

V. EDUCATION PROCESS PLAN

Code in accordance with the EPP	Name of academic discipline	Semester distribution			Number of ECTS credits	Number of hours						Distribution of classroom hours per a week and ECTS credits per a semester						Department
		Exams	Tests	Individual tasks		Total amount	Classroom			Independent work	1 course		2 course					
							Total	including			Semesters							
		Lectures	Laboratory works	Practical studies				20	20		16	1	2	3				
						Number of weeks in the semester												
		Classroom hours	ECTS credits	Classroom hours		ECTS credits	Classroom hours	ECTS credits										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Obligatory educational components				28,0	840,0	336,0	160,0	80,0	96,0	504,0	11,0	15,0	10,0	13,0			
1.1	General training				9,0	270,0	96,0	32,0		64,0	174,0	4,0	6,0	2,0	3,0			
GT 1	Intellectual Property		1	R	3,0	90,0	32,0	16,0		16,0	58,0	2,0	3,0					325
GT 2	Innovative Entrepreneurship and Startup Projects Management		1	R	3,0	90,0	32,0	16,0		16,0	58,0	2,0	3,0					202
GT 3	Foreign Language in Professional Field		2	R	3,0	90,0	32,0			32,0	58,0			2,0	3,0			275
1.2	Professional training				19,0	570,0	240,0	128,0	80,0	32,0	330,0	7,0	9,0	8,0	10,0			
PT 1	Computer Modeling of Systems and Processes p. 1	1		C	5,0	150,0	64,0	32,0	16,0	16,0	86,0	4,0	5,0					128
PT 2	Basics of the scientific research		1	C	4,0	120,0	48,0	32,0		16,0	72,0	3,0	4,0					128
PT 1	Computer Modeling of Systems and Processes p. 2	2		CG	5,0	150,0	64,0	32,0	32,0		86,0			4,0	5,0			128
PT 3	Specialized Electronic Systems	2		C	5,0	150,0	64,0	32,0	32,0		86,0			4,0	5,0			128
2	Practical training				15,0	450,0					450,0							15,0
PP 1	Pre-graduation practice		3		15,0	450,0					450,0							15,0
3	Attestation	3			15,0	450,0					450,0							15,0
4	Optional educational component				32,0	960,0	416,0	224,0	128,0	64,0	544,0	12,0	15,0	14,0	17,0			
4.1	Profile training				20,0	600,0	256,0	128,0	96,0	32,0	344,0	9,0	11,0	7,0	9,0			
4.1.1	Profiled discipline package 01 "Industrial electronics"				20,0	600,0	256,0	128,0	96,0	32,0	344,0	9,0	11,0	7,0	9,0			
OP 1.1	Digital Signal Processing	1		C	5,0	150,0	64,0	32,0	32,0		86,0	4,0	5,0					128
OP 1.2	Power Conversion Systems	1		CW	6,0	180,0	80,0	32,0	32,0	16,0	100,0	5,0	6,0					128
OP 1.3	Electronic Systems of Adjustment	2		C	4,0	120,0	48,0	32,0	16,0		72,0			3,0	4,0			128
OP 1.4	Energy Saving in Power Supply Systems with Semiconductor Devices	2		CP	5,0	150,0	64,0	32	16	16,0	86,0			4,0	5,0			128
4.1.2	Profiled discipline package 02 "Biomedical electronics"				20,0	600,0	256,0	128,0	112,0	16,0	344,0	9,0	11,0	7,0	9,0			
OP 2.1	Program Development for Microcontroller Systems	1		CG	5,0	150,0	64,0	32,0	32,0		86,0	4,0	5,0					128

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	29	
OP 2.2	Theory of Automatic Regulation	1		CW	6,0	180,0	80,0	32,0	32,0	16,0	100,0	5,0	6,0					128	
OP 2.3	Electronic Devices of Radiodiagnosis	2		CP	5,0	150,0	64,0	32,0	32,0		86,0			4,0	5,0			128	
OP 2.4	Methods of Laboratory Diagnostics	2		C	4,0	120,0	48,0	32,0	16,0		72,0			3,0	4,0			128	
4.2	Optional student disciplines of the profile preparation according to the list (the list is attached)				12,0	360,0	160,0	96,0	32,0	32,0	200,0	3,0	4,0	7,0	8,0			128	
Total for education period					90,0	2700,0	752,0	384,0	208,0	160,0	1948,0	23,0	30,0	24,0	30,0		30,0		
Hours per week												23,0		24,0					
Number of exams												4		5					
Number of tests												4		2					
Number of course projects (works)												1		1					
Numbers of disciplines per semester												7,0		7,0					

Individual tasks	
C	Calculated task
CG	Calculated and graphic task
R	Report
CP	Course project
CW	Course work

Approved by the Academic Council of NTU "KhPI"
 Protocol № _____ from _____ 2023

Vice-rector of Scientific-and-Pedagogical Work _____ **Gennadiy KHRYPUNOV**
signature full name

Head of the Educational Program "Electronics" _____ **Volodymyr IVAKHNO**
signature full name

Director of the Educational and Scientific
 Institute of Energy, Electronics and
 Electromechanics
name of the Institute

_____ **Roman TOMASHEVSKYI**
signature full name

Head of the Department
name of department

_____ **Serhii KRYVOSHEIEV**
signature full name

List of optional student disciplines of the profile training

Code in accordance with the EPP	Name of academic discipline	Semester distribution			Number of ECTS credits	Number of hours						Distribution of classroom hours per a week and ECTS credits per a semester						Department
		Exams	Tests	Individual tasks		Total amount	Classroom			Independent work	1 course		2 course		Semesters			
							Total	including			1	2	3	Number of weeks in the semester				
		Lectures	Laboratory works	Practical studies		20		20		16								
						Classroom hours	ECTS credits	Classroom hours	ECTS credits	Classroom hours	ECTS credits							
		1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	
4.2	Optional student disciplines of the profile training																	
OPT 1	Programming of Embedded Systems	1		C	4,0	120,0	48,0	32,0	16,0		72,0	3,0	4,0					128
OPT 2	Information and Encoding Theory	1		C	4,0	120,0	48,0	32,0	16,0		72,0	3,0	4,0					128
OPT 3	Pathological Physiology	1		R	4,0	120,0	48,0	32,0		16,0	72,0	3,0	4,0					128
OPT 4	Real-Time Systems	2		C	4,0	120,0	64,0	32,0	32,0		56,0			4,0	4,0			128
OPT 5	Internet of Things Technology	2		R	4,0	120,0	64,0	32,0		32,0	56,0			4,0	4,0			128
OPT 6	Quality Management System in Medical Instrument Engineering	2		R	4,0	120,0	64,0	32,0	32,0		56,0			4,0	4,0			128
OPT 7	Special Issues of Power Electronics		2	C	4,0	120,0	48,0	32,0	16,0		72,0			3,0	4,0			128
OPT 8	Synthesis of Digital Devices		2	C	4,0	120,0	48,0	32,0		16,0	72,0			3,0	4,0			128
OPT 9	Mathematical Methods of Medical Signal Processing		2	C	4,0	120,0	48,0	32,0		16,0	72,0			3,0	4,0			128

CONTENT of CURRICULUM

for the master's training:

by specialty

171

Electronics

Code in the EPP	Discipline title	Total amount				Department code
		ECTS credits	Hours	Semesters		
				Exam	Test	
1	2	3	4	5	6	7
1	Obligatory educational components	28,0	840,0			31%
1.1	General training	9,0	270,0			10%
GT 1	Intellectual Property	3,0	90,0		1	325
GT 2	Innovative Entrepreneurship and Startup Projects Management	3,0	90,0		1	202
GT 3	Foreign Language in Professional Field	3,0	90,0		2	275
1.2	Professional training	19,0	570,0			21%
PT 1	Computer Modeling of Systems and Processes p. 1	5,0	150,0	1		128
PT 2	Basics of the scientific research	4,0	120,0		1	128
PT 1	Computer Modeling of Systems and Processes p. 2	5,0	150,0	2		128
PT 3	Specialized Electronic Systems	5,0	150,0	2		128
2	Practical training	15,0	450,0			17%
PP 1	Pre-graduation practice	15,0	450,0		3	128
3	Attestation	15,0	450,0	3		17%
4	Optional educational component	32,0	960,0			36%
4.1	Profile training	20,0	600,0			22%
4.1.1	Profiled discipline package 01 "Industrial electronics"	20,0	600,0			
OP 1.1	Digital Signal Processing	5,0	150,0	1		128
OP 1.2	Power Conversion Systems	6,0	180,0	1		128
OP 1.3	Electronic Systems of Adjustment	4,0	120,0	2		128
OP 1.4	Energy Saving in Power Supply Systems with Semiconductor Devices	5,0	150,0	2		128
4.1.2	Profiled discipline package 02 "Biomedical electronics"	20,0	600,0			
OP 2.1	Program Development for Microcontroller Systems	5,0	150,0	1		128
OP 2.2	Theory of Automatic Regulation	6,0	180,0	1		128
OP 2.3	Electronic Devices of Radiodiagnosis	5,0	150,0	2		128
OP 2.4	Methods of Laboratory Diagnostics	4,0	120,0	2		128
4.2	Optional student disciplines of the profile preparation according to the list (the list is attached)	12,0	360,0			13%
	Total for education period	90,0	2700,0			