Colloquium	C
Grading Plan	Colloquium	50%
	Laboratory	20%
	Project	30%
	Assignments	-

Instructor	Title, first name, last name Prof. Adriana SÎRBU, PhD	Signature
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**Dean
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C O U R S E I N F O R M A T I O N

Course name	INFORMATION THEORY						
Code	EDID 205	Semester	3	Credits	4		
Faculty	Electronics, Telecommunications and Information Technology		Number of hours				
Profile	Electronic		Total	C	S	L	P
Specialization	Applied Electronics and Intelligent Systems, Telecommunications Systems and Technologies, Microelectronics and Nanotechnologies		56	28	-	28	-
Category							
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical						DT	
Optionality							
DM – mandatory, DE –elective, DL –facultative						DM	
Previous discipline	mandatory						
	recommended	Mathematics					
Objectives	To introduce fundamentals of discrete sources and information measure; To present discrete channels; To develop source encoding techniques for noiseless channels; To know unique decipherable codes of variable length; To present basics of source coding for noisy channels.						
Content	discrete sources, entropy, communication channels, conditional entropies, coding for noiseless and noisy channels.						
Course Grade							
Final evaluation	Exam					E	
1. paper ; tasks: 1 problem, 2 theory topics; working time: 2 hours;							
Grading Plan	Exam					75%	
	Laboratory					25%	
	Project						
	Assignments						
Instructor	Title, first name, last name					Signature	
	Prof. Daniela Tarniceriu, PhD						

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	PHYSICAL TRAINING AND SPORT 3
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Code	EDIC206	Semester	3	Credits	1
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	14	-	-	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	-

Objectives	<ul style="list-style-type: none"> The encrease of physical and intellectual capacity The emprovement of basic movement ability The inducement of independent practice of the exercise Teaching of basic notions regarding the rules of sportive competition
Content	<ul style="list-style-type: none"> To identify the structural and functional purpose of physical exercise, basic mean in physical education; To identify the proper means of developing physical activity; To know the meaning of specialty documents in organizing the learning process To individualize the physical effort based on particularities, options and preferences; To identify actions and to dose the physical means used depending on the team To adapt the possessed materials to the student groups and working methodology.

Course Grade		
Final evaluation	Evaluation during the semester	VP
Grading Plan	Exam	
	Laboratory	50%
	Project	50%
	Assignments	

Instructor	Title, first name, last name	Signature
	Lector drd. Abălașei Cătălin Petronel	

**Dean
Prof. Ion Bogdan, PhD**

C O U R S E I N F O R M A T I O N

Course name	Fundamental Electronic Circuits
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Code	EDID207	Semester	4	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Engineering in Electronics and Telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	84	42	-	28	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Materials and passive components and circuits, Fundamentals of electrical engineering, Electronic devices, Computer-aided analysis of electronic circuits
	recommended	

Objectives	<ul style="list-style-type: none"> Introducing of basic knowledge on the operating principles of some important classes of electronic circuits and their characterization; The study of the design and analysis techniques and the initiation in some categories of electronic circuits design; The presentation of the theoretical and practical aspects of the performances evaluation of the electronic circuits
Content	I. Introduction II. Review of the Electronic Devices and of the Basic Single Stage Amplifiers III. Electronic Amplifiers IV. DC Voltage Regulators V. Harmonic Oscillators

Course Grade		
Final evaluation	Exam (oral examination with two theoretical issues and two problems; for solving problems, the students may use any material they want)	E 50%
Grading Plan	Laboratory	10%
	Project	20%
	Mid-term test (written test with two theoretical subjects and a problem)	20%

Instructor	Title, first name, last name Associate Professor Mihail FLOREA, Ph.D.	Signature
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**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Signals, Circuits and Systems 2
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Code	EDID208	Semester	4	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Signals, Circuits and Systems 1
	recommended	Electronic Devices

Objectives	<ul style="list-style-type: none"> - Time and frequency analysis of modulated signals; - Understanding of feedback systems stability; - State space characterization of linear, time-invariant systems; - Approximation and implementation of linear circuits transfer functions.
Content	<ul style="list-style-type: none"> - modulated signals; - analog filter response to modulated signals; - Nyquist and root locus stability criteria; - state equations deduction analysis and implementation; - linear filter synthesis.

Course Grade		
Final evaluation	Exam	E
Grading Plan	Written test	80%
	Laboratory	20%
	Project	
	Assignments	

Instructor	Title, first name, last name	Signature
	Prof. Victor GRIGORAŞ, PhD	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Digital Integrated Circuits
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Code	EDID209	Semester	4	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	-	84	42	-	28	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	Electronic Devices

Objectives	Presentation of digital IC families, design of logic circuits and applications
Content	Logic functions : representations models, canonical forms, minimization, implementation with standard cells. Synthesis and analysis of combinational and sequential logic circuits : Mux/Demux, Decoders/Encoders, Comparators, Adders/Subtractors, ALUs, Latches, Flip-Flops, Finite State Machines, Counters, Registers.

Course Grade		
Final evaluation	Exam	E
Grading Plan	Final test	60%
	Laboratory	20%
	Project	10%
	Assignments	10%

Instructor	Title, first name, last name Associate prof. Damian Imbrea, PhD	Signature

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	DATABASES
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Code	EDID210	Semester	4	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunication Technologies and Systems	42	28	-	-	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	-

Objectives	1. Knowledge of the fundamentals and terminology of databases 2. Study of the specific elements of a relational database 3. Knowledge of SQL 4. Practical competencies building in database design, implementation and testing 5. Applicative competencies in SQL programming
Content	Chapter I. Fundamentals and terminology of databases Chapter II. Specific elements of a database Chapter III. Entity-Relation Diagram Chapter IV. Data Modeling Chapter V. Finalizing the Database Design Process Chapter VI. Structured Query Language

Course Grade		
Final evaluation	Colloquy	C
Grading Plan	Final evaluation: Theory quiz	20 %
	Project	60 %
	Laboratory	20 %
Instructor	Title, first name, last name	Signature
	Assoc. Prof. Dr.Eng. Luminița SCRIPCARIU	

C O U R S E I N F O R M A T I O N

Course name	DIGITAL SIGNAL PROCESSING
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Code	EDID211	Semester	4	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Applied Electronics and Intelligent Systems, Telecommunications Systems and Technologies	70	42	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	mathematics, signals and systems, information theory
	recommended	

Objectives	<ul style="list-style-type: none"> - Understand how digital to analog (D/A) and analog to digital (A/D) converters operate on a signal and be able to model these operations mathematically; - Analyse discrete signals and systems in time, Z and frequency domain; - Use Z and Fourier transforms to analyze a digital system; - Design and implement simple finite impulse response (FIR) filters; - Design and implement simple infinite impulse response (IIR) filters; - Define and use Discrete Fourier Transform (DFT).
Content	<ul style="list-style-type: none"> - Discrete-time signals and systems; Time series; - The z-transform; Forward z-transform; Inverse z-transform; Causal and noncausal signals. - Input/output relationships; Transfer functions and frequency response; Difference equations. - Sampling; Relationship between continuous and discrete time domains; A/D, D/A conversion. - Discrete Fourier Transform; FFT algorithm. - IIR filter design; Pole transformation; Impulse invariance; Bilinear transformation. - FIR filter design; Window method; Frequency sampling method.

Course Grade		
Final evaluation	Exam 1. paper ; tasks: 2 problems, 2 theory topics; working time: 2 hours;	60%
Grading Plan	Laboratory	20%
	Project	
	Assignments	20%

Instructor	Title, first name, last name Prof. Daniela Tarniceriu, PhD	Signature
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COURSE INFORMATION

Course name	THEORY OF PROBABILITY						
Code	EDOF212A	Semester	3	Credits	5		
Faculty	Electronics, Telecommunications and Information Technology		Number of hours				
Profile	Electronic		Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies		56	28	28	-	-
Category							DF
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical							
Optionality							DE
DM – mandatory, DE –elective, DL –facultative							
Previous discipline	mandatory	Algebra, Calculus					
	recommended	Mathematical Analysis I, II					
Objectives	To give an introductory treatment of the basic probabilistic rules To apply them to statistics and computer engineering. To carry out analysis to computer engineering						
Content	1 The Axioms of Probability 2 Random Variables 3 Basic Reliability Calculations 4 Multiple Random Variables 5 Characteristic Values of Random Variables 6 Random Processes 7 Statistics						
Course Grade							
Final evaluation	<i>Exam</i>						E
Grading Plan	Seminary activity						20%
	<i>Exam</i>						30%
	Mid-term written paper						50%
Instructor	Title, first name, last name						Signature
	Assoc. Prof. PhD. Liliana Popa						

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Statistics
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Code	EDOF212B	Semester	3	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DF
Optionality DM – mandatory, DE –elective, DL –facultative	DE

Previous discipline	mandatory	Algebra, Calculus
	recommended	Mathematical Analysis I, II

Objectives	To give an introductory treatment of the basic probabilistic rules To apply them to statistics and computer engineering. To carry out analysis to computer engineering
Content	1 Basic Concepts from Theory of Probability 2 Random Variables 3 Sampling Distributions 4 Point Estimation 5 Interval Estimation 6 Hypothesis Testing 7 Linear Regression Models

Course Grade		
Final evaluation	<i>Exam</i>	E
Grading Plan	Seminary activity	20%
	<i>Exam</i>	30%
	Mid-term written paper	50%

Instructor	Title, first name, last name	Signature
	Assoc. Prof. PhD. Liliana Popa	

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COURSE INFORMATION

Course name	Training
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Code	EDID213	Semester	4	Credits	3
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies				120h	

Category FD – fundamental, TD- technical, SD – specialization, DE – economic/managerial, DC classical	SD
Optionality DM – mandatory, DE –elective, DL –facultative	MD

Previous discipline	mandatory	-
	recommended	Electronic Devices, Fundamental Electronic Circuits Signals, Circuits and System 1 and 2

Objectives	<ul style="list-style-type: none"> - Developing a systemic approach in circuit analysis and signal processing areas; - Stressing the similarity between the signal characterizing analog and discrete circuits; - Device-level and functional block-level circuit analysis; - Practicalities in using dedicated simulation packages; - Presentation of the specific technologies and equipments.
Content	<ul style="list-style-type: none"> - Analog circuits simulation and transient analysis using dedicated software as for example Spice-type or symbolic-type calculus packages; - Digital circuits simulation and transient analysis using dedicated software as for example Matlab/Simulink or symbolic-type calculus packages;

Course Grade		
Final evaluation	Verification	V
Grading Plan	Final test	80%
	Laboratory	
	Project	
	Assignments	20%

Instructor	Title, first name, last name	Signature
	Teach. assist. Daniel Matasaru	

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COURSE INFORMATION

Course name	ROMANIAN LANGUAGE 3
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Code	EDLC213	Semester 3		Credits	2
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Domain	Electronics and Telecommunications Engineering	Total	C	S	L	P
Specialization	Telecommunications Technologies and Systems in English	28	-	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DL

Previous discipline	mandatory	
	recommended	

Objectives	The main objectives of the course consist in mastering both <i>the active and the passive skills</i> with emphasis on <i>encoding and transmitting messages</i> in fluent Romanian. By the end of the course, the students will be able to: <ul style="list-style-type: none"> - express opinions, feelings attitudes in Romanian - to use Romanian both for social and academic purposes - to understand and summarise technical texts.
Content	The course presents technical texts in Romanian along with the basic technical vocabulary and additional structural and grammatical exercises. Each course consists of an input technical text with structures and functions needed to carry out a number of practice tasks. The material used are interesting and challenging and the activities stimulating.

Course Grade		
Final evaluation	Exam Oral examination	C 50%
Grading Plan	Continuous assessment	50%

Lecturer	Title, first name, last name	Signature
	Associate Professor Constanta AVADANEI, PhD	

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Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	ROMANIAN LANGUAGE 4
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Code	EDLC218	Semester 4		Credits	2
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Domain	Electronics and Telecommunications Engineering	Total	C	S	L	P
Specialization	Telecommunications Technologies and Systems in English	28	-	28	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DL

Previous discipline	mandatory	
	recommended	

Objectives	The main objectives of the course consist in mastering both <i>the active and the passive skills</i> with emphasis on <i>encoding</i> and <i>transmitting messages</i> in fluent Romanian. By the end of the course, the students will be able to: <ul style="list-style-type: none"> - express opinions, feelings attitudes in Romanian - to use Romanian both for social and academic purposes - to understand and summarise technical texts.
Content	The course presents technical texts in Romanian along with the basic technical vocabulary and additional structural and grammatical exercises. Each course consists of an input technical text with structures and functions needed to carry out a number of practice tasks. The material used are interesting and challenging and the activities stimulating.

Course Grade		
Final evaluation	Exam Oral examination	C 50%
Grading Plan	Continuous assessment	50%

Lecturer	Title, first name, last name	Signature
	Associate Professor Constanta AVADANEI, PhD	

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Prof. Ion Bogdan, PhD**

C O U R S E I N F O R M A T I O N

Course name	Analog Integrated Circuits
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Code	EDID301	Semester	5	Credits	6
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Engineering in Electronics and Telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	84	42	-	28	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Electronic Devices, Fundamental Electronic Circuits and Signals, Circuits and Systems
	recommended	

Objectives	<ul style="list-style-type: none"> The course introduces concepts and applications based on fundamental amplifiers types and their applications; The study of the circuits implementationa, performances, analysis and design for each fundamenatal amplifier type; The study of the theoretical and practical aspects of applications with basic amplifier types in analog systems; The course present highlights correlations betwin amplifier type, practcal device limitations and applications performances; The course present design-oriented analog applications based design specifications and insist for their functional undersuding.
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Content	I. Elementary stage with transistors, II. Fundamental amplifiers types, III. Elementary applications with fundamental amplifiers, IV. Converters, V. Signal generators, VI. Voltage references and regulators, VII. Nonlinear applications, VIII. Phase Locked loop.
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Course Grade		
Final evaluation	Exam (written test with three theoretical issues and five problems)	E 40%
Grading Plan	Laboratory	10%
	Project	10%
	Mid-term test (written test with two theoretical subjects and a problem)	40%

Instructor	Title, first name, last name Associate Professor Neculai Cojan, Ph.D.	Signature
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**Dean,
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	DECISION AND ESTIMATION IN DATA PROCESSING
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Code	EDID302	Semester	5	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	14	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	
	recommended	Coding theory

Objectives	To develop fundamentals of group codes; To present cyclic codes, including coding and decoding based on multiplication and division circuits; To present statistical properties of random signals; To present the topics of signal detection; To apply decision criteria both for discrete and continuous observation.
Content	Group codes, syndrome, parity check symbols, cyclic codes, random signals, detection, Bayes' rule, sufficient statistic.

Course Grade		
Final evaluation	Exam 1. paper ; tasks: 1 problem, 2 theory topics; working time: 2 hours;	75%
Grading Plan	Laboratory	25%
	Project	
	Assignments	

Instructor	Title, first name, last name Prof. Daniela Tarniceriu, PhD	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	FUNDAMENTALS OF RADIOCOMMUNICATIONS
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Code	EDIS303	Semester	5	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronics and telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	
	recommended	electronic devices and circuits, electronic circuits and systems

Objectives	The course is intended to offer knowledge on radio-communication systems analysis and design. To provide students knowledge on the structure of radio-communication systems. To provide students knowledge to develop and design radio-communication equipments and systems. To provide students the necessary skills to use a computer simulation program for designing electronic circuits used in radio-communication systems implementation.
Content	radio transmitters and receivers, antenna, RF power amplifiers, frequency synthesis

Course Grade			
Final evaluation	Type (E - exam, C - colloquy, VP)		E
	Evaluation by exam (E): 1. Written evaluation, problems; requirements: solving; Working conditions: written, (50%); 2. Oral evaluation, verification of theoretical knowledge; requirements: solving; oral, (50%);		
Grading Plan	Final evaluation by exam (E)		70%
		Laboratory	30%
		Project	1
		Assignments	2

Instructor	Title, first name, last name	Signature
	Professor assistant eng. Radu Gabriel Bozomitu, PhD	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Computer-Aided Design of Electronic Circuits
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Code	EDID304	Semester	5	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	Algebra, Electrical Fundamentals, Electronic devices, Signal circuits and systems 1

Objectives	This course is intended to offer basic knowledge of computer-aided analysis and design of electronic circuits by using appropriate device models, computationally efficient algorithms and simulation tools. Topics to be covered include: principle of device modeling, formulation of circuit equations, sparse matrix algorithms for the solution of large systems, algorithms for dc and transient analysis. The lab includes practical issues of the analog circuit analysis using a general purpose simulation tool (SPICE).
Content	Simulation models of electronic components and devices, electrical network topology, computer formulation of the equations for linear and nonlinear networks, algorithms and computational methods for circuit analysis.

Course Grade		
Final evaluation	Exam	E
Grading Plan	Exam	60%
	Laboratory	15%
	Project	0%
	Assignments	25%

Instructor	Title, first name, last name Assoc. prof. Danut BURDIA, PhD	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	FUNDAMENTALS OF TELECOMMUNICATIONS
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Code	EDIS305	Semester	5	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunication Technologies and Systems	56	28	14	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	Algebra, Signals, Circuits and Systems, Electronic Devices and Components, Digital Integrated Circuits

Objectives	<ol style="list-style-type: none"> 1. Knowledge of fundamentals and terminology of telecommunications 2. Study of the data coding techniques 3. Competencies building for data coding algorithms implementation 4. Knowledge of the analogue and digital modulation techniques 5. Knowledge of the types, characteristics and perturbations of the communication channel 6. Study of the radiocommunication link 7. Practical competencies building in radio link design 8. Applicative competencies in communication techniques simulation
Content	<p>Chapter I. Telecommunication Systems Principles. Signal Sources</p> <p>Chapter II. Data Coding Techniques (compression, encryption, error-correction, translation)</p> <p>Chapter III. Principles and Analysis of the Modulation Techniques (AM, FM, PM, ASK, PSK, FSK, QAM, Spread Spectrum)</p> <p>Chapter IV. Communication Channel (transmission lines, wiring, radio-channel, antenna, optical channel)</p> <p>Chapter V. Specific Perturbations on Communication Channels (white noise, noise temperature, noise factor, fading, radiolink design)</p> <p>Chapter VI. Synchronization Principles on Telecommunications</p> <p>Chapter VII. Equalizers</p>

Course Grade		
Final evaluation	Colloquy	C
Grading Plan	Final evaluation :	60 %
	<ol style="list-style-type: none"> 1. Theory quiz 2. Solving two problems 	
	Laboratory Assignments	20 %
Instructor	Title, first name, last name	Signature
	Assoc. Prof. Dr.Eng. Luminița SCRIPCARIU	

C O U R S E I N F O R M A T I O N

Course name	Microwaves
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Code	EDID306	Semester	6	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Electrotechnic Bases
	recommended	-

Objectives	After the course the participants should be able to: <ul style="list-style-type: none"> Apply electromagnetc theory to calculations regarding waveguides and transmission lines Describe, analyse and design simple microwave circuits and devices e g matching circuits, couplers, antennas and amplifiers Describe and coarsely design common systems such as radar and microwave transmission links Describe common devices such as microwave vacuum tubes, high-speed transistors and ferrite devices Handle microwave equipment and be able to make measurements.
Content	Circuit theory; Waveguides; Scattering parameters; Impedance transformation; Matching; Antennas; Resonators; Passive and active microwave devices; Microwave communication systems; Radar; Microwave measurements

Course Grade		
Final evaluation	Exam	E
Grading Plan	Exam	50%
	Laboratory	10%
	Project	-
	Assignments	40%

Instructor	Title, first name, last name Nicolae LUCANU, PhD	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	ANTENNAS AND PROPAGATION
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Code	EDIS307	Semester	6	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Engineering in Electronics and Telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Fundamentals of electrotechniques Mathematical analysis Physics
	recommended	Information transmission and coding

Objectives	Learning basic principles of radiating structures radiante, parameters of fundamental types of antennas, and mathematical methods for their analysis
Content	Electromagnetic field, wire antennas, electrical dipole, horn antenna, radiation pattern, directivity, gain, cross area, reciprocity, polarised waves, linear arrays, polar diagram, polynomial method, Dolph-Tschebyshev array, Yagi antenna, microstrip antenna, measurement range, far field and near field measurements, wave propagation, surface wave, ionospheric transmissions, diversity

Course Grade		
Final evaluation	Exam	E 60%
Grading Plan	Laboratory	20%
	Project	20%
	Assignments	-

Instructor	Title, first name, last name Prof. Ion Bogdan, PhD	Signature
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**Dean,
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Computer Networks
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Code	EDIS308	Semester	6	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	14	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	Progamarea computers and programming languages

Objectives	1. Assimilation of basic concepts in terms of networking models used by international standards OSI and TCP / IP 2. Assimilation main functionalities used in networking hardware (NIC, switch, birdge, router, firewall) 3. Presenting a case study in terms of structured wiring as a basic element in the design of computer networks 4. Assimilation of basic concepts regarding the use of Windows and Linux operating systems; 5. Assimilation of basic concepts regarding the security of computer networks (issues NIDS - Network Intruders detection systems, secure communications methods - encryption algorithms); 6. Intelligent solutions in terms of Distributed Computing - genetic algorithms
Content	international standards OSI and TCP / IP, hardware used in networking, equipment (switches, birdge, router, firewall), Structured Cabling / Computer, Network Design, Windows and Linux operating systems, Computer network security, Encryption algorithms, Distributed Computing - genetic algorithms

Course Grade		
Final evaluation	Exam (Written examination, 60%)	E
Grading Plan	Laboratory	20%
	Project	20%
	Assignments	-

Instructor	Title, first name, last name	Signature
	Conf.dr.ing. Adrian Brezulianu	

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Electronic Equipments
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Code	EDIS309	Semester	6	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	14	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	----
	recommended	Physics, Devices and Circuits

Objectives	Introduced to key aspects of non-electric quantities measurement techniques; Study the principles of operation of the transducer; Familiarity with basic methods of analog signal processing, application pending; Understand the numerical techniques in non-electric systems for measuring quantities.
Content	General characteristics. Transducers. EAMC specific blocks: A / D and D / A convertors, instrumentation amplifiers, isolation amplifiers, logarithmic amplifiers, guarding techniques, the protection of amplifiers, analog conversion circuits, analog multipliers, modulators and demodulators for measurement. Analog multiplexing. Sample-Hold circuits. Data acquisition systems: Generalities; mono acquisition systems, multichannel acquisition systems, interfacing with the microprocessor.

Course Grade		
Final evaluation	Exam	E
Grading Plan		50%
	Laboratory	25%
	Project	25%
	Assignments	--

Instructor	Title, first name, last name	Signature
	Prof. Laurențiu Dimitriu, PhD	

**Dean
Prof. Ion Bogdan, PhD**

C O U R S E I N F O R M A T I O N

Course name	Communication Systems
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Code	EDID310	Semester	6	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DT
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Mathematical Analysis, Signals, Circuits and Systems, Introduction to Communications
	recommended	

Objectives	Acquiring knowledge about digital techniques used for signal transmission Presentation of calculation methods to assess the performance of the receiver Learning advanced coding/decoding and modulation/demodulation techniques Knowing the effects of perturbation that affect various communication channels Presentation of correction methods for the characteristics of received signal Presentation of methods and transmission techniques that are specific to the modern communication systems, performance assessment and improvement
Content	Digital transmission of analog signals, PCM, DPCM, Delta modulation, PDH, SDH, Baseband transmission, Nyquist criteria, Partial response signalling, Introduction to OFDM, Digital modulations: ASK, FSK, PSK, QPSK, M-PSK, QASK, QAM, MSK, TFM, Edge modulation, HPSK

Course Grade		
Final evaluation	Exam Written examination, 3 problems, 2 hours, open books, 60 %;	E
Grading Plan	Laboratory	20%
	Project	10%
	Assignments	10%

Instructor	Title, first name, last name	Signature
	Prof.dr.ing. Nicolae Dumitru ALEXANDRU	

**Dean
Prof. Ion Bogdan, PhD**

C O U R S E I N F O R M A T I O N

Course name	MICROPROCESSORS AND MICROCONTROLLERS
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Code	EDOD312A	Semester	5	Number of credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours per semester				
Field	Electronics, Telecommunications Engineering	Total	C	S	L	P
Specialization	Applied Electronics	56	28	-	28	-

Formative discipline Category : DF – fundamental, DID – in the field, DS – of specialty, DC – complementary	DID
Optional course Category DI – imposed, DO – optional, DL – free choice (optional)	DE

Previous Courses	Necessary	Electrical and electronic measurements; Signals, circuits and systems; Computers and languages programming
	Recommended	

Objectives	<ul style="list-style-type: none"> ▪ Introduction, deepening and systematization of knowledge about the various classes of microsystems - microcontrollers, microprocessors, DSP etc. ▪ Introduction, deepening and systematization of algorithms design and optimization for microcontrollers RISK of family PIC 16FX 17YXX. ▪ Presentation of power schemes and annex circuits to microcontrollers. ▪ Familiarize students with the development environment MPLAB™, with instructions of microcontroller PIC16F84, in order to use the memory and the I/O ports, and to implement assembler language microprojects.
Conținut (descriptori)	Microprocessor, DSP, microcontroller, CISC, RISC, Harvard architecture, program memory, data memory, data bus, ALU, accumulator register, special registers, interface, I/O ports, bank memory, interrupts, MPLAB development environment, instructions (transfer, arithmetic, rotate, conditional test, jump.), pre-processing directives, digital filters.

Evaluation system:			
Final evaluation*	E - exam, C - colloquium, VP - continuous evaluation of students' knowledge		50%
	Colloquium 50% - written test T		
Establishment of final note (percentages)	Colloquium		C
	evaluation*	Homeworks - type microproject (theoretical and practical) M	15%
		Tests [number 1-2] M	20%
		Standard Homework [number 2-3] CC	15%
*) For all forms of assessment are specified the type of evaluation: T - traditional, CC - with computer, M – mixt.			

Head of discipline	Academic degree, title, name, surname	Signature
	Prof. dr. Horia-Nicolai Teodorescu, m.c. A.R.	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course title	DIGITAL SIGNAL PROCESSORS AND APPLICATIONS
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Course Code	EDOD312B	Semester	5	Number of credits	4
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Faculty	of Electronics, Telecommunications and Information Technology	Number of hours per semester				
Field	Electronics, Telecommunications Engineering	Total	C	S	L	P
Specialization	Communications	56	28		28	

Formative discipline Category : DF – fundamental, DID – in the field, DS – of specialty, DC – complementary	DID
Optional course Category DI – imposed, DO – optional, DL – free choice (optional)	DO

Previous Courses	Necessary	Computers and languages programming; Digital circuits; Signals, circuits and systems; Digital Signal Processing
	Recommended	

Objectives	<ul style="list-style-type: none"> ▪ Introduction, deepening and systematization of knowledge on various classes of signal processing microsystems – DSP, specialized embedded systems, and GPUs. ▪ Introduction to DSPs: principles, architectures, levels (layers) of memory, examples; TI and Microchip DSP families as examples. ▪ Interfaces for DSPs and embedded systems – connecting to the real world (sensors, ADCs, DACs, PWM modules); external memory access; architectures ▪ Familiarize students with DSP programming ▪ Introduction to GPUs: principles, parallelism, architectures, programming; introduction to MPI and CUDA
Content (descriptors)	Specialized microprocessors, DSP, embedded system, GPU, multicore, architecture, registry, hardware multiplier, fast memories, cache, ADC, pipelining, interface, I/O ports, communication, protocols, digital filters, audio, video signal.

Evaluation system:			
Final evaluation*	E - exam, C - colloquium, VP - continuous evaluation of students' knowledge		50%
	Exam 50% - written test T		
Establishment of final note (percentages)	Final examination - written		
	evaluation*	Homeworks - microproject type (theoretical and practical) M	15%
		Tests [number 1-2] M	20%
Standard Homework [number 2-3] CC		15%	
*) For all forms of assessment are specified the type of evaluation: T - traditional, CC - with computer, M – mixt.			

Head of discipline	Academic degree, title, name, surname	Signature
	Prof. dr. Horia-Nicolai Teodorescu, m.c. A.R.	

COURSE INFORMATION

Course name	Automotive Electronics
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Code	EDOS313A	Semester	6	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Applied Electronics	42	28	-	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DE

Previous discipline	mandatory	----
	recommended	Physics, Devices and Circuits, Microcontrollers

Objectives	Acquiring specific knowledge of electronic control systems of automobiles. Preparation of specialists who can take a shock of high technology economic sectors with the highest rate of development and innovation, having one of the largest markets in the field of electronic systems. Romania's labor market is expanding in the area, find a large number of specialists required.
Content	Spark ignition engines. construction, characteristics, processes. Control structure for spark ignition engines. The electronic ignition. The electronic fuel injection sparkignition engines. Exhaust techniques. Electronic idle control. Braking control. Passive protection system with air bag and seat belt pre-tensioners. Cruise control system. Trip computer. Electronic control heating compartment. Heating systems and air conditioning with electronic control. Electronic systems for diesel engines.

Course Grade		
Final evaluation	Colloquium	C
Grading Plan	Final Examination	50%
	Laboratory	25%
	On-going tests	25%
	Assignments	--

Instructor	Title, first name, last name	Signature
	Prof. Laurențiu Dimitriu, PhD	

**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	Telecommunication Power Supplies
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Code	EDOS313B	Semester	6	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	42	28	-	14	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DE

Previous discipline	mandatory	Electronic Devices and Circuits, Analog Integrated Circuits
	recommended	Electrical Motors

Objectives	Assimilation of knowledge related to Industrial Electronics, graduates are trained to deal with new requirements in the field.
Content	The study and analysis of: power semiconductors, single-phase and three-phase controlled rectifiers, inverters, dc-dc converters.

Course Grade		
Final evaluation	Colloquium	C
Grading Plan	Exam	60%
	Laboratory	20%
	Project	-
	Assignments	20%

Instructor	Title, first name, last name Lecturer Ovidiu Ursaru, PhD	Signature
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COURSE INFORMATION

Course name	Training
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Code	EDID314	Semester	6	Credits	3
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies					

Category FD – fundamental, TD- technical, SD – specialization, DE – economic/managerial, DC classical	SD
Optionality DM – mandatory, DE –elective, DL –facultative	MD

Previous discipline	mandatory	-
	recommended	-

Objectives	Presentation of the production/reasearch unit specific technologies and equipments.
Content	<ul style="list-style-type: none"> - design of electronic and telecommunications equipments; - electrotechnic industry production management; - electronic and telecommunications equipments fabrication technology - equipment installation and setting to work - testing and debugging - metrology and control activities

Course Grade		
Final evaluation	Verification	V
Grading Plan	Final test	80%
	Laboratory	
	Project	
	Assignments	20%

Instructor	Title, first name, last name Teach. assist. Felix Diaconu	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Digital Communications
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Code	EDIS401	Semester	7	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	84	42	14	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Mathematical Analysis, Signals, Circuits and Systems, Introduction to Communications, Communication Systems
	recommended	

Objectives	Acquiring knowledge about digital techniques used for signal transmission Learning the advanced coding/decoding and modulation/demodulation techniques Knowing the effects of perturbations that affect the mobile communication channels Presentation of correction methods for the characteristics of received signal Presentation of methods and transmission techniques that are specific to the modern communication systems, performance assessment and improvement
Content	Probability distribution functions, Error probabilit, Digital receivers, Digital modulations, Fading, OFDM, Diversity Techniques, Space-time coding, Space-time block-, trellis- and layered codes

Course Grade		
Final evaluation	Exam Written examination, 3 problems, 2 hours, open books, 60 %;	E
Grading Plan	Laboratory	20%
	Project	10%
	Assignments	10%

Instructor	Title, first name, last name Prof.dr. Nicolae Dumitru Alexandru	Signature
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**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	MOBILE COMMUNICATIONS
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Code	EDIS402	Semester	7	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	-	14	14

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Communications’ basics Fundamentals of radiocommunications Communication systems
	recommended	Information theory Microwave techniques

Objectives	Learning cellular basic principles, parameters of mobile communication main standards (GSM, UMTS, HSPA, LTE), mobile channel models, and resource management principles
Content	Cellular networks, traffic models de trafic, Erlang B, mobile channel models, fading, diversity, multiple access, FDMA, TDMA, OFDMA, CDMA, resource managemen, QoS, GSM (architecture, radio channe, voice transmissions, data transmissions), HSCSD, GPRS, EDGE, UMTS, HSPA, cdmaOne, cdma2000, LTE, cellular network design techniques

Course Grade		
Final evaluation	Exam	E 60%
Grading Plan	Laboratory	30%
	Project	-
	Assignments	10%

Instructor	Title, first name, last name Prof. Ion Bogdan, PhD	Signature
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**Dean
Prof. Ion Bogdan, PhD**

COURSE INFORMATION

Course name	OPTICAL COMMUNICATIONS
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Code	EDIS403	Semester	7	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Communications’ basics Fundamentals of radiocommunications Communication systems
	recommended	Information theory Microwave techniques

Objectives	The purpose of the course is to provide basic knowledge in the fiber optic and optic cable communications, passive optic devices (couplers, switches, modulators, isolators, directional couplers) photo transmitters (LED, LASER), photo detectors (PIN diode, avalanche diode), projecting of an optic fiber link, optic amplifiers, communication networks on optic fiber.
Content	Electromagnetism, biasing and optic crystals, optic resonators, photo transmitters, photo detectors, optic switches and couplers, fiber optic communications, optic amplifiers, optic networks

Course Grade		
Final evaluation	Colloquium	C 2/3
Grading Plan	Laboratory	1/3
	Project	-
	Assignments	-

Instructor	Title, first name, last name Professor Irinel CASIAN BOTEZ	Signature
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Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	ELECTRONIC TECHNOLOGY
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Code	EDIS404	Semester	7	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic Engineering and Telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	-	28

Discipline category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optional category DC – compulsory, DE –elective, DL –facultative	DC

Previous discipline	compulsory	-
	recommended	Electronic circuits and devices; Signals, circuits and systems

Objectives	<ul style="list-style-type: none"> Students will cumulate theoretical and practical knowledge specific for the 'Electronics Technology' discipline Presenting of the manufacturing technologies for printed circuit boards; technological stage details Presenting of the PCB design tools Presenting of the compatibility rules for PCB Students training for an electrical scheme implementation at PCB level Students training for an optimal using of the on-line component catalogues Introduction of the new structures and technologies specific for the modern packaging: lead-free design, system-on-a-chip, system-on-a-package Presenting of the test methodology for the multi-layer PCB of a « system-on-package »; the CAD testing; automatic test equipment (ATE).
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Content	<p style="text-align: center;">a) Course:</p> <p>INTRODUCTION TECHNOLOGY. ELECTRONICS TECHNOLOGY MANUFACTURING TECHNOLOGIES FOR PRINTED CIRCUIT BOARDS (PCBs) CONTACTS IN ELECTRONICS. PCB MANUFACTURING PROCESSES PCB PRINTING PROCESS ETCHING PROCESS SOLDERING PROCESS PCB ASSEMBLY ELECTRICAL PROPERTIES OF THE PCB COMPUTER ASSISTED DESIGN OF THE PCB. TECHNOLOGY OF HEAT EVACUATION IN ELECTRONICS HEAT TRANSFER AT PCB LEVEL. THERMAL RESISTANCES. THERMAL REGIME. THERMAL REGIME OF THE ACTIVE DEVICES THERMAL REGIME OF THE CONDUCTORS AND PASSIVE COMPONENTS THERMAL REGIME OF THE ELECTRONIC EQUIPMENTS. TECHNIQUES FOR HEAT EVACUATION. LEAD-FREE DESIGN OF THE PCB PRESENTING OF THE ACTUAL TENDENCIES IN PCB DESIGN CHARACTERISTICS OF THE EARTH FRIENDLY PCB DESIGN (GREEN PCB) EMBEDDED CIRCUIT BOARDS PCB CHARACTERISTICS FOR « SYSTEMS-ON-PACKAGE » AND « SYSTEMS-ON-A- CHIP » LTCC AND ORGANIC TECHNOLOGIES TESTING METHODOLOGY FOR THE MULTI-LAYER PCB OF A «SYSTEM-ON- PACKAGE »</p> <p style="text-align: right;">Total course hours: 28 hours</p> <p style="text-align: center;">b) Applications:</p> <p><u>Project:</u></p> <ul style="list-style-type: none"> • computer assisted design of a complex electronic circuit (AC/DC power supply for a small-signal electronic circuit, including: transformer, rectifier, smoothing, regulator), using calculus programs (Mathead, Matlab). <p><u>Laboratory:</u></p> <ul style="list-style-type: none"> • computer assisted design for the PCB, PCB verification and optimization, with help of the Orcad program and using the on-line catalogues for electronic components, the compatibility rules and the actual standardization documentation. <p style="text-align: right;">Total of applications hours: 28 hours</p>
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Course Grade		
Final evaluation	Exam	E
Grading Plan	Colocvium (theory): 70% of the final grade. Viva.	
	Laboratory activity (CAD design of the PCB and PCB optimization): 20% of the final grade. Mixed evaluation.	
	Project activity (CAD design of an electronic circuit): 5% of the final grade. Computer evaluation.	
	Homework (reports, case studies): 5% of the final grade. Traditional evaluation.	

Discipline titular	Title, first name, last name	Signature
	lecturer D. Ionescu, PhD.	

Dean
Prof. Ion Bogdan, PhD

C O U R S E I N F O R M A T I O N

Course name	TELEVISION SYSTEMS				
Code	EDID405	Semester	7	Credits	4
Faculty	Electronics, Telecommunications and Information Technology		Number of hours		
Profile	Electronic		Total	C	S
Specialization	Telecommunications Systems and Technologies		56	28	-
			L	28	-
				P	
Category					DT
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical					
Optionality					DM
DM – mandatory, DE –elective, DL –facultative					
Previous discipline	mandatory	-			
	recommended	SCS 1 and SCS 2 ; Fundam. Electronic circuits			
Objectives	The course provides general knowledge about the capturing and then display the TV image, creating, video signal processing and transmission, principles of color television, digital television principles and operation of specific electronic blocks in the television chain.				
Content	<ul style="list-style-type: none"> - Features and parameters of TV image - Black& white system television - Color system television (NTSC, PAL, SECAM) - Video capturing and displays image electronic tractors - Deflection circuits - Digital television principles -Teletext systems 				
Course Grade					
Final evaluation	Evaluation with C Written test ; tasks: 4 subjects from wich 1 exercices and 3 theoretical subjects; exam conditions : close subjects percentage: each of the 4 subjects accounts 25% of the final evaluation score;				C
Grading Plan	Colloquium final evaluation				40 %
	Laboratory activity				20 %
	Test during the semester : 1 test with 4 subjects (2 exercices and 2 theoretical subjects);				40 %
	Assignments				
Instructor	Title, first name, last name			Signature	
	Conf. Dr. ing. Cleju Ioan				

Dean
Prof. Ion Bogdan, PhD

COURSE INFORMATION

Course name	Advanced Communications Systems						
Code	EDIS406	Semester	8	Credits	5		
Faculty	Electronics, Telecommunications and Information Technology		Number of hours				
Profile	Electronic		Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies		84	42	14	28	-
Category						DS	
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical							
Optionality						DM	
DM – mandatory, DE –elective, DL –facultative							
Previous discipline	mandatory	Mathematical Analysis, Signals, Circuits and Systems, Introduction to Communications, Communication Systems, Digital Communications					
	recommended						
Objectives	Acquiring knowledge about advanced digital techniques used for signal transmission Learning the advanced OFDM, MIMO and combined MIMO-OFDM techniques Presentation of synchronization methods Presentation of methods and transmission techniques that are specific to the modern communication systems, performance assessment and improvement						
Content	Spread Spectrum System, OFDM, Digital receivers, MIMO Systems, UWB Systems, Improved Nyquist Filters, Synchronization						
Course Grade							
Final evaluation	Exam				60 %;	E	
Grading Plan							
	Laboratory					20%	
	Project					10%	
	Assignments					10%	
Instructor	Title, first name, last name					Signature	
	Prof.dr. Nicolae Dumitru Alexandru						

**Dean
Prof. Ion Bogdan, PhD**

C O U R S E I N F O R M A T I O N

Course name	Communication Skills
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Code	EDIC407	Semester	8	Credits	2
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	28	14	14	-	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	-

Objectives	- Acquiring knowledge and skills in the field of oral communication, written and nonverbal, to create the image of a person with special qualities; - Ways of representing the perspective of personal potential in entrepreneurial activities; - Acquisition of the business relationship and ethical relationships with peers, the interpersonal relationships at work; - Practical application in entrepreneurship, interview techniques and negotiation techniques
Content	- Oral communication - Entrepreneurial activities - Business relationships - Technical interview - Technical negotiation

Course Grade		
Final evaluation	C –colloquy	C
Grading Plan	colloquy	75%
	specialty papers / homework	25%

Instructor	Title, first name, last name	Signature
	Conf.dr.ing. Adrian Brezulianu	

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C O U R S E I N F O R M A T I O N

Course name	Microwave Devices and Circuits for Wireless Communication
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Code	EDIS408	Semester	8	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	70	42	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	Communications’ basics Fundamentals of radiocommunications Communication systems
	recommended	Information theory Microwave techniques

Objectives	Familiarizing students with the design principles in the microwave: Microwave specific circuit parameters, microwave network analysis, filters, impedance matching circuits, amplifiers, oscillators, mixers.
Content	S parameters, impedance matching, directional couplers, power dividers, microwave filters, amplifiers, oscillators, mixers.

Course Grade		
Final evaluation	Exam	E 70%
Grading Plan	Laboratory	15%
	Project	-
	Assignments	15%

Instructor	Title, first name, last name Professor Irinel CASIAN BOTEZ	Signature
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C O U R S E I N F O R M A T I O N

Course name	ELECTROMAGNETIC COMPATIBILITY				
Code	EDID409	Semester	8	Credits	5
Faculty	Electronics, Telecommunications and Information Technology		Number of hours		
Profile	Electronics and telecommunications		Total	C	S
Specialization	Telecommunications Systems and Technologies		70	42	-
	L				14
	P				14
Category					DT
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical					
Optionality					DM
DM – mandatory, DE –elective, DL –facultative					
Previous discipline	mandatory	SCS, DCE			
	recommended	CIA, IC,			
Objectives	<p>The course is intended to offer basic knowledge of electromagnetic compatibility, of parasitical couplings (capacitive, inductive, conductive and through electromagnetic field) as well as about methods for the protection of equipment against noise.</p> <p>The course will provide students with the necessary skills to understand how perturbations penetrate equipment and how the latter can be protected.</p>				
Content	<p>Concepts and definitions in EMC; . LF parasitical couplings (C, L, GND); Parasitic coupling by radiation; Perturbations leaded through supplying paths; Noises</p>				
Course Grade					
Final evaluation	Type (E - exam, C - colloquy, VP)				E
	<p>Evaluation by exam (E):</p> <p>1. Written evaluation, problems; requirements: solving; Working conditions: written, (50%);</p> <p>2. Oral evaluation, verification of theoretical knowledge; requirements: solving; oral, (50%);</p>				
Grading Plan	Final evaluation by exam (E)				50%
	Laboratory				20%
	Project				30%
	Assignments				
Instructor	Title, first name, last name				Signature
	Professor Daniela Ionescu, PhD				

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COURSE INFORMATION

Course name	MANAGEMENT
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Code	EDIC410	Semester	8	Credits	4
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	All	Total	C	S	L	P
Specialization	All	42	28	14		

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DC
Optionality DM – mandatory, DE –elective, DL –facultative	DM

Previous discipline	mandatory	-
	recommended	Technical disciplines

Objectives	The acquirement of theoretical elements in the field of management as well as the improvement of knowledge and development of practical abilities (through the Business Game) related to: management synthesis skill development; elaboration of the strategies, mission and goals of a company; understanding the roles and attributions of an efficient manager in a dynamic environment; identifying different styles of management and understanding the ways of adapting the necessary components when it comes to working with or coordinating a goal-focused, efficient team; identifying the motivating factors and the behaviours of the members of a team in order to achieve efficient problem-solving skills; planning of a production process; elaborating a business plan.
Content	<p><i>COURSE Part 1</i> Introduction in organization management. Organizational culture and business ethics. The mission, goals and strategies of an organization. Communication. Operational management. Human resources management. Managerial control and feedback. Project management.</p> <p><i>COURSE Part 2</i> Management decisions – Adopting transfunctional decisions in a Business Game: The price decision. The production decision. The marketing decision. The investment decision. The research-development activities decision.</p> <p><i>SEMINARS</i> Elaboration of a business plan (groups of 3-5 students) Brief description of the company. Presentation of products and/or offered services. Market analysis. The competition related strategy of the company. Company leadership. The operational plan. The financial plan.</p>

Course Grade		
Final evaluation	Collocutional examination	C 30%
Grading Plan	Active participation in seminars/ project	35%
	Specialty assessments	35%

Lecturer	Title, first name, last name Associate Professor Cristiana ISTRATE, PhD	Signature
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COURSE INFORMATION

Course name	<i>Digital Audio Video Systems</i>
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Code	EDOS411A	Semester	7	credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronic	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DE

Previous discipline	mandatory	Physics, Devices and Circuits
	recommended

Objectives	Familiarizing students with the digital conversion of audio and video signals technique. There are presented the main magnetical, magneto-optical and optical recording methods as well as analog and digital transmission methods used in TV networks.
Content	Audio and video A/D conversion, coding and error correction algorithm Design and command of servo systems and optical systems Specific modulation systems and specific diagrams.

Course Grade		
Final evaluation	Exam	E
Grading Plan	Exam	50%
	Laboratory	50%
	Project	--
	Assignments	--

Instructor	<i>Title, first name, last name</i> <i>Dan Cepareanu, PhD</i>	Signature
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C O U R S E I N F O R M A T I O N

Course title	MEDICAL ELECTRONICS AND INFORMATICS
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Course code	EDOS411B	Semester	7	Number of credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours per semester				
Field	Electronics and Telecommunications	Total	C	S	L	P
Specializarea	Applied Electronics	56	28	-	28	-

Course type : DF - Basic, DID - in the field, DS - specialized, DC - complementary	DS
Optionality course category DI – required, DO –optional, DL – free choice (optional)	DO

Previous Courses	Compulsory	Electrical and electronic measurements, signals, circuits and systems, computers and programming languages
	Recommended	

Objectives	<ul style="list-style-type: none"> Introducing, deepening and systematization of knowledge about the image signals, signal processing and 2D applications in medical electronics Introducing the deepening and systematization of knowledge on some devices and circuits used in medical equipment, especially pre-amplifiers used for biological signal processing (instrumentation amplifiers / insulation, types of noise, interference, etc..) Tube X, scintillation, ultrasonic transducers etc.. Introducing the deepening and systematization of knowledge about some biological/bioelectric signal processing methods. Students familiarization with the principles of operation, handling and interpretation of data from some equipment used in medicine for diagnosis and treatment: electrocardiograph, pacemaker, defibrillator, electromyography, electroencephalography, ultrasound, computerized tomography, scintigraphy, etc..
Content (descriptors)	2D signals, medical, biological signal processing and medical imaging, bio-electrical activity measurement, the noise instrumentation amplifier, ECG, EEG, EMG, EP, Doppler effect, used ultrasound scanning types, principles of radiation generation X , autooscilante neural networks.

Rating system:			
Final assessment*	Form (E - exam, C - colloquium, CA – continuous assessment)	50%	
	Assessment by Examen 50% - written test T		
Final grade (percentages)	Final assessment by examination / oral		
	Ongoing assessment *	Micro (theoretical and practical) M	15%
		Tests during the [number 1-2] M	20%
		Homework [number 2-3] CC-M	15%
*) In all forms of assessment are specified as: T - traditionally, DC - computer, M - Mixed.			

Course coordinator	Academic degree, title, name, surname Prof. dr. Horia-Nicolai Teodorescu, c.m. A.R.	Signature
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COURSE INFORMATION

Course name	VLSI CIRCUITS FOR RADIOFREQUENCY				
Code	EDOS412A	Semester	8	Credits	5
Faculty	Electronics, Telecommunications and Information Technology		Number of hours		
Profile	Electronics and telecommunications		Total	C	S
Specialization	Telecommunications Systems and Technologies		56	28	-
	L				28
	P				-
Category					DS
DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical					
Optionality					DE
DM – mandatory, DE –elective, DL –facultative					
Previous discipline	mandatory	SCS, DCE, CIA, IC, Fundamentals of radiocommunications			
	recommended				
Objectives	<p>The course is intended to offer knowledge on VLSI analog circuits design.</p> <p>To provide students knowledge on the structure of VLSI analog circuits.</p> <p>To provide students knowledge to develop and design VLSI analog circuits at the schematic and layout level.</p> <p>To provide students the necessary skills to use a computer simulation program for designing electronic circuits used in RF implementation.</p>				
Content	Radio-receiver, Radio-transmitter, PRFA, RFA, AM, FM, SSB, RF, Radiocommunication system, Transmission antenna, AGC, VCO, PLL, CRC				
Course Grade					
Final evaluation	Type (E - exam, C - colloquy, VP)				C
	Evaluation by colloquy (C): 1. Written evaluation, problems; requirements: solving; Working conditions: written, (50%); 2. Oral evaluation, verification of theoretical knowledge; requirements: solving; oral, (50%);				
Grading Plan	Final evaluation by exam (E)				70%
	Laboratory				30%
	Project				1
	Assignments				2
Instructor	Title, first name, last name				Signature
	Professor assistant eng. Radu Gabriel Bozomitu, PhD				

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COURSE INFORMATION

Course name	RADIO-TRANSMITTERS AND RADIO-RECEIVERS
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Code	EDOS412B	Semester	8	Credits	5
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Faculty	Electronics, Telecommunications and Information Technology	Number of hours				
Profile	Electronics and telecommunications	Total	C	S	L	P
Specialization	Telecommunications Systems and Technologies	56	28	-	28	-

Category DF – fundamental, DT - technical, DS – specialization, DE – economic/managerial, DC classical	DS
Optionality DM – mandatory, DE –elective, DL –facultative	DE

Previous discipline	mandatory	SCS, DCE, CIA, IC, Fundamentals of radiocommunications
	recommended	

Objectives	The course is intended to offer knowledge on radio-transmitters and radio-receivers analysis and design. To provide students knowledge on the structure of radio-transmitters and radio-receivers. To provide students knowledge to develop and design radio-transmission and radio-reception equipments and systems. To provide students the necessary skills to use a computer simulation program for designing electronic circuits used in radio-transmitters and radio-receivers implementation.
Content	Radio-receiver, Radio-transmitter, PRFA, RFA, AM, FM, SSB, RF, Radiocommunication system, Transmission antenna, TLT, VCO, PLL

Course Grade			
Final evaluation	Type (E - exam, C - colloquy, VP)		C
	Evaluation by colloquy (C): 1. Written evaluation, problems; requirements: solving; Working conditions: written, (50%); 2. Oral evaluation, verification of theoretical knowledge; requirements: solving; oral, (50%);		
Grading Plan	Final evaluation by exam (E)		70%
		Laboratory	30%
		Project	1
		Assignments	2

Instructor	Title, first name, last name Professor assistant eng. Radu Gabriel Bozomitu, PhD	Signature
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03 febr 2011

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