

PLAN OF STUDIES

FACULTY:	Electrical Engineering
MAIN FIELD OF STUDY:	Electrical Engineering
EDUCATION LEVEL:	2nd level, 2nd level studies
FORM OF STUDIES:	part-time
PROFILE:	general academic
SPECIALIZATION:	Industrial Electrical Engineering
LANGUAGE OF STUDY:	polish

Resolution no. 745/32/2016-2020 of the Senate of Wrocław University of Science and Technology
In effect since 01.10.2019 r.

1. Set of obligatory and optional courses and groups of courses in semestral arrangement

Semester 1

Obligatory courses

number of ECTS points: 19

No.	Course code	Name of course	Weekly number of hours					Learning effect symbol	Number of hours		Number of ECTS points		Form of course	Way of crediting	Course			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes			university-wide	practical	kind	type
1	ELR051371W	Selected problems of circuit theory	2					K2ETK_W1	22	90	3	2,1	T	E			K	OB
2	ELR051371C	Selected problems of circuit theory		1				K2ETK_U1 K2ETK_K1	11	30	1	0,7	T	Z		P	K	OB
3	ELR051372W ELR052172W ELR052572W	Numerical methods in engineering	1					K2ETK_W2 K2ETK_K2	11	30	1	0,7	T	Z			PD	OB
4	ELR051372P ELR052172P ELR052572P	Numerical methods in engineering					1	K2ETK_U2 K2ETK_K2	11	30	1	0,7	T	Z		P	PD	OB
5	ELR052271W	Short-circuits in power systems	2					K2ETK_W3 K2ETK_K3	22	60	2	1,4	T	Z			K	OB
6	ELR053262W	Electromechanical drive systems	2					K2ETK_W4	22	90	3	2,1	T	E			K	OB
7	ELR053262L	Electromechanical drive systems			1			K2ETK_U3 K2ETK_K1	11	30	1	0,7	T	Z		P	K	OB
8	ELR053267W	Automation of production processes - selected issues	1					S2ETP_W1 K2ETK_K7	11	60	2	1,4	T	Z			S	OB
9	ELR053267L	Automation of production processes - selected issues			2			S2ETP_U1 K2ETK_K7	22	60	2	1,4	T	Z		P	S	OB
10	ELR053366W	Electrical Measurement Nonelectrical Values	1					K2ETK_W5 K2ETK_K2	11	60	2	1,4	T	Z			PD	OB
11	ELR053366L	Electrical Measurement Nonelectrical Values			1			K2ETK_U4 K2ETK_K2	11	30	1	0,7	T	Z		P	PD	OB
Total			9	1	4	1			165	570	19	13,3						

Optional courses					minimum	44	hours in semester,				4	ECTS points						
No.	Course code	Name of course	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form of course	Way of crediting	Course			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes			university wide	practical	kind	type
Optional courses block: Foreign Language								ECTS		2		hours		3				
1	JZL030001BKC	Foreign language A1 or A2		3				K2ETK_U6 K2ETK_K1	33	60	2	1,4	T	Z	O	P	KO	W
Optional courses block: Management								ECTS		2		hours		3				
1	ZMR052571W	Management of a Company	1					K2ETK_W6 K2ETK_K3 K2ETK_K6	11	50	2	1,4	T	Z	O		KO	W
2	ZMR052579W	Management in the power industry	1					K2ETK_W6 K2ETK_K3 K2ETK_K6	11	50	2	1,4	T	Z	O		KO	W

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points
lec	cl	lab	pr	sem	hours	hours	points	points
10	4	4	1	0	209	680	23	16,1

Semester 2

Obligatory courses

number of ECTS points: 22

No.	Course code	Name of course	Weekly number of hours					Learning effect symbol	Number of hours		Number of ECTS points		Form of course	Way of crediting	Course			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes			university wide	practical	kind	type
1	ELR051163W	High Voltage Measurement and diagnostics of insulation	2					S2ETP_W4 K2ETK_K3 K2ETK_K6	22	60	2	1,4	T	Z			S	OB
2	ELR051165W	Lightning and overvoltage protection in buildings	1					S2ETP_W7 K2ETK_K3	11	60	2	1,4	T	Z			S	OB
3	ELR051269W	Electromagnetic materials	2					S2ETP_W3 K2ETK_K1	22	60	2	1,4	T	Z			S	OB
4	ELR052371W	Computer Aided Design (CAD) in Energetic	2					S2ETP_W10 K2ETK_K2	22	60	2	1,4	T	Z			S	OB
5	ELR052371L	Computer Aided Design (CAD) in Energetic			1			S2ETP_U8 K2ETK_K2	11	60	2	1,4	T	Z		P	S	OB
6	ELR053268W	Controlled electrical drives - selected problems	2					S2ETP_W5	22	120	4	2,8	T	E			S	OB
7	ELR053268L	Controlled electrical drives - selected problems			2			S2ETP_U2 K2ETK_K2 K2ETK_K6	22	60	2	1,4	T	Z		P	S	OB
8	ELR053269W	Power converters in supply and control system	2					S2ETP_W2 K2ETK_K1	22	120	4	2,8	T	E			S	OB
9	ELR053269L	Power converters in supply and control system			2			S2ETP_U4 K2ETK_K1	22	60	2	1,4	T	Z		P	S	OB
Total			11		5				176	660	22	15,4						

Optional courses

minimum 22

hours in semester, 2

ECTS points

No.	Course code	Name of course	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form of course	Way of crediting	Course			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes			university wide	practical	kind	type
Optional courses block: Foreign Language								ECTS		1		hours		1				
1	JZL030002BKC	Foreign language B2+ or C1+		1				K2ETK_U5 K2ETK_K1	11	30	1	0,7	T	Z	O	P	KO	W
Optional courses block: Law								ECTS		1		hours		1				
1	PRR051271W	Standardization and engineering law	1					K2ETK_W7 K2ETK_K3 K2ETK_K5	11	25	1	0,7	T	Z	O		KO	W
2	PRR051272W	Engineering law	1					K2ETK_W7 K2ETK_K3 K2ETK_K5	11	25	1	0,7	T	Z	O		KO	W
3	PRR051273W	Technical Standardization	1					K2ETK_W7 K2ETK_K3 K2ETK_K5	11	25	1	0,7	T	Z	O		KO	W

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points
lec	cl	lab	pr	sem				
12	1	5	0	0	198	715	24	16,8

Semester 3

Obligatory courses

number of ECTS points: 13

No.	Course code	Name of course	Weekly number of hours					Learning effect symbol	Number of hours		Number of ECTS points		Form of course	Way of crediting	Course			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes			university wide	practical	kind	type
1	ELR051164L	High Voltage Measurement and diagnostics of insulation			2			S2ETP_U7 K2ETK_K3 K2ETK_K6	22	60	2	1,4	T	Z		P	S	OB
2	ELR051270L	Electromagnetic materials			1			S2ETP_U6 K2ETK_K1 K2ETK_K3	11	30	1	0,7	T	Z		P	S	OB
3	ELR051274W	Strong electrical and magnetic fields in technology	2					S2ETP_W8 K2ETK_K6	22	90	3	2,1	T	E			S	OB
4	ELR051274L	Strong electrical and magnetic fields in technology			2			S2ETP_U5 K2ETK_K6	22	60	2	1,4	T	Z		P	S	OB
5	ELR051275W	Thermokinetics of electric and electronic devices	2					S2ETP_W9 K2ETK_K6	22	60	2	1,4	T	Z			S	OB
6	ELR053270W	Computer aided modeling and design of the control system	1					S2ETP_W6	11	30	1	0,7	T	Z			S	OB
7	ELR053270L	Computer aided modeling and design of the control system			2			S2ETP_U3 K2ETK_K6	22	60	2	1,4	T	Z		P	S	OB
Total			5		7				132	390	13	9,1						

Optional courses

minimum 44

hours in semester, 4

ECTS points 2

No.	Course code	Name of course	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form of course	Way of crediting	Course			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes			university wide	practical	kind	type
Optional courses block: B									ECTS		2	hours		2				
1	ELR051276W	Plasma technologies in industry	2					S2ETP_W12 K2ETK_K4	22	60	2	1,4	T	Z			S	W
2	ELR051277W	Electrical Low Power Supplies	2					S2ETP_W12 K2ETK_K6	22	60	2	1,4	T	Z			S	W
3	ELR051278W	Optoelectronics	2					S2ETP_W12 K2ETK_K1	22	60	2	1,4	T	Z			S	W
4	ELR051373W	Applied photovoltaics	2					S2ETP_W12 K2ETK_K6 K2ETK_K7	22	60	2	1,4	T	Z			S	W
Optional courses block: C									ECTS		2	hours		2				
1	ELR052373W	Conventional and Intelligent installations	2					S2ETP_W13 K2ETK_K1	22	60	2	1,4	T	Z			S	W
2	ELR052472W	Modern electrical devices	2					S2ETP_W13 K2ETK_K1	22	60	2	1,4	T	Z			S	W
3	ELR052476W	Rationalization of energy consumption	2					S2ETP_W13 K2ETK_K6	22	60	2	1,4	T	Z			S	W

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points
lec	cl	lab	pr	sem				
9	0	7	0	0	176	510	17	11,9

Semester 4

Optional courses

No.	Course code	Name of course	Weekly number of hours					Field-of-study educational effect symbol	minimum		hours in semester,		ECTS points						
			lec	cl	lab	pr	sem		198		26								
									ZZU	CNPS	total	BK classes	Form of course	Way of crediting	university wide	practical	kind	type	
1	ELR051198S ELR053198S	Diploma seminar					2	S2ETP_U10 K2ETK_K6	22	90	3	2,1	T	Z		P	S	W	
2	ELR051199DP ELR052199DP ELR053199DP	Master's thesis					12	S2ETP_U11 K2ETK_K4 K2ETK_K6	132	540	18	12,6	T	Z		P	S	W	
Optional courses block: Social Sciences and Ethics								ECTS		2		hours				1			
1	FLH551622S	Ethics in bussiness					1	K2ETK_U7 K2ETK_K6	11	50	2	1,4	T	Z	O	P	KO	W	
2	PKH550422S	Social communication					1	K2ETK_U7 K2ETK_K6	11	50	2	1,4	T	Z	O	P	KO	W	
3	PKH55522S	The art of public speaking					1	K2ETK_U7 K2ETK_K6	11	50	2	1,4	T	Z	O	P	KO	W	

Optional courses block: A						ECTS		3	hours			3					
1	ELR053165W	Permanent magnet electrical machines	2				S2ETP_W11	22	60	2	1,4	T	E		S	W	
2	ELR053165L	Permanent magnet electrical machines			1		S2ETP_U9 K2ETK_K7	11	30	1	0,7	T	Z		P	S	W
3	ELR053166W	Field-circuit modelling of electrical machines and apparatus	2				S2ETP_W11	22	60	2	1,4	T	E			S	W
4	ELR053166L	Field-circuit modelling of electrical machines and apparatus			1		S2ETP_U9 K2ETK_K7	11	30	1	0,7	T	Z		P	S	W
5	ELR053271W	Diagnostics of industrial processes	2				S2ETP_W11	22	60	2	1,4	T	E			S	W
6	ELR053271L	Diagnostics of industrial processes			1		S2ETP_U9 K2ETK_K7	11	30	1	0,7	T	Z		P	S	W
7	ELR053272W	Power electronics converters in industry	2				S2ETP_W11 K2ETK_K6	22	60	2	1,4	T	E			S	W
8	ELR053272L	Power electronics converters in industry			1		S2ETP_U9 K2ETK_K6	11	30	1	0,7	T	Z		P	S	W
9	ELR053273W	Electrical drives vehicles	2				S2ETP_W11 K2ETK_K6 K2ETK_K7	22	60	2	1,4	T	E			S	W
10	ELR053273L	Electrical drives vehicles			1		S2ETP_U9 K2ETK_K6 K2ETK_K7	11	30	1	0,7	T	Z		P	S	W
11	ELR053367W	Measurement systems management	2				S2ETP_W11 K2ETK_K2	22	60	2	1,4	T	E			S	W
12	ELR053367L	Measurement systems management			1		S2ETP_U9 K2ETK_K2	11	30	1	0,7	T	Z		P	S	W
13	ELR053369W	Microprocessor techniques in measuring systems	2				S2ETP_W11 K2ETK_K6	22	60	2	1,4	T	E			S	W
14	ELR053369L	Microprocessor techniques in measuring systems			1		S2ETP_U9 K2ETK_K6	11	30	1	0,7	T	Z		P	S	W
15	ELR053380W	Measurement methods and techniques	2				S2ETP_W11	22	60	2	1,4	T	E			S	W
16	ELR053380L	Measurement methods and techniques			1		S2ETP_U9 K2ETK_K2	11	30	1	0,7	T	Z			S	W

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points
lec	cl	lab	pr	sem				
2	0	1	12	3	198	770	26	18,2

2. Set of examinations in semestral arrangement

Course code	Names of courses ending with examination	Semester
ELR051371W	Selected problems of circuit theory	1
ELR053262W	Electromechanical drive systems	1
ELR053268W	Controlled electrical drives - selected problems	2
ELR053269W	Power converters in supply and control system	2
ELR051274W	Strong electrical and magnetic fields in technology	3
	one exam from optional courses block A	4

3. Numbers of allowable deficit of ECTS points after particular semesters

Semester	Allowable deficit of ECTS points after semester
1	5
2	5
3	5

Opinion of student government legislative body

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Date

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Name and surname, signature of student representative

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Date

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Dean's signature