



**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**  
**National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"**

**CURRICULUM**

(Enrolment 2021)

**APPROVED**  
 by Head of Academic Council  
 Igor Sikorsky Kyiv Polytechnic

Level Bachelor

Form of study full-time

Specialty Automation and Computer Integrated Technologies

Faculty of Chemical Engineering

Education and Professional program

Qualification Bachelor in Automation and Computer-Integrated Technologies

Mykhaylo ILCHENKO

2021

Automation Hardware and Software

Study duration 3 years 10 months

Base level Full secondary education

Graduation Department Automation Hardware and Software Department

**I. Schedule of educational process**

YEAR	September				October				November				December				January				February				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																																																												
III																																																												
IV																																																												

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
Production	4	5

**IV. Graduates assessment**

Subjects	Form of graduates assessment (exam, graduation project)	YEAR
Bachelor Thesis	Graduation project	4

**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>1. Compulsory educational components</b>											
<b>1.1. General training cycle</b>											
ZO 1	Ukraine in European Historical Development Context		1		1	2	60	18	18		24
ZO 2	Chemistry		1	1	1	3	90	18	18	18	36
ZO 3	Engineering Graphics		1		1	3	90	18	36		36
ZO 4	Physics		1,2		1,2	1,2	10	300	72	36	36
ZO 5	Higher Mathematics		1,2,3		1,2,3	1,2,3	18	540	126	144	270
ZO 6	Professional Speech's Principles		2		2	2	60	18	18		24
ZO 7	Healthy Lifestyle		2		1,2	3	90	18	54		18
ZO 8	Foreign Language		2,4		1,3	6	180		144		36
ZO 9	Scientific Knowledge's Philosophical Foundations		3		3	2	60	18	18		24
ZO 10	Environmental Safety in Engineering Activities		4		4	2	60	18	18		24
ZO 11	Informational Security		5		5	2	60	18	18		24
ZO 12	Foreign Language for Professional Purposes		8	6	5,7	6	180		126		54
ZO 13	Economics and Production's Organization		7	7	7	4	120	36	36		48
ZO 14	Labor Safety and Civil Protection		7	7	7	4	120	36	28	8	48
<b>total number of part 1.1</b>		<b>6</b>	<b>13</b>	<b>8</b>	<b>20</b>	<b>67</b>	<b>2010</b>	<b>414</b>	<b>712</b>	<b>62</b>	<b>822</b>
<b>1.2. Vocational training cycle</b>											

PO 1	Fundamental Information and Communication Technologies		1	1	1	3	90	18		36	36
PO 2	Programming	1.2		2	1.2	10	300	72		72	156
PO 3	Electrical Engineering		2	2	2	4	120	36	18	18	48
PO 4	Computer Graphics		2	2	2	4	120	36		36	48
PO 5	Electronics and Electro-mechanics		3	3	3	4	120	36	18	18	48
PO 6	Automation Hardware	3			3	5	150	36	18	18	78
PO 7	Course Work in Automation Hardware		3			1	30				30
PO 8	Information Systems Design		3.4	4	3.4	6.5	195	54		54	87
PO 9	Technological Measurements and Devices	4	3	3	3.4	8	240	72	18	36	114
PO 10	Course Project in Technological Measurements and Devices		4			1.5	45				45
PO 11	Digital Circuitry Fundamentals	4		4	4	5	150	36	36		78
PO 12	Mathematical Methods in Automation Problems	3.4		3.4	3.4	9	270	72	54		144
PO 13	Processes and Systems Computer Modeling	5		5	5	5	150	36	18	18	78
PO 14	Automation Systems Design		4		4	4	120	36	36		48
PO 15	Course Project in Automation Systems Design		5			1.5	45				45
PO 16	Computer-Integrated Systems Software and Hardware	6			6	6.5	195	36	54		105
PO 17	Course Work in Computer-Integrated Systems Software and Hardware		6			1	30				30
PO 18	Automatic Control Theory	6.7		6	6.7	10	300	72		72	156
PO 19	Course Work in Automatic Control Theory		7			1	30				30
PO 20	Technological Processes and Productions Automation	7			7	6.5	195	36	36	18	105
PO 21	Course Work in Technological Processes and Productions Automation		8			1	30				30
PO 22	Human-Machine Systems	8		8	8	3.5	105	18	18	18	51
PO 23	Production Practice		8			6	180				180
PO 24	Bachelor Thesis					6	180				180
<b>total number of part 1.2</b>		<b>13</b>	<b>14</b>	<b>13</b>	<b>16</b>	<b>113</b>	<b>3390</b>	<b>702</b>	<b>324</b>	<b>414</b>	<b>1950</b>
<b>TOTAL IN NORMATIVE educational components</b>		<b>19</b>	<b>27</b>	<b>21</b>	<b>36</b>	<b>180</b>	<b>5400</b>	<b>1116</b>	<b>1036</b>	<b>476</b>	<b>2772</b>
<b>2. Optional educational components</b>											
<b>2.1. General training cycle (Optional subjects from University catalogue)</b>											
ZV 1	Educational Components #1 from University catalogue		3		3	2	60	18	18		24
ZV 2	Educational Components #2 from University catalogue		4		4	2	60	18	18		24
<b>total number of part 2.1</b>			<b>2</b>		<b>2</b>	<b>4</b>	<b>120</b>	<b>36</b>	<b>36</b>		<b>48</b>
<b>2.2. Vocational training cycle (Optional subjects from Faculty catalogue)</b>											
PV 1	Educational Components #1 from Faculty catalogue		5	5	5	4	120	18	36		66
PV 2	Educational Components #2 from Faculty catalogue		5	5	5	4	120	18	36		66
PV 3	Educational Components #3 from Faculty catalogue		5	5	5	4	120	18	36		66
PV 4	Educational Components #4 from Faculty catalogue		5	5	5	4	120	18	36		66
PV 5	Educational Components #5 from Faculty catalogue		5	5	5	4	120	18	36		66
PV 6	Educational Components #6 from Faculty catalogue		6	6	6	4	120	18	36		66
PV 7	Educational Components #7 from Faculty catalogue		6	6	6	4	120	18	36		66
PV 8	Educational Components #8 from Faculty catalogue		6	6	6	4	120	18	36		66
PV 9	Educational Components #9 from Faculty catalogue		6	6	6	4	120	18	36		66
PV 10	Educational Components #10 from Faculty catalogue		7	7	7	4	120	18	36		66
PV 11	Educational Components #11 from Faculty catalogue		7	7	7	4	120	18	36		66
PV 12	Educational Components #12 from Faculty catalogue		8	8	8	4	120	18	36		66
PV 13	Educational Components #13 from Faculty catalogue		8	8	8	4	120	18	36		66
PV 14	Educational Components #14 from Faculty catalogue		8	8	8	4	120	18	36		66
<b>total number of part 2.2</b>			<b>14</b>	<b>14</b>	<b>14</b>	<b>56</b>	<b>1680</b>	<b>252</b>	<b>504</b>		<b>924</b>
<b>TOTAL IN SELECTIVE educational components</b>			<b>16</b>	<b>14</b>	<b>16</b>	<b>60</b>	<b>1800</b>	<b>288</b>	<b>540</b>		<b>972</b>
<b>TOTAL</b>		<b>19</b>	<b>43</b>	<b>35</b>	<b>52</b>	<b>240</b>	<b>7200</b>	<b>1404</b>	<b>1576</b>	<b>476</b>	<b>3744</b>

*Approved by University Academic Council, Meeting protocol № 3 from March 15, 2021*

Head of the Department \_\_\_\_\_ / Prof. Anatolii Zhuchenko      Dean of the Faculty \_\_\_\_\_ / Prof. Yevgen Panov