



**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
NATIONAL TECHNICAL UNIVERSITY "KHARKIV POLYTECHNIC INSTITUTE"**

CURRICULUM

**educational and professional program
Modern programming, mobile devices and computer games**

Rector of NTU "KhPI" _____ for the training second (master's) level _____ in the field of know_12 Information Technologies
(educational level) (knowledge field code and title)

_____ Yevgen SOKOL _____ by specialty _____ - 123 Computer Engineering _____
Qualification Master of Computer Engineering

"__" _____ 2023 p. _____
Form of study full-time _____
Period of study on the basis of 1 year 4 months _____
_____ basis of bachelor's degree

I. Schedule of education process

Course	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
1																	T	V	E	E	E	V																	T	E	E	E	V	V	V	V	V	V	V	V	V	V
2	P	P	P	P	P	P	P	P	Q	Q	Q	Q	Q	Q	Q	Q																																				

Legend: Theoretical study E Exam Session P Practice Q Preparation of qualification work T Test week V Vacation D Defending of qualification work

II. Consolidated budget time (in weeks)

Course	Theoretical study	Exam Session	Practice	Attestation	Preparation of qualification project (work)	Vacation	Total
1	32	8				12	52
2			8		8		16
total	32	8	8		8	12	68

III. Practice

Type of practice	Duration (in weeks)	Semester
Prediploma	8	3

IV. Attestation

Measures	Number of ECTS credits	Semester
Preparation of qualification work	11,0	3
Defending of qualification work	4,0	
Proficiency examination		

CONTENT of CURRICULUM

for the master's training:

by specialty

123

Computer Engineering

Number in order	Discipline title	Total amount				Department code
		ECTS credits	Hours	Semester		
				Exam	Test	
1	2	3	4	5	6	7
1	Obligatory educational components	36,0	1080,0			40%
1.1	General training	9,0	270,0			10%
GT1	Intellectual Property	3,0	90,0		2	202
GT2	Foreign Language in Professional Field	3,0	90,0		1	275
GT3	Innovative Entrepreneurship and Startup project Management	3,0	90,0		1	202
1.2	Special (professional) training	27,0	810,0			30%
PT1	Modern Technologies of Secure Programming	4,0	120,0	1		326
PT2	Tools and Algorithms for Decision Making	5,0	150,0	1		326
PT3	Process Optimization in Multi-service Systems and Networks	4,0	120,0	2		326
PT4	Programming for Global Networks	5,0	150,0	2		326
PT5	Fundamentals of Neurocomputing	4,0	120,0	2		326
PT6	Fundamentals of Scientific Researches	5,0	150,0	2		326
2	Practical training	15,0	450,0			17%
PT 1	Pre-graduation Practice*	15,0	450,0			
3	Attestation	15,0	450,0			17%
4	Optional educational component	24,0	720,0			27%
4.1	Profile training	16,0	480,0			18%
4.1.1	Profiled discipline package 01 "Computer Systems and Networks"	16,0	480,0			
OP1.1	Hardware for Local and Wide Area Networks	5,0	150,0	1		326
OP1.2	Microcontroller Devices Engineering	6,0	180,0	1		326
OP1.3	Design of Corporate Networks	5,0	150,0	2		326
4.1.2	Profiled discipline package 02 "System Programming"	16,0	480,0			
OP2.1	Corporate Networking Programming	5,0	150,0	1		326
OP2.2	Theory of Translator Construction	6,0	180,0	1		326
OP2.3	Machine Learning	5,0	150,0	2		326
4.1.3	Profiled discipline package 03 "Specialized Computer Systems"	16,0	480,0			
OP3.1	Corporate Networking Software	5,0	150,0	1		326
OP3.2	Computer Game Content Modeling and Optimization	6,0	180,0	1		326
OP3.3	Methods and Means for Modeling Complex Dynamic Objects	5,0	150,0	2		326
4.2	Optional student disciplines of the profile preparation according to the list (the list is attached)	8,0	240,0			9%
	Total for education period	90,0	2700,0			

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	29	
4.1.3	Profiled discipline package 03 "Specialized Computer Systems"				16,0	480,0	208,0	96,0	64,0	48,0	272,0	9,0	11,0	4,0	5,0				
OP3.1	Corporate Networking Software	1		C	5,0	150,0	64,0	32,0	16,0	16,0	86,0	4,0	5,0					326	
OP3.2	Computer Game Content Modeling and Optimization	1		CP	6,0	180,0	80,0	32,0	32,0	16,0	100,0	5,0	6,0					326	
OP3.3	Methods and Means for Modeling Complex Dynamic Objects	2		C	5,0	150,0	64,0	32,0	16,0	16,0	86,0			4,0	5,0			326	
4.2	Optional student disciplines of the profile preparation according to the list (the list is attached)				8,0	240,0	96,0	64,0	32,0		144,0	3,0	4,0	3,0	4,0			326	
Total for education period					90,0	2700,0	784,0	384,0	192,0	208,0	1916,0	24,0	30,0	25,0	30,0		30,0		
Hours per week												24,0		25,0					
Number of exams												4		5					
Number of tests												3		2					
Number of course projects (works)												1		1					
Numbers of disciplines per semester												6,0		6,0					

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

Approved by the Academic Council of NTU "KhPI"

PROTOCOL № 5 from 02.06.2023

Vice-rector of Scientific-and-Pedagogical Work

підпис

_____ Gennadiy KHRYPUNOV

ІП

Head of the educational program

"Modern programming, mobile devices and computer game"

підпис

_____ Svitlana GAVRYLENKO

ІП

Director of the Educational and Scientific Institute of Computer Sciences and Information Technologies

підпис

_____ Mykhailo GODLEVSKY

ІП

Head of the Department

"Computer Engineering and Programming"

назва кафедри

підпис

_____ Oleksandr ZAKOVOROTNYI

ІП

List of optional student disciplines of the profile training

Number in order	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		Semesters								
								Lectures	Laboratory works	Practical studies	1		2	3							
		Number of weeks in the semester								20		20		16							
		Classroom hours	ECTS credits	Classroom hours		ECTS credits	Classroom hours	ECTS credits	Classroom hours	ECTS credits	Classroom hours	ECTS credits									
13	14	15	16	17	18	19	20														
29																					
2.2	Optional student disciplines of the profile training																				
OPT1	Monitoring and Diagnostics of Computer Systems		1		4,0	120,0	48,0	32,0	16,0		72,0	3,0	4,0						326		
OPT2	Application of Multi-valued Logic in Computer Systems		2		4,0	120,0	48,0	32,0	16,0		72,0			3,0	4,0				326		
OPT3	Design of Diagnostic Programs for Computer Systems and Networks		1		4,0	120,0	48,0	32,0	16,0		72,0	3,0	4,0						326		
OPT4	Software Design of Microcontroller Devices		2		4,0	120,0	48,0	32,0	16,0		72,0			3,0	4,0				326		
OPT5	Design of Computer Diagnostic Systems		1		4,0	120,0	48,0	32,0	16,0		72,0	3,0	4,0						326		
OPT6	Specialized Computer Systems		2		4,0	120,0	48,0	32,0	16,0		72,0			3,0	4,0				326		

НАВЧАЛЬНИЙ ПЛАН №	CS-M923I.e
Форма навчання	i.e
Шифр інституту (факультету)	320
Скорочена назва інституту (факультету)	CS
Номер освітньої програми	9
Назва освітньої програми	Modern programming, mobile devices and computer games
Шифр галузі знань	12
Назва галузі	Information Technologies
Шифр спеціальності	123
Назва спеціальності	Computer Engineering
Рівень вищої освіти:	second (master`s) level
Кваліфікація:	Master of Computer Engineering
Рік (останні 2 цифри)	23
Відповідальний за інформацію, телефон	FILATOVA Hanna, 7076165

Форма : плани МАГІСТР	освітньо-професійний
Форма Моп1-21	1,4