MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"

CURRICULUM

(Enrollment 2019)

APPROVED
by Rector of Igor Sikorsky Kyiv Polytechnic Institute

_____ **Michael Zgurovsky**

_____ 2019

Level **Bachelor**

Speciality **Electric power engineering, electrical engineering and electromechanics**

Educational and professional program **Electromechanical Automation Systems, Electrical Drive and Electromobility**

Graduation Department **Department of Automation of Electromechanical Systems and Electrical Drives**

Form of study **full-time** (full-time, part-time)

Faculty (Institute) Faculty of electric power engineering and automatics

Qualification Bachelor in electric power engineering, electrical engineering and electromechanics

Study duration **3 years 10 months**

Base level Full secondary education

I. Schedule of educational process

YEAR	September				October					November					December				January					January					March				April				May				June				July					August			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
I																			E	E	H	H																			E	E	H	H	H	H	H	H	H	H	H	H
II																			E	E	H	H																			E	E	H	H	H	H	H	H	H	H	H	H
III																			E	E	H	H																			E	E	H	H	H	H	H	H	H	H	H	H
IV																			E	E	H	H										E	P	P	P	P	P	R	R	R	R	A	A								

Symbols: Learning period; E Examination; P Practice; R Research; A Assessment; H Holiday

II. Summary table of time budget (Weeks)

YEAR	Learning period	Examination	Practice	Assessment	Research	Holiday	Total
I	36	4				12	52
II	36	4				12	52
III	36	5				11	52
IV	27	3	5	2	4	2	43

III. Practice

Type of practice	YEAR	Weeks
Pre-diploma Practice	IV	5

IV. Graduates assessment

Subjects	Form of graduates assessment (exam, graduation project)	YEAR
Diploma Project	Defence of Diploma Project	IV

V. Plan of Educational process

Code	Subjects	Distribution for terms (semesters)				ECTS Credits	Number of hours				
		Exams	Final tests	Course projects	Coursework		Total	Lectures/practical lessons			Self-study
								Lectures	Practical	Laboratory	
1	2	3	4	5	6	7	8	9	10	11	12
I. GENERAL TRAINING											
I.1. Natural-scientific training											
ZO1	Higher Mathematics	1,2,3				19,5	585	180	180		225
ZO2	General Physics	1,2				11	330	90	36	36	168
ZO3	Engineering and Computer Graphics		1			4	120	36	36		48
ZO4	Computer Engineering and Programming	1,2				12	360	72	36	72	180
ZO5	Technical Mechanics		2			4	120	54	18		48
	total number of part I.1	7	2			50,5	1515	432	306	108	669
I.2. Basic training (major courses)											
ZO6	Theoretical Fundamentals of Electrical Engineering	3,4				10	300	90	36	36	138
ZO7	Electric Machines	4				6	180	72		36	72
ZO8	Electrotechnical Materials		2			3	90	36		18	36
ZO9	Fundamentals of Metrology and Electrical Measurements	3				4	120	36		18	66
ZO10	Electric Networks and Systems	6				6	180	54		18	108
ZO11	Electrical Part of Stations and Sub-stations	5				4	120	36		18	66
ZO12	Relay Protection and Automation of Power Systems		7			4	120	36		18	66
ZO13	Electrical Drives	5				5	150	36	18	18	78
ZO14	Economics and Production Organization		7			3	90	36	18		36
ZO15	Labor Safety and Civil Protection		6			4	120	36	28	8	48
	total number of part I.2	7	4			49,0	1470	468	100	188	714
I.3. Basic training (optional courses)											
ZV1	Ecology		1			2	60	18	18		24
ZV2	Pre-diploma Practice		8			7,5	225				225
ZV3	Bachelor Thesis					6	180				180
	total number of part I.3		2			15,5	465	18	18		429
I.4. Humanities training (optional courses)											
ZV4	Historical Disciplines (block 1)		2			2	60	18	18		24
ZV5	Ukrainian-language Discipline (block 2)		1			2	60	18	18		24
ZV6	Philosophical Disciplines (block 3)		4			2	60	18	18		24
ZV7	Psychological Disciplines (block 4)		4			2	60	18	18		24
ZV8	Law Disciplines (block 5)		6			2	60	18	18		24
ZV9	Foreign Language		2,4			6	180		144		36
ZV10	Foreign Language for Specific Purposes		6,7			4	120		90		30
ZV11	Physical Education		2,4			5	150		144		6
	total number of part I.4		11			25	750	90	468		192
	TOTAL IN GENERAL TRAINING	14	19			140,0	4200	1008	892	296	2004
II. VOCATIONAL TRAINING											
II.1. Vocational and practical training (major courses)											
PO1	Logic Circuits Synthesis		3			3	90	36	18		36
PO2	Control Theory		3		3	6,5	195	72	18	18	87
PO3	Mathematical methods in Electromechanics		3			3	90	36		18	36
PO4	Automation Systems	4,5			4	12	360	72	36	54	198
PO5	Fundamentals of Field Theory		5			2	60	36			24
PO6	Electrical Drives Theory		6		6	6	180	54	18	18	90
PO7	Mechatronic Systems Theory		6			4	120	54	18		48
PO8	Control of Electrical Drives	6,7		7		12,5	375	108	18	36	213
PO9	Simulation of Electromechanical Systems	7				4,5	135	36		36	63
PO10	Electromechanical Systems for typical industrial Purposes	7	8		8	9	270	90	18	18	144
	total numberof part II.1	6	7	1	4	62,5	1875	594	144	198	939
II.2. Vocational and practical training (optional courses)											
PV1	Industrial Electronics		4			2,5	75	36		18	21
PV2	Nonlinear and Discrete Control Systems		4			5	150	54	18	18	60
PV3	Modeling and Analysis of Electromechanical Systems in MATLAB		5			3	90	36		18	36
PV4	Microprocessor Technologies		5		5	4	120	36		18	66
PV5	Elements and Apparatus of Electromechanical Systems and Electrical Drives		5			4	120	54		18	48
PV6	Power Converters of Electrical Drives	6				4	120	36		18	66
PV7	Electromechanical System Design		7			4	120	18	36		66
PV8	Industrial Electromechanical Systems and Electrical Drives		8			4	120	54			66
PV9	Electrical Mobility and Mechatronics Systems	8				4	120	36		18	66
PV10	Energy Efficiency in Electromechanical Systems		8			3	90	36		18	36
	total number of part II.2	2	8		1	37,5	1125	396	54	144	531
	TOTAL IN VOCATIONAL TRAINING	8	15	1	5	100,0	3000	990	198	342	1470
	TOTAL	22	34	1	5	240	7200	1998	1090	638	3474

Approved by Faculty Academic Council, Meeting protocol №_9 from April 25, 2019

Head of the Department _____/___**Sergey Peresada /**_____

Dean of the Faculty _____**/ Oleksandr Yandulsky /**