



Total	122	30	4	2	2	38	198
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Proficiency examination		
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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	
PT 14	Distributed computing and cloud services		5		3.0	90.0	48.0	16.0	32.0		42.0									3.0	3.0							321	
PT 15	Architecture and Design of Software (Part 1)	5			5.0	150.0	64.0	32.0	32.0		86.0									4.0	5.0							321	
PT 15	Architecture and Design of Software (Part 2)	6		CP	3.0	90.0	64.0	32.0	32.0		26.0											4.0	3.0					321	
PT 8	Operations Research (Part 2)		6	C	5.0	150.0	48.0	16.0	32.0		102.0											3.0	5.0					321	
PT 16	Software quality, testing and support	6			3.0	90.0	64.0	32.0	32.0		26.0											4.0	3.0					321	
PT 17	Fundamentals of cybersecurity	6			3.0	90.0	48.0	16.0	32.0		42.0											3.0	3.0					321	
PT 18	Decision making theory	7			4.0	120.0	64.0	48.0	16.0		56.0													4.0	4.0			321	
PT 19	Mathematical modeling and systems analysis		7	CW	4.0	120.0	32.0	16.0	16.0		88.0													2.0	4.0			321	
PT 20	Fundamentals of knowledge bases		8	CP	3.0	90.0	30.0	20.0	10.0		60.0															3.0	3.0	321	
PT 21	Methods of computational intelligence	7			5.0	150.0	64.0	32.0	32.0		86.0													4.0	5.0			321	
PT 22	Intelligent control systems		8		4.0	120.0	30.0	20.0	10.0		90.0															3.0	4.0	321	
PT 23	Intelligent data analysis		8		3.0	90.0	30.0	20.0	10.0		60.0															3.0	3.0	321	
PT 24	Fundamentals of project management	8			3.0	90.0	30.0	20.0	10.0		60.0															3.0	3.0	321	
PT 25	Project (practice)		6		6.0	180.0					180.0												6.0					321	
PT 26	Pre-graduation Practice		8		6.0	180.0					180.0																6.0		
	Attestation*				6.0	180.0					180.0																6.0		
<b>2</b>	<b>Optional educational components</b>				<b>60.0</b>	<b>1800.0</b>	<b>800.0</b>	<b>160.0</b>	<b>128.0</b>		<b>1000.0</b>					<b>12.0</b>	<b>13.0</b>	<b>12.0</b>	<b>15.0</b>	<b>13.0</b>	<b>14.0</b>	<b>6.0</b>	<b>6.0</b>	<b>7.0</b>	<b>12.0</b>				
2.1	Profile training				25.0	750.0	288.0	160.0	128.0		462.0					4.0	4.0	4.0	6.0	3.0	4.0	3.0	3.0	4.0	8.0				
2.1.1	Profiled discipline package 01 "Research and Development"				25.0	750.0	288.0	160.0	128.0		462.0					4.0	4.0	4.0	6.0	3.0	4.0	3.0	3.0	4.0	8.0				
OP1.1	Probabilistic models		3		4.0	120.0	64.0	32.0	32.0		56.0				4.0	4.0												321	
OP1.2	Knowledge representation models		4		6.0	180.0	64.0	32.0	32.0		116.0				4.0	4.0		4.0	6.0									321	
OP1.3	Fuzzy logic and fuzzy systems		5		4.0	120.0	48.0	32.0	16.0		72.0									3.0	4.0							321	
OP1.4	Machine Learning		6		3.0	90.0	48.0	32.0	16.0		42.0											3.0	3.0					321	
OP1.5	Experiment planning		7		4.0	120.0	32.0	16.0	16.0		88.0													2.0	4.0			321	
OP1.6	Intelligent systems modeling technologies		7		4.0	120.0	32.0	16.0	16.0		88.0													2.0	4.0			321	
2.1.2	Profiled discipline package 02 "Software Development and Startup"				25.0	750.0	288.0	160.0	112.0	16.0	462.0					4.0	4.0	4.0	6.0	3.0	4.0	3.0	3.0	4.0	8.0				
OP2.1	Internet marketing		3		4.0	120.0	64.0	32.0	32.0		56.0				4.0	4.0												321	
OP2.2	Startup business models		4		6.0	180.0	64.0	32.0	32.0		116.0				4.0	6.0												321	
OP2.3	Startup business analytics		5		4.0	120.0	48.0	32.0	16.0		72.0									3.0	4.0							321	
OP2.4	Fundamentals of business planning		6		3.0	90.0	48.0	32.0	16.0		42.0											3.0	3.0					321	
OP2.5	Fundamentals of prototyping		7		4.0	120.0	32.0	16.0	16.0		88.0													2.0	4.0			321	
OP2.6	Fundamentals of entrepreneurship		7		4.0	120.0	32.0	16.0		16.0	88.0													2.0	4.0			321	
2.1.3	Profiled discipline package 03 "Innovation Campus"				25.0	750.0	288.0	160.0	128.0		462.0					4.0	4.0	4.0	6.0	3.0	4.0	3.0	3.0	4.0	8.0				
OP3.1	Development of corporate information systems (part 1)		3		4.0	120.0	64.0	32.0	32.0		56.0				4.0	4.0												321	
OP3.2	Development of corporate information systems (part 2)		4		6.0	180.0	64.0	32.0	32.0		116.0							4.0	6.0									321	
OP3.3	Databases for corporate information systems		5		4.0	120.0	48.0	32.0	16.0		72.0									3.0	4.0							321	

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													
OP3.4	Architecture of corporate information systems		6		3.0	90.0	48.0	32.0	16.0		42.0											3.0	3.0					321													
OP3.5	Project workshop		7		4.0	120.0	32.0	16.0	16.0		88.0													2.0	4.0			321													
OP3.6	Formation and Development of IT Project Teams		7		4.0	120.0	32.0	16.0	16.0		88.0													2.0	4.0			321													
2.2	Optional student disciplines of the profile preparation according to the list				24.0	720.0	368.0				352.0				8.0	9.0	8.0	9.0	7.0	6.0																					
2.3	Optional student disciplines from the general university catalog of disciplines				11.0	330.0	144.0				186.0									3.0	4.0	3.0	3.0	3.0	4.0																
OD1	Discipline 1		5		4.0	120.0	48.0				72.0									3.0	4.0																				
OD2	Discipline 2		6		3.0	90.0	48.0				42.0											3.0	3.0																		
OD3	Discipline 3		7		4.0	120.0	48.0				72.0													3.0	4.0																
<b>Total for education period</b>					<b>240.0</b>	<b>7200.0</b>	<b>3268.0</b>				<b>3932.0</b>	<b>29.0</b>	<b>30.0</b>	<b>30.0</b>	<b>30.0</b>	<b>29.0</b>	<b>30.0</b>	<b>29.0</b>	<b>30.0</b>	<b>26.0</b>	<b>30.0</b>	<b>26.0</b>	<b>30.0</b>	<b>24.0</b>	<b>30.0</b>	<b>18.0</b>	<b>30.0</b>														
Hours per week												29.0	30.0	30.0	29.0	29.0	26.0	26.0	24.0	18.0																					
Number of exams																																									
Number of tests																																									
Number of course projects (works)																																									
Numbers of disciplines per semester												8	7	6	6	6	8	8	6																						

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 \_\_\_\_\_ 202\_\_

Vice-rector of Scientific-and-Pedagogical Work

\_\_\_\_\_  
 Signature Full name  
**Oleksandr TRUSH**

Head of the educational program  
 Computer Science and Intelligent  
 Svstems

\_\_\_\_\_  
 Signature Full name  
**Andrii KOPP**

Head of Faculty of computer sciences and  
 software engineering

name of the Institute

\_\_\_\_\_  
 Signature Full name  
**Maksim Malko**

Head of the Department of Software  
 Engineering and Management  
 Information Technologies

name of department

\_\_\_\_\_  
 Signature Full name  
**Mykhailo GODLEVSKYI**

departments



## CONTENT of CURRICULUM

for the training of the first (bachelor) level:  
by specialty

122

Computer Sciences

Number in order	Discipline title	Total amount				Department code
		ECTS credits	Hours	Semesters		
				Exam	Test	
1	2	3	4	5	6	7
<b>1</b>	<b>Obligatory educational components</b>	<b>180.0</b>	<b>5400.0</b>			<b>75%</b>
<b>1.1</b>	<b>General training</b>	<b>52.0</b>	<b>1560.0</b>			<b>28,89%</b>
GT 1	History and culture of Ukraine	3.0	90.0	1		310
GT 2	Ukrainian language (professional orientation)	3.0	90.0	1		273
GT 3	English for Specific Purposes	12.0	360.0	8	1-2, 6-7	275
GT 4	Philosophy	3.0	90.0	8		307
GT 5	Higher Mathematics (Part 1)	6.0	180.0	1		324
GT 5	Higher Mathematics (Part 2)	6.0	180.0	2		324
GT 6	Physics	4.0	120.0	1		168
GT 7	Green computing	3.0	90.0	7		321
GT 8	Physical education	12.0	360.0		1 - 6	302
<b>1.2</b>	<b>Professional training</b>	<b>128.0</b>	<b>3840.0</b>			<b>71,11%</b>
PT 1	Algorithmization and programming (part 1)	5.0	150.0	1		321
PT 1	Algorithmization and programming (part 2)	5.0	150.0	2		321
PT 2	Fundamentals of computer science and artificial intelligence methods	4.0	120.0		1	321
PT 3	Probability theory and mathematical statistics	6.0	180.0	2		321
PT 4	Operating Systems	4.0	120.0		2	321
PT 5	Algorithms and data structures	4.0	120.0		2	321
PT 6	Discrete Mathematics	5.0	150.0		3	321
PT 7	Numerical Methods	4.0	120.0	4		321
PT 8	Operations Research (Part 1)	6.0	180.0	5		321
PT 9	Databases (part 1)	3.0	90.0	3		321
PT 10	Object-oriented programming. Introductory practice	4.0	120.0	3		321
PT 11	Computer networks	3.0	90.0		3	321
PT 12	Fundamentals of web development	3.0	90.0	4		321
PT 9	Databases (part 2)	3.0	90.0	4		321
PT 13	Fundamentals of business analysis	3.0	90.0		4	321
PT 14	Distributed computing and cloud services	3.0	90.0		5	321
PT 15	Architecture and Design of Software (Part 1)	5.0	150.0	5		321
PT 15	Architecture and Design of Software (Part 2)	3.0	90.0	6		321
PT 8	Operations Research (Part 2)	5.0	150.0		6	321
PT 16	Software quality, testing and support	3.0	90.0	6		321
PT 17	Fundamentals of cybersecurity	3.0	90.0	6		321
PT 18	Decision making theory	4.0	120.0	7		321
PT 19	Mathematical modeling and systems analysis	4.0	120.0		7	321
PT 20	Fundamentals of knowledge bases	3.0	90.0		8	321
PT 21	Methods of computational intelligence	5.0	150.0	7		321
PT 22	Intelligent control systems	4.0	120.0		8	321
PT 23	Intelligent data analysis	3.0	90.0		8	321
PT 24	Fundamentals of project management	3.0	90.0	8		321
PT 25	Project (practice)	6.0	180.0		6	321
PT 26	Pre-graduation Practice	6.0	180.0		8	
	Attestation*	6.0	180.0			
<b>2</b>	<b>Optional educational components</b>	<b>60.0</b>	<b>1800.0</b>			<b>25%</b>
<b>2.1</b>	<b>Profile training</b>	<b>25.0</b>	<b>750.0</b>			<b>41,67%</b>
<b>2.1.1</b>	<b>Profiled discipline package 01 "Research and Development"</b>	<b>25.0</b>	<b>750.0</b>			
OP1.1	Probabilistic models	4.0	120.0		3	321
OP1.2	Knowledge representation models	6.0	180.0		4	321
OP1.3	Fuzzy logic and fuzzy systems	4.0	120.0		5	321
OP1.4	Machine Learning	3.0	90.0		6	321
OP1.5	Experiment planning	4.0	120.0		7	321
OP1.6	Intelligent systems modeling technologies	4.0	120.0		7	321
<b>2.1.2</b>	<b>Profiled discipline package 02 "Software Development and Startup"</b>	<b>25.0</b>	<b>750.0</b>			
OP2.1	Internet marketing	4.0	120.0		3	321
OP2.2	Startup business models	6.0	180.0		4	321
OP2.3	Startup business analytics	4.0	120.0		5	321
OP2.4	Fundamentals of business planning	3.0	90.0		6	321
OP2.5	Fundamentals of prototyping	4.0	120.0		7	321
OP2.6	Fundamentals of entrepreneurship	4.0	120.0		7	321
<b>2.1.3</b>	<b>Profiled discipline package 03 "Innovation Campus"</b>	<b>25.0</b>	<b>750.0</b>			
OP3.1	Development of corporate information systems (part 1)	4.0	120.0		3	321
OP3.2	Development of corporate information systems (part 2)	6.0	180.0		4	321
OP3.3	Databases for corporate information systems	4.0	120.0		5	321
OP3.4	Architecture of corporate information systems	3.0	90.0		6	321
OP3.5	Project workshop	4.0	120.0		7	321
OP3.6	Formation and Development of IT Project Teams	4.0	120.0		7	321
<b>2.2</b>	<b>Optional student disciplines of the profile preparation according to the list</b>	<b>24.0</b>	<b>720.0</b>			<b>40%</b>
<b>2.3</b>	<b>Optional student disciplines from the general university catalog of disciplines</b>	<b>11.0</b>	<b>330.0</b>			<b>18,33%</b>
OD1	Discipline 1	4.0	120.0		5	
OD2	Discipline 2	3.0	90.0		6	
OD3	Discipline 3	4.0	120.0		7	
	<b>Total for education period</b>	<b>240.0</b>	<b>7200.0</b>			