

DomainELECTRONICS, TELECOMMUNICATIONS AND INFORMATION TECHNOLOGIES ENGINEERING

Program NameAI AND SIGNAL PROCESSING FOR ELECTRONICS AND TELECOMM (IN ENGLISH)

Study LevelRESEARCH MASTERS

CURRICULA

Valid for the Academic Year2025-2026

COURSE CODE AND TITLE		Year I										Methods of Assessment			No. of Hours/Discipline				ECTS/Sem		Discipline	
		SEM 1 14 weeks					SEM 2 14 weeks															
		C	S	L	P	Pr/Ce	C	S	L	P	Pr/Ce	E	C	V	Total	C	Apl	Indiv. St.	1	2	cat	type
1.00	AI Fundamentals	2	0	1	0	0						Gr		100	28	14	58	4.0		DA	DI	
2.00	Software for Signal / Image Processing and AI	1	0	2	0	0						Gr		100	14	28	58	4.0		DS	DI	
3.00	Statistical Signal Processing	2	0	1	0	0						Gr		100	28	14	58	4.0		DA	DI	
4.00	Mathematical Methods and Numerical Algorithms for Signal/Image Processing and Machine Learning	2	0	1	0	0						Gr		100	28	14	58	4.0		DA	DI	
5.00	Ethics and Academic Integrity	1	0	0	0	0						Gr		50	14	0	36	2.0		DC	DI	
6.10	Sparse Representations for Signal and Image Processing	1	0	1	0	0						Gr		100	14	14	72	4.0		DS	DO	
6.20	AI Technologies for Mobile Applications	1	0	1	0	0						Gr		100	14	14	72	4.0		DS	DO	
6.30	Virtual and Augmented Reality	1	0	1	0	0						Gr		100	14	14	72	4.0		DS	DO	
6.40	Audio Signal Compression Techniques	1	0	1	0	0						Gr		100	14	14	72	4.0		DS	DO	
7.00	Research / Practical Activity 1	0	0	0	0	13						Gr		200	0	182	18	8.0		DS	DI	
8.00	Advanced Techniques for Image and Video Processing						2	0	1	0	0	Gr		100	28	14	58	4.0		DA	DI	
9.10	Computer Vision						2	0	1	0	0	Gr		100	28	14	58	4.0		DS	DO	
9.20	Speech Analysis, Synthesis and Recognition						2	0	1	0	0	Gr		100	28	14	58	4.0		DS	DO	
10.00	Machine Learning						2	0	1	0	0	Gr		100	28	14	58	4.0		DS	DI	
11.10	Reconfigurable Architectures for Signal / Image Processing and AI						2	0	1	0	0	Gr		100	28	14	58	4.0		DS	DO	
11.20	Smart Sensor Networks and IoT						2	0	1	0	0	Gr		100	28	14	58	4.0		DS	DO	
12.00	Research Project 1						0	0	0	2	0	Gr		100	0	28	72	4.0		DS	DI	
13.00	Research / Practical Activity 2						0	0	0	0	14	Gr		250	0	196	54	10.0		DS	DI	
TOTAL AN		9	0	6	0	13	8	0	4	2	14	sem1 sem2	5 4	1 1	1 1	1500	238	546	716	30.0	30.0	
201.00	Psychopedagogy of Adolescents, Youngs and Adults	2	1	0	0	0						Gr		125	28	14	83	5.0		DC	DFac	
301.00	Volunteering 1	0	1	0	0	0						A/R		50	0	14	36	2.0		DC	DFac	
202.00	Design and Management of Educational Programs						2	1	0	0	0	Gr		125	28	14	83	5.0		DC	DFac	

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	SEM 1 14 weeks					SEM 2 14 weeks						Total	C	Apl	Indiv. St.	1	2	cat	type	
	C	S	L	P	Pr/Ce	C	S	L	P	Pr/Ce										
203.10 Educational Communication						1	2	0	0	0	Gr	125	14	28	83		5.0	DC	DFac	
203.20 Educational Research Methodology						1	2	0	0	0	Gr	125	14	28	83		5.0	DC	DFac	
203.30 Modern Trends in Assessement Theory and Practice						1	2	0	0	0	Gr	125	14	28	83		5.0	DC	DFac	
302.00 Volunteering 2						0	1	0	0	0	A/R	50	0	14	36		2.0	DC	DFac	
TOTAL AN	2	2	0	0	0	3	4	0	0	0	sem1 sem2	1 2	0 0	1 1	475	70	84	321	7.0 12.0	

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COURSE CODE AND TITLE	Year II										Methods of Assessment	Num. of Hours/Discipline				ECTS/Sem		Discipline				
	SEM 1 14 weeks					SEM 2 14 weeks						E	C	V	Total	C	Apl	Indiv. St.	1	2	cat	type
	C	S	L	P	Pr/Ce	C	S	L	P	Pr/Ce												
14.00 AI-Based Cybersecurity	1	0	2	0	0						Gr			100	14	28	58	4.0		DA	DI	
15.00 Bioinformatics	1	0	2	0	0						Gr			100	14	28	58	4.0		DS	DI	
16.00 Neural Networks and Deep Learning	2	0	1	0	0						Gr			100	28	14	58	4.0		DS	DI	
17.00 Data Mining	1	0	2	0	0						Gr			100	14	28	58	4.0		DS	DI	
18.10 Coding and Compression for Images and Video Sequences	1	0	1	0	0						Gr			100	14	14	72	4.0		DA	DO	
18.20 Traffic Prediction in Telecom Networks Using AI	1	0	1	0	0						Gr			100	14	14	72	4.0		DA	DO	
18.30 Cognitive Communications	1	0	1	0	0						Gr			100	14	14	72	4.0		DA	DO	
18.40 Natural Language Processing	1	0	1	0	0						Gr			100	14	14	72	4.0		DA	DO	
19.00 Research / Practical Activity 3	0	0	0	0	14						Gr			250	0	196	54	10.0		DS	DI	
20.00 Research / Practical Activity 4						0	0	0	0	14	Gr			250	0	196	54		10.0	DS	DI	
21.00 Dissertation Project Work						0	0	0	9	0	Gr			250	0	126	124		10.0	DS	DI	
22.00 Field Specific Research for the Master Thesis						0	0	0	0	5	Gr			250	0	70	180		10.0	DS	DI	
23.00 Presentation of Dissertation						0	0	0	0	0	Gr			0	0	0	0		10.0	DS	DI	
TOTAL AN	6	0	8	0	14	0	0	0	9	14	sem1	5	1	0	1500	84	700	716	30.0	30.0		
				14.00					14.00		sem2	0	3	0					+ 10			
100.00 Introduction to Quantum Information	2	0	2	0	0						Gr			75	28	28	19	3.0		DA	DFac	
204.00 Didactics of the Field and Developments in Didactics Specialties (High School and Post High School Education)	2	1	0	0	0						Gr			125	28	14	83	5.0		DC	DFac	
205.10 School Organization Management	1	2	0	0	0						Gr			125	14	28	83	5.0		DC	DFac	
205.20 Metacognitive Education	1	2	0	0	0						Gr			125	14	28	83	5.0		DC	DFac	
205.30 Intercultural Education	1	2	0	0	0						Gr			125	14	28	83	5.0		DC	DFac	
303.00 Volunteering 3	0	1	0	0	0						A/R			50	0	14	36	2.0		DC	DFac	
206.00 Teaching Practice (in Secondary School and Tertiary Education)						0	0	0	0	3	Gr			125	0	42	83		5.0	DC	DFac	

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207.00	Graduation Exam - Level II				0	0	0	0	0	Gr		0	0	0	0		5.0	DC	DFac				
304.00	Volunteering 4				0	1	0	0	0	A/R		50	0	14	36		2.0	DC	DFac				
TOTAL AN		5	4	2	0		0	0	1	0	0	3	sem1	2	1	1	550	70	140	340	15.0	7.0	
					11.00					1.00			sem2	0	1	1					+ 5		

	C	S	L	P	Pr/Ce	Credite	Examene	Colocvii si verificari	Total evaluari	Nr.examene/tot.evaluari
Anul I	238	0	140	28	378	60	9	4	13	69 %
Anul II	84	0	112	126	462	60	5	4	9	56 %
TOTAL	322	0	252	154	840	120	14	8	22	64 %

NUMAR ORE TOTAL	1568	
TOTAL ORE DIDACTICE	798	
TOTAL ORE DISCIPLINE DE APROFUNDARE	238	
TOTAL ORE DISCIPLINE DE SINTEZA	1316	
TOTAL ORE DISCIPLINE COMPLEMENTARE - TIP DC	14	1.65 % din tot.activ.didactice oblig. max 20%
NUMAR DISCIPLINE COMPLEMENTARE - TIP DC	1	
TOTAL ORE CURS	322	
TOTAL ORE ACTIVITATI APLICATIVE	406	TOTAL ORE ACTIV.APLIC.FARA DISC.PARTIAL ASIST. 280
RAPORT CURS / ACTIV. PRACTICE	0.79 0.80-1.20	RAPORTAT LA ACTIV.APLIC.FARA DISC.PARTIAL ASIST. 1.15

Rector,
Prof.Dr.Ing.Vasile Topa

Dean,
Prof. dr. ing. Ovidiu Aurel Pop

Department Director,
Prof. dr. ing. Virgil Mircea Dobrota