



MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"  
**CURRICULUM**  
(Enrolment 2017)

**APPROVED**

by Rector of Igor Sikorsky Kyiv Polytechnic Institute

\_\_\_\_\_ Michael Zgurovsky  
\_\_\_\_\_ 2017

Level Master  
Speciality 131 Applied Mechanics  
Specialization Mechatronic Systems in Mechanical Engineering  
Profile program Educational and Scientific  
Graduation Department Applied Hydro-Aeromechanics and Mechatronics

Form of study full-time  
(full-time, part-time)  
Institute Mechanical Engineering  
Qualification Research Engineer  
Study duration 1 year 9 months  
Base level Bachelor degree

**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																																																				
II																																																				

Symbols:  Learning period  Examination  Practice  Research  Assessment  Holiday

**II. Summary table of time budget (Weeks)**

YEAR	Learning period	Examination	Practice	Assessment	Research	Holiday	Total
I	36	4				12	52
II	18	2	5		12	2	39

**III. Practice**

Type of practice	YEAR	Weeks
Pre-diploma Practice	2	5

**IV. Graduates assessment**

Subjects	Form of graduates assessment (exam, graduation project)	YEAR
Master's Thesis Implementation	Graduation Project	2

**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	
<b>I. GENERAL TRAINING</b>												
<b>I.1. Basic training (major courses)</b>												
1/1	Patenting and Intellectual Property		1			3	90	36	18			36
2/1	Mathematical Simulation of Systems and Processes		3			4	120	36	18			66
<b>total number of part I.1</b>			<b>2</b>			<b>7</b>	<b>210</b>	<b>72</b>	<b>36</b>			<b>102</b>
<b>I.2. Basic training (optional courses)</b>												
4/1	Subject on Sustainable Development Problems		1			2	60	18	18			24
5/1	Workshop on Scientific Communication in Foreign Language		2, 3			4,5	135		108			27
6/1	Management Subject		2			3	90	18	36			36
7/1	Pedagogy Subject		3			2	60	30	6			24
<b>total number of part I.3</b>			<b>5</b>			<b>11,5</b>	<b>345</b>	<b>66</b>	<b>168</b>			<b>111</b>
<b>I.3. Science Research (optional courses)</b>												
8/1	Scientific Work on the Topic of Master's Thesis		1, 3			7,5	225	9	36			180
9/1	Pre-diploma Practice		4			9	270					270
10/1	Master's Thesis Implementation					21	630					630
<b>total number of part I.3</b>			<b>3</b>			<b>37,5</b>	<b>1125</b>	<b>9</b>	<b>36</b>			<b>1080</b>
<b>TOTAL IN GENERAL TRAINING</b>			<b>10</b>			<b>56</b>	<b>1680</b>	<b>147</b>	<b>240</b>			<b>1293</b>
<b>II. VOCATIONAL TRAINING</b>												
<b>II.1. Vocational and practical training (major courses)</b>												
1/c	Multifunctional Mechatronic Systems in Energy Intensive Processes		1			4	120	36	18			66
2/c	Electro-Hydraulic Control Systems in Mechatronics		2		2	7,5	225	54		36		135
3/c	Design of Intelligent Mechatronic Systems		1	1	1	7	210	18		63		129
4/c	Monitoring and Control of Mechatronic Systems		1			4	120	18		27		75
5/c	Electro-Pneumatic Control Systems		1			2,5	75	18		18		39
6/c	Modeling and Research of Mechatronic Objects		2		2	2,5	75	18		18		39
7/c	Logic Control for Mechatronic Systems		2			5	150	18		54		78
8/c	Modular Production Systems		2			5	150	18		54		78
9/c	Flexible Mechatronic Systems		3			6,5	195	36		36		123
<b>total number of part II.1</b>			<b>6</b>	<b>3</b>	<b>2</b>	<b>44</b>	<b>1320</b>	<b>234</b>	<b>18</b>	<b>306</b>		<b>762</b>
<b>II.2. Vocational and practical training (optional courses)</b>												
1/cb	Stepper Motors in Mechatronic Systems		1			4	120	18	9	36		57
2/cb	Diagnosis and Re-Engineering of Mechatronic Systems		2			3,5	105	18		36		51
3/cb	Proportional Hydraulics		3			3,5	105	18		36		51
4/cb	Ultrasonic Actuators in Mechatronics		3			3	90	18		18		54
5/cb	Mathematical Modeling and Forecasting of Mechatronic Systems Energy Efficiency		3		3	6	180	36		36		108
<b>total number of part II.2</b>			<b>3</b>	<b>2</b>	<b>1</b>	<b>20</b>	<b>600</b>	<b>108</b>	<b>9</b>	<b>162</b>		<b>321</b>
<b>TOTAL IN VOCATIONAL TRAINING</b>			<b>9</b>	<b>5</b>	<b>2</b>	<b>64</b>	<b>1920</b>	<b>342</b>	<b>27</b>	<b>468</b>		<b>1083</b>
<b>TOTAL</b>			<b>9</b>	<b>15</b>	<b>2</b>	<b>1</b>	<b>120</b>	<b>3600</b>	<b>489</b>	<b>267</b>	<b>468</b>	<b>2376</b>

Approved by Faculty Academic Council, Meeting protocol № 8 from April 27, 2017

Head of the Department \_\_\_\_\_ O. F. Luhovs'kyy

Director of the Institute \_\_\_\_\_ M. I. Bobyr