MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"

CURRICULUM

(Enrolment 2018)

APPROVED
by Rector of Igor Sikorsky Kyiv Polytechnic Institute

_____ Michael Zgurovsky

_____ 2018

Level Bachelor

Speciality 122 Computer Science

Specialization Information Systems and Technologies of Design

Graduation Department System Design

Form of study Full-time (full-time, part-time)

Faculty (Institute) Institute of Applied Systems Analysis

Qualification Associate Professional in Information Technologies

Study duration 3 years 10 months

Base level Full Secondary Education

I. Schedule of educational process

YEAR	September				October					November					December				January					January					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																			E	E	H	H																			E	E	H	H	H	H	H	H	H	H	H	H
II																			E	E	H	H																			E	E	H	H	H	H	H	H	H	H	H	H
III																			E	E	H	H																			E	E	H	H	H	H	H	H	H	H	H	H
IV																			E	E	H	H										E	P	P	P	P	P	R	R	R	R	A	A									

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
Pre-diploma Practice	IV	3

IV. Graduates assessment

Subjects	Form of graduates assessment (exam, graduation project)	YEAR
	Diploma Project	IV

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
I. GENERAL TRAINING											
I.1. Natural-scientific training											
I.1.01	Mathematical Analysis: 1. Differential Calculus of One-Variable Real Functions 2. Differential Calculus for Functions of Several Real Variables. Integral Calculus of One-Variable Functions 3. Multiple, Curvilinear, Surface and Dependent on Parameters Integrals	1,2,3				16,5	495	162	162		171
I.1.02	Discrete Mathematics: 1. Set Theory, Combinatorics, Graphs, Algebraic Structures 2. Boolean Algebras, Matthematical Logics, Theory of Algorithms	1	2d			9	270	72	72		126
I.1.03	Probability Theory, Probability Processes, and Mathematical Statistics	4				5,5	165	54	54		57
I.1.04	Numerical Methods: 1.Linear Equations, Eigenvalues, and Function Approximation 2. Nonlinear and Differential Equations	4	3d			9	270	72	36	36	126
I.1.05	Designing and Analysis of Computational Algorithms		3d			3,5	105	36		36	33
I.1.06	Analytical Geometry and Linear Algebra: 1. Analytical Geometry 2. Linear Algebra	2	1d			9	270	72	72		126
I.1.07	Operations Research	5				5	150	54		36	60
I.1.08	Physics: 1. Mechanics. Electromagnetics 2. Oscillations, waves, elements of quantum mechanics	1,2				9	270	90	54	36	90
	total number of part I.1	**10**	**4**			**66,5**	**1995**	**612**	**450**	**144**	**789**
I.2. Basic training (major courses)											
I.2.01	Economics and Production Organization		7			4	120	36	36		48
I.2.02	Life Safety and Civil Defence		6			2	60	18	18		24
I.2.03	Decision Theory	6				5	150	36		36	78
I.2.04	Object-Oriented Programming	3			3	6,5	195	54		36	105
I.2.05	Algorithmization and Programming: 1. Basic Concepts of Programming 2. Procedural programming		1d,2d		2	9	270	72		72	126
I.2.06	Operating Systems		5d			4	120	36		36	48
I.2.07	Database Systems	5			5	6	180	36		36	108
I.2.08	Software Design	5				6	180	36		36	108
I.2.09	Data Protection Technologies		7d			4	120	36		18	66
I.2.10	Systems Modeling and Simulation	7			7	6	180	36		36	108
I.2.11	Information System Development Methods	7				4	120	36		36	48
I.2.12	System Analysis	8				4	120	36		18	66
I.2.13	Intelligent Data Analysis	6				5	150	36		36	78
I.2.14	Computer Networks	7				5	150	36		36	78
	total number of part I.2	**9**	**6**		**4**	**70,5**	**2115**	**540**	**54**	**432**	**1089**
I.3. Basic training (optional courses)											
I.3.01	Pre-diploma Practice		8d			7,5	225				225
I.3.02	Diploma Project					6	180				180
	total number of part I.3					**13,5**	**405**				**405**
I.4. Humanities training (optional courses)											
I.4.01	History Subjects		2			2	60	18	18		24
I.4.02	Ukrainian Language Subjects		1			2	60	18	18		24
I.4.03	Philosophy Subjects		4			2	60	18	18		24
I.4.04	Psychology Subjects		4			2	60	18	18		24
I.4.05	Subjects on Law		6			2	60	18	18		24
I.4.06	Subjects on Humanities and Social Sciences #1		5			2	60	18	18		24
I.4.07	Subjects on Humanities and Social Sciences #2		7			2	60	18	18		24
I.4.08	Foreign Language		2,4d			6	180		144		36
I.4.09	Foreign Language for Professional Purposes		6,7d			4	120		90		30
	total number of part I.4		**11**			**24**	**720**	**126**	**360**		**234**
	TOTAL IN GENERAL TRAINING	**19**	**22**		**4**	**174,5**	**5235**	**1278**	**864**	**576**	**2517**
II. VOCATIONAL TRAINING											
II.1. Vocational and practical training (major courses)											
II.1.01	Web Technologies and Web Design		3			3,5	105	36		36	33
II.1.02	Algorithms and Data Structures: 1. Basic Algorithms 2. Data Structures and Storage Structures		1,2			6	180	54		54	72
II.1.03	Parallel Computing	6			6	6,5	195	54		36	105
II.1.04	Electrical Engineering and Electronics	3				5,5	165	54		36	75
II.1.05	Computer Circuit Engineering		4d		4	6	180	36	36	36	72
II.1.06	Project Management		8d			3,5	105	36		18	51
II.1.07	Information Technologies Hardware		5d			3	90	36		18	36
II.1.08	Computers Architecture	4				4,5	135	36		36	63
II.1.09	Theory of Information and Coding		4			3,5	105	36		36	33
	total numberof part II.1	**3**	**7**		**2**	**42**	**1260**	**378**	**36**	**306**	**540**
II.2. Vocational and practical training (optional courses)											
II.2.01	Subjects on Information Visual Representation		5			2,5	75	18		18	39
II.2.02	Subjects on Internet Technologies		6д			5	150	36		36	78
II.2.03	Subjects on Data Processing Methods		6д			5	150	36		36	78
II.2.04	Subjects on Design Automatization		7			3,5	105	36		18	51
II.2.05	Subjects on Electronic Element Base Design		8д			3,5	105	36		18	51
II.2.06	Subjects on Intelligent Computer Technologies	8				4	120	36		18	66
	total number of part II.2	**1**	**5**			**23,5**	**705**	**198**		**144**	**363**
	TOTAL IN VOCATIONAL TRAINING	**4**	**12**		**2**	**65,5**	**1965**	**576**	**36**	**450**	**903**
	TOTAL	**23**	**34**		**6**	**240**	**7200**	**1854**	**900**	**1026**	**3420**

Approved by Faculty Academic Council, Meeting protocol № ____ from April 25, 2017

Head of the Department _____ A. I. Petrenko

Dean of the Faculty (Director of the Institute) _____ V. D. Romanenko