

Cabinet of Ministers of Ukraine
National University of Life and Environmental Science of Ukraine

CURRICULUM
Of training specialists 2013 year of entry

Education qualification level	«Bachelor»
Area of expertise	<u>0502 - AUTOMATION AND CONTROL</u>
in the direction	<u>6.050202 - AUTOMATION AND COMPUTER-INTEGRATED TECHNOLOGIES</u>
Form of education	High
Apprenticeship	<u>3 years 10 months</u>
Qualifying graduates	Junior Engineer in Automation and Computer Technologies

Implement training of bachelors

INSTITUTE OF	<u>ENERGETICS AND AUTOMATION</u>
FACULTY OF	<u>ENERGETICS AND AUTOMATION</u>

II. PLAN OF EDUCATIONAL PROCESS																							
№	Course title	The total amount		Forms of knowledge control according to semesters			Classroom hours				self study	Distribution of weekly hourse by the courses and semesters											
		acad hours	credits	exam	test	course project	whole					1 nd course	2 nd course	3 nd course	4 nd course								
								Semester															
								1	2	3						4	5	6	7	8			
								Quantity week in a semester															
								16	16	16						16	15	10	15	8			
1	2	3	4	5	6	7	8	9	10	11	12	15	16	17	18	19	20	21	22				
1. Cycle of humanitarian and socio-economic training																							
1.1. NORMATIVE ACADEMIC DISCIPLINES																							
1	History of Ukraine	108	3,0	1			48	16		32	60	3											
2	Ukrainian language (for professional purposes)	108	3,0	1			48	16		32	60	3											
3	The history of Ukrainian culture	72	2,0	2			38	19		19	34		2										
4	Philosophy	108	3,0	3			48	32		16	60			3									
5	Foreign Language	180	5,0	2	1		121			121	59	4	3										
6	Physical Education	324	9,0		1-4		140			140	184	2	2	2	2								
7	Political Science	72	2,0		7		32	16		16	40							2					
The total number of cycles		648	18	9		0	335	99	0	236	313	12	7	5	2	0	0	2	0				
1.2. SELECTIVE STUDYING DISCIPLINES																							
1	Economic Theory	72	2,0	5			48	32		16	24					3							
2	Sociology	72	2,0		7		32	16		16	40							2					

3	Jurisprudence	72	2,0		6		38	19		19	34					2		
4	Psychology	72	2,0		8		28	14		14	44							2
5	Religiology	72	2,0		4		38	19		19	34				2			
	The total number of cycles	360	10			0	184	100		84	176				2	3	2	2
	Total	1008	28			0	519	199	0	320	489	12	7	5	4	3	2	4
	2. Cycle of natural science (basic) training																	
	2.1. NORMATIVE ACADEMIC DISCIPLINES																	
1	Principles of Ecology	54	1,5		3		32	16		16	22			2				
2	High Maths	648	18,0	1,4	2,3		280	105		175	368	5	5	3	3			
3	Numerical Methods	180	5,0	2			57	19		38	123		3					
4	Physics	360	10,0	3	2		143	70	54	19	217		5	3				
5	Chemistry	108	3,0		1		64	32	32		44	4						
6	Engineering Graphics	108	3,0		2		57			57	51		3					
7	Computer Technologies and Programming	360	10,0	3			128	32	32	64	232			8				
	The total number of cycles	1818	50,5	3			761	274	118	369	1057	9	16	16	3	0	0	0
	Total	1818	50,5	3			761	274	118	369	1057	9	16	16	3	0	0	0
	3. Cycle professional and practical training																	
	3.1. NORMATIVE ACADEMIC DISCIPLINES																	
1	Vital Safety	72	2,0		3		32	16		16	40			2				
2	Electronics and microprocessor technology	252	7,0	5	4	15	197	89	54	54	40				7	4		
3	Design automation systems	288	8,0	7		30	96	32		64	162							6

4	Technical automation	288	8,0	6		15	152	76	38	38	111						8		
5	Metrology, measuring and technological equipment	288	8,0	5	4	15	121	51	35	35	152				3	4			
6	Automation of technological processes and productions	252	7,0	6			95	38	57		157						5		
7	Basics of labor protection	54	1,5	7			32	16	16		22							2	
8	Identification and Simulation technological objects	180	5,0	7			64	32		32	116							4	
9	Theory of automatic control	360	10,0	6	5	15	140	70	35	35	210					4	4		
10	Electrical engineering and electrical engineering	180	5,0	3	4	15	102	51	32	19	63			4	2				
11	Educational Practice	360	10,0																
12	Industrial practice	180	5,0																
The total number of cycles		2754	76,5			105	1031	471	267	293	1073	0	0	6	12	12	17	12	0
3.2. SELECTIVE DISCIPLINES (University Choice Disciplines)																			
1	Mathematical modelling of computer	72	2,0		5		48	16	16	16	24					3			
2	Software Computer Integrated Technologies	72	2,0		7		48	16	16	16	24							3	
3	Computer Graphics	108	3,0	3		15	48	16	32		45			3					
4	Fundamentals of computer use	90	2,5		1		54	16	38		36	3							
5	Office and communication equipment	72	2,0		8		28	14	14		44								2
6	Programming at real-time system	72	2,0		8	15	28	14		14	29								2
7	Technology of production, storage and processing of agricultural	126	3,5	2	1		89	35	38	16	37	2	3						

	products																	
8	Fundamentals of electrical materials	72	2,0		2		38	19	19		34		2					
9	Computer Integrated Technologies	90	2,5	4			76	19	57		14				4			
10	Instrumentation control systems	90	2,5		5		32	16	16		58					2		
11	Automatic control systems	90	2,5	7			48	16	16	16	42						3	
12	Thermodynamics and Heat Engineering	90	2,5	5			64	32	16	16	26					4		
13	Hydro gas dynamics	90	2,5	4			57	19	19	19	33				3			
14	Typical technological objects and processes of production	72	2,0		5		48	16	16	16	24					3		
15	Adaptive control systems and control	72	2,0		8		56	28	28		16							4
16	Electrical technologies in agriculture	72	2,0		7		32	16	16		40						2	
17	Automatic Electric	72	2,0	8			42	28	14		30							3
18	Reliability and diagnostics	72	2,0		6		57	19		38	15						3	
19	Introduction to the profession	72	2,0		1		16	16			56	1						
20	Simulation and optimization of control	72	2,0	8			42	28	14		30							3
21	Basics of technical operation	72	2,0		8	15	42	14	14	14	15							3
22	Digital control systems	90	2,5	8			42	28	14		48							3
23	information Theory	90	2,5		6		76	38	19	19	14						4	
24	Fundamentals of Scientific Research	72	2,0		8		28	14		14	44							2

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III. STRUCTURE of the CURRICULUM

Cycle of disciplines	Hours	Credits	%
1. Cycle of humanitarian and socio-economic training			
1.1. Normative part	648	18,0	8
1.2. Selective part (chosen by the student)	360	10,0	4
2. Cycle mathematical, natural-scientific training			
2.1. Normative part	1818	50,5	21
3. Cycle professional and practical training			
3.1. Normative part	2754	76,5	33
3.2. Selective part (at the option of University)	2880	80,0	34
STATE CERTIFICATION	5634	156,5	67
In all	8460	235	100

VII. STATE CERTIFICATION

№	Component of certification	Hours	Credits	Week
1	Diploma project	180	5	5

IV. SUMMARY TIME BUDGET(WEEKS)

Course	Theoretical study	Examination period	Practical training	State certification	Holidays	In all
1	34	4	5		8	51
2	34	4	5		8	51
3	34	4	5		8	51
4	29	4		1	3	43
In all	131	16	15	1	27	196

V. PRACTICAL TRAINING

№	Kind of practise	Semester	Hours	Credits	Weeks
1	Study on the technology of production and processing of agricultural products	2	72	2	2
2	Educational introductory of automated technologies in agriculture	2	108	3	3
3	Educational technology with computing technology	4	180	5	5
4	Manufacturing of computer-integrated technologies	6	180	5	5

VI. COURSEWORK AND PROJECTS

№	Subjects	Hours	Credits	Coursework	Course project
1	Computer Graphics	15	0,5	CW	
2	Comprehensive course project in the disciplines "Electronics and Microprocessor Technology" and "MetrologyTechnological measurement and instrumentation"	30	1		CP
3	Electrical engineering and electrical engineers	15	0,5	CW	
4	Designing of automation systems	30	1		CP
5	Comprehensive course project in the disciplines "theory of automatic control" and "Technical means automation"	30	1		CP
6	Comprehensive course project in the disciplines "Fundamentals of technical operation, programming real-time systems"	30	1		CP

