UNIVERSITY OF PETROSANI
MECHANICAL AND ELECTRICAL ENGINEERING FACULTY

CURRICULUM PLAN
Starting with the 2018-2019 academic year

Study Program:	**ELECTROMECHANICS**
Fundamental Field:	**ENGINEERING**
Bachelor Field:	**ELECTRICAL ENGINEERING**
Academic studies:	**4 YEARS**
Mode of studies: *full-time (F)/ low frequency (IFR)/ distance learning (ID)*	***FULL-TIME*** **(F)**

TRAINING OBJECTIVES AND COMPETENCES

General objective of the curriculum: the training of specialists with high theoretical and practical preparation for the electrical and mechanical production, design and research sectors. The main mission of this study program is to prepare engineers with competencies in the field of Electrical Engineering, able to work in any engineering field in which using of electrical engineering knowledge is appropriate.

Specific objectives of the curriculum: knowledge transmission and necessary skills formation to acquire the following competencies.

Proffesional competences:

C1 - Adequate application of fundamental knowledge of mathematics, physics, chemistry in electrical engineering

C2 - Operating with fundamental concepts of computing science and information technology.

C3 - Adequate application of knowledge about energy conversion, electromagnetic and mechanical phenomena specific to static converters, electromechanical, electrical equipments and electromechanical drives.

C4 - Using measurement techniques of electrical parameters also non-electrical and data acquisition in electromechanical systems

C5 - Automation of electromechanical processes.

C6 - Achieving the operating, maintenance, service, system integration activities.

Transversal competences:

CT1 - Identifying the objectives to be achieved, available resources, requirements for these to be completed, work stages, work times, deadlines and associated risks.

CT2 - Identifying the roles and responsibilities within a multidisciplinary team and applying linking and effective work techniques within the team.

CT3 - Effective use of information sources and communication resources and assisted training (Internet portals, specialized software, databases, online courses, etc.) both in Romanian and in a foreign language.

RECTOR,

Professor Ph.D. Sorin Mihai RADU

DEAN,

Associate Professor Ph.D. Iosif DUMITRESCU

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No.	FIRST YEAR Subject	Subject Code	Type	1st Semester				2nd Semester				Credit Points		E,C		No. of teaching hours per subject			Hours of individual study	Total hours per subject
				C	S	L	P	C	S	L	P	Sem1	Sem2	Sem1	Sem2	Course	Apl.	Total		
1	Linear Algebra, Coordinate and Differential Geometry	2EE1OF01	F	2	2							4		E1		28	28	56	44	100
2	Mathematical Analysis	2EE1OF02	F	2	2							4		E1		28	28	56	44	100
3	Mechanics	2EE1OD03	D	2		1						4		C1		28	14	42	58	100
4	Applied Software	2EE1OF04	F	2		2						5		E1		28	28	56	69	125
5	English I	2EE1OX05	X		2							2		C1		0	28	28	22	50
6	Electromagnetic Field Theory	2EE1OD06	D	2	2							5		E1		28	28	56	69	125
7	Optional Subject OP11	2EE1AX07	X	1	1							2		C1		14	14	28	22	50
8	Chemistry	2EE1OF08	F	2		1						3		C1		28	14	42	33	75
9	Physical Education and Sports I	2EE1OX09	X		2							1		A/R		0	28	28	0	28
10	English II	2EE2OX10	X						2				2		C2	0	28	28	22	50
11	Computer Aided Graphics I	2EE2OF11	F					2		3			5		C2	28	42	70	55	125
12	Physics	2EE2OF12	F					2		1			4		C2	28	14	42	58	100
13	Electric Circuits Theory I	2EE2OD13	D					2	1	1			6		E2	28	28	56	94	150
14	Optional Subject OP12	2EE2AF14	F					2	2				4		E2	28	28	56	44	100
15	Technological Methods and Procedures	2EE2OD15	D					2		1			3		E2	28	14	42	33	75
16	Electronics	2EE2OD16	D					3		2			5		E2	42	28	70	55	125
17	Physical Education and Sports II	2EE2OX17	X						2				1	A/R		0	28	28	0	28
TOTAL hours C, S, L, P /week				**13**	**11**	**4**	**0**	**13**	**7**	**8**	**0**	**30**	**30**	**8E+ 7C**		**364**	**420**	**784**	**722**	**1506**
												60								

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No.	SECOND YEAR Subject	Subject Code	Type	1st Semester				2nd Semester				Credit Points		E,C		No. of teaching hours per subject			Hours of individual study	Total hours per subject
				C	S	L	P	C	S	L	P	Sem1	Sem2	Sem1	Sem2	Course	Apl.	Total		
18	Computer Programming and Programming Languages I	2EE3OF18	F	2		3						5		E3		28	42	70	55	125
19	Electric Circuits Theory II	2EE3OD19	D	2		2						5		E3		28	28	56	69	125
20	Electrical and Electronic Measurement I	2EE3OD20	D	3		2						5		E3		42	28	70	55	125
21	Strength of Materials	2EE3OS21	S	2		1						3		C3		28	14	42	33	75
22	Optional Subject OP21	2EE3AX22	X		2							2		C3		0	28	28	22	50
23	Electrical Equipment	2EE3OD23	D	2		1						4		C3		28	14	42	58	100
24	Electrical Machines I	2EE3OD24	D	3		2						5		E3		42	28	70	55	125
25	Physical Education and Sports III	2EE3OX25	X		1							1		A/R		0	14	14	0	28
26	Electrical and Electronic Measurement II	2EE4OD26	D					2		2			4		E4	28	28	56	44	100
27	Optional Subject OP22	2EE4AX27	X						2				2		C4	0	28	28	22	50
28	Electrical Machines II	2EE4OD28	D					3		2	1		5		E4	42	42	84	41	125
29	Computer Aided Graphics II	2EE4OF29	F					2		3			5		E4	28	42	70	55	125
30	Electrotechnical Materials	2EE4OD30	D					2		2			3		C4	28	28	56	19	75
31	Electromagnetic Compatibility	2EE4AD31	D					2		1			3		C4	28	14	42	33	75
32	Computer Programming and Programming Languages II	2EE4OF32	F					2		1			3		E4	28	14	42	33	75
33	Physical Education and Sports IV	2EE4OX33	X						1				1		A/R	0	14	14	0	28
34	Practical Training 3weeks.x30 hours/week	2EE4OD34	D										4		C4	0	90	90	0	90
TOTAL hours C, S, L, P /week				**14**	**3**	**11**	**0**	**13**	**3**	**11**	**1**	**30**	**30**	**8E+ 7C**		**378**	**496**	**874**	**594**	**1496**
												60								

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CURRICULUM PLAN
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No.	THIRD YEAR Subject	Subject Code	Type	1st Semester				2nd Semester				Credit Points		E,C		No. of teaching hours per subject			Hours of individual study	Total hours per subject
				C	S	L	P	C	S	L	P	Sem1	Sem2	Sem1	Sem2	Course	Apl.	Total		
35	Industrial instrumentation	2EE5OS35	S	2		1						4		C5		28	14	42	58	100
36	Transducers, Interfaces and Data Acquisition	2EE5OD36	D	2		2	1					6		E5		28	42	70	80	150
37	Thermodynamics	2EE5OS37	S	2		2						4		C5		28	28	56	44	100
38	Numerical Equipment for Electromechanical Installations	2EE5OD38	D	2		1						4		E5		28	14	42	58	100
39	Optional Subject OP31	2EE5OD39	D	2	1							3		E5		28	14	42	33	75
40	Electromechanical industrial facilities	2EE5OS40	S	2		1						3		C5		28	14	42	33	75
41	Static Convertors I	2EE5OD41	D	3		2						6		E5		42	28	70	80	150
42	Static Convertors II	2EE6OD42	D					3		2			4		E6	42	28	70	30	100
43	Static Convertors II - Project	2EE6OD43	D								2		2		C6	0	28	28	22	50
44	Quality and Reliability	2EE6OD44	D					2	1				3		C6	28	14	42	33	75
45	Hydraulic and Pneumatic Drives	2EE6OD45	D					2		1			4		E6	28	14	42	58	100
46	Optional Subject OP32	2EE6AS46	S					2		1	1		4		E6	28	28	56	44	100
47	Optional Subject OP33	2EE6AS47	S					2		2			4		C6	28	28	56	44	100
48	Systems Theory and Automatic Control	2EE6OD48	D					3		2			5		E6	42	28	70	55	125
49	Practical Training 3weeks.x30 hours/week	2EE6OS49	S										4		C6	0	90	90	0	90
TOTAL hours C, S, L, P /week				**15**	**1**	**9**	**1**	**14**	**1**	**8**	**3**	**30**	**30**	**10E+ 5C**		**406**	**412**	**818**	**672**	**1490**
												60								

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No.	FOURTH YEAR Subject	Subject Code	Type	1st Semester				2nd Semester				Credit Points		E,C		No. of teaching hours per subject			Hours of individual study	Total hours per subject
				C	S	L	P	C	S	L	P	Sem1	Sem2	Sem1	Sem2	Course	Apl.	Total		
50	Electrical Installations I	2EE7OS50	S	2		2						5		E7		28	28	56	69	125
51	Electric Drive Systems I	2EE7OS51	S	2		2						5		E7		28	28	56	69	125
52	Modelling and Simulation in Electrical Engineering	2EE7OS52	S	2		1	1					5		E7		28	28	56	69	125
53	Optional Subject OP41	2EE7AS53	S	2		1						3		C7		28	14	42	33	75
54	Systems with microprocessors	2EE7OD54	D	2		2						4		E7		28	28	56	44	100
55	Computer-Aided Process Control	2EE7OS55	S	2		1						3		C7		28	14	42	33	75
56	Microcontrollers and Integrated Systems	2EE7AS56	S	2		2						5		C7		28	28	56	69	125
57	Electrical Installations II	2EE8OS57	S					2		1			3		E8	28	14	42	33	75
58	Electrical Installations II - Project	2EE8OS58	S								1		2		C8	0	14	14	36	50
59	Electric Drive Systems II	2EE8OS59	S					2		2	1		4		E8	28	42	70	30	100
60	Optional Subject OP42	2EE8AS60	S					2		1			3		C8	28	14	42	33	75
61	Optional Subject OP43	2EE8OS61	S					2		2			4		E8	28	28	56	44	100
62	Analog and Digital Transmissions	2EE8OS62	S					2		1			3		E8	28	14	42	33	75
63	Servosystems	2EE8OS63	S					2		1			3		C8	28	14	42	33	75
64	Practical Training for the Graduation Paper	2EE8OS64	S										4		C8	0	60	60	0	60
65	Elaboration of the Graduation Paper	2EE8OS65	S								4		4		C8	0	56	56	0	100
TOTAL hours C, S, L, P /week				**14**	**0**	**11**	**1**	**12**	**0**	**8**	**6**	**30**	**30**	**10E+ 5C**		**364**	**424**	**788**	**628**	**1460**
												60								
There are 10 credit points granted for the graduation paper																				

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Annex I

OPTIONAL SUBJECTS				
No.	Subject Code	Year	Subject	
7	OP11	I	Professional Communication	Ethics and Academic Integrity
14	OP12	I	Numerical Methods	Special Mathematics
22	OP21	II	French I	Spanish I
26	OP22	II	French II	Spanish II
37	OP31	IV	Management	Power Sources
44	OP32	III	Mechanisms and Machine Parts	Mechatronics
45	OP33	III	Electromechanical Systems Operation and Reliability	Electromechanical Equipment Manufacturing Technology
51	OP41	II	Electrothermics	Electrical Technologies
59	OP42	IV	Use of electricity	Stations and Transformer Substations
60	OP43	IV	Electric Traction	Special Electrical Machines

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Annex II

FACULTATIVE SUBJECTS

No.	Subject Code	Year	Subject	Sem. 1			Sem. 2			Credit points	Ei, Ci	No. of teaching hours per subject			Hours of individual study	Total hours per subject
				C	S	L	C	S	L			Course	Apl.	Total		
61	2EE2LX61	I	History of the Technique				1	1		2	C2	14	14	28	22	50
62	2EE3LD62	II	Production, transport and power distribution	2		1				3	C3	28	14	42	33	75
63	2EE3LX63	II	Environment Protection	1		1				2	C3	14	14	28	72	100
64	2EE4LS64	II	Databases in electrical engineering				2		2	3	C4	28	28	56	44	100
65	2EE5LS65	III	Graphs in Electrical Engineering	2		1				3	C5	28	14	42	33	75
66	2EE6LS66	III	Computer Networks				2		2	3	C6	28	28	56	19	75
68	2EE5/6LX67/68	III	English V-VI		1			1		1/1	C5,C6		28	28	72	100
69	2EE7LS69	IV	Basics of Computer-Aided Design	2		1				3	C7	28	14	42	33	75
70	2EE8LS70	IV	Flexible Manufacturing Systems				1		1	3	C8	14	14	28	47	75
72	2EE7/8LX71/72	IV	Entrepreneurship	2	1			1		1/1	C7,C8		28	28	72	100
TOTAL hours C, S, L, P /week				**9**	**2**	**4**	**6**	**3**	**5**	**22**		**182**	**196**	**378**	**447**	**825**

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