



CURRICULUM
(Enrolment 2017)

APPROVED
by Rector of Igor Sikorsky Kyiv Polytechnic Institute

_____ Michael Zgurovsky

_____ 2017

Level Bachelor

Speciality 122 Computer Science

Specialization Artificial Intelligence Systems

Graduation Department Mathematical Methods for System Analysis

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

Faculty (Institute) Institute for Applied System Analysis

Qualification Associate Professional in Information

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, Examination, Practice, Research, Assessment, 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	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 of 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												
1/I	Mathematical Analysis: 1. Differential Calculus of Functions of One Real Variable 2. Differential Calculus of Functions of Several Real Variables. Integration of Functions of One Variable 3. Diderential Equations. Multiple Integrals	1,2,3				17	510	144	144		222	
2/I	Discrete Mathematics: 1. Set Theory. Combinatorics. Graphs Algebraic Structures 2. Boolean Algebras. Mattheoretical Logics. Algorithms Theory	1	2			8	240	72	72		96	
3/I	Probability Theory. Random Processes and Mathematical Statistics	3				5	150	36	36		78	
4/I	Numerical Methods: 1. Solution of Equations and Systems. Function Approximation 2. Calculation of Eigen Pairs of Matrix. Solution of Differential Equations	3	4d			7.5	225	72		54	99	
5/I	Development and Analysis of Computing Algorithms		4			4.5	135	36		36	63	
6/I	Analytic Geometry and Linear Algebra: 1. Analytic Geometry 2. Linear Algebra	2	1d			8.5	255	72	72		111	
7/I	Operations Research: 1. Linear Programming 2. Nonlinear Programming	5,6				7	210	72	54		84	
8/I	Physics: 1. Mechanics. Elecptomagnetics 2. Ascillation. Waves. Elements of Quantum	2	3			7	210	72	36		102	
total number of part I.1		10	5			64.5	1935	576	414	90	855	
I.2. Basic training (major courses)												
1/II	Economics of Organization and Production Planning		7			4	120	36	36		48	
2/II	Subjects on Life Safety		6			2	60	18	18		24	
3/II	Decision-Making Theory	7			7	5	150	54	18		78	
4/II	Object-Oriented Programming	4			4	6	180	54		36	90	
5/II	Algorithmization and Programming	1				5	150	54		36	60	
6/II	Operating Systems		3d			4	120	54		18	48	
7/II	Data Base Systems	5			5	7	210	72		36	102	
8/II	Software Design Technologies		6d			6	180	54		36	90	
9/II	Information Systems Protection Technologies		7d			3.5	105	36		18	51	
10/II	Systems Modeling and Simulation	7				5	150	36		18	96	
11/II	Information Systems Development	8				4	120	54	18		48	
12/II	System Analysis	6				4.5	135	54	18		63	
13/II	Data Mining		6d			4.5	135	54		18	63	
14/II	Computer Networks	6				5	150	54		18	78	
total number of part I.2		8	6		3	65.5	1965	684	108	234	939	
I.3. Basic training (optional courses)												
1/III	Pre-diploma Practice		8d			7.5	225				225	
2/II	Diploma Project					6	180				180	
total number of part I.3						13.5	405				405	

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.4. Humanities training (optional courses)											
1/IV	History Subjects		2			2	60	18	18		24
2/IV	Ukrainian Language Subjects		1			2	60	18	18		24
3/IV	Philosophy Subjects		4			2	60	18	18		24
4/IV	Psychology Subjects		4			2	60	18	18		24
5/IV	Subjects on Law		6			2	60	18	18		24
6/IV	Subjects on Humanities and Social Science # 1		5			2	60	18	18		24
7/IV	Subjects on Humanities and Social Science # 2		7			2	60	18	18		24
8/IV	Foreign Language		2, 4d			6	180		144		36
9/IV	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		18	22		3	167.5	5025	1386	882	324	2433
II. VOCATIONAL TRAINING											
II.1. Vocational and practical training (major courses)											
1/c	Web-Oriented Software Development	5				4.5	135	54		18	63
2/c	Algorithms and Data Structures		1			4	120	36		18	66
3/c	Distributed Systems and Parallel Computing Technologies		5d			5	150	36		36	78
4/c	Electronics and Electrical Engineering		3			3	90	36		18	36
5/c	Computer Circuit Engineering and Computer Architecture	4				4	120	54		18	48
6/c	IT-Projects Management		8d			3	90	36	18		36
7/c	Making Decisions under Conflicts	8				4	120	36	18		66
8/c	Harmonic Analysis and Operational Calculus	4				4	120	36	36		48
9/c	Mathematical Statistics		4			3	90	36	18		36
total number of part II.1		4	5			34.5	1035	360	90	108	477
II.2. Vocational and practical training (optional courses)											
1/cb	Natural Language Oriented Information Technologies		3			3	90	36	18		36
2/cb	Computer Graphics		1			2.5	75	18		18	39
3/cb	Programming		2d		2	7	210	54		54	102
4/cb	Micro- and Macroeconomic Systems		5			3	90	36	18		36
5/cb	Forecasting		6			3.5	105	36		18	51
6/cb	Pattern Recognition		7			3	90	36		18	36
7/cb	Time Series Analysis		5			3	90	36		18	36
8/cb	Cross-Platform Programming		7			3	90	36		18	36
9/cb	Theory of Information and Coding		3			3	90	36	18		36
10/cb	Artificial Intelligence Languages and Technologies	7				3	90	36		18	36
11/cb	Artificial Intelligence Methods and Systems	8				4	120	36		18	66
total number of part II.2		2	9		1	38	1140	396	54	180	510
TOTAL IN VOCATIONAL TRAINING		6	14		1	72.5	2175	756	144	288	987
TOTAL		24	36		4	240.0	7200	2142	1026	612	3420

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

Head of the Department _____ O.L.Tymoschuk
 Dean of the Faculty (Director of the Institute) _____ V.D.Romanenko