



Ministry of Education and Science of Ukraine  
Odessa I.I. Mechnykov National University  
Faculty of Mathematics, Physics and Information Technologies

## CURRICULUM

Master's training in the knowledge field 12 Information technologies  
in specialty 126 Information systems and technologies  
The form of study is full-time

Qualification Master of Information Systems and Technologies  
Apprenticeship 1 year 4 months  
based on bachelor's degree

### I. SCHEDULE OF THE EDUCATIONAL PROCESS

Year	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
1	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	S	V	V	V	V	T	T	T	T	T	T	T	T	T	T	T	T	T	T	S	S	V	V	V	V	V	V	V	V	V	V	
2	T	T	T	T	S	P	P	P	P	DP	DP	DP	DP	DP	DP	DP	SA	SA																																

### II. SUMMARY OF TIME BUDGET DATA, weeks

Year	Theoretical study	Examination period	Practice	State attestation	Completion of a diploma project (work)	Vacation	Common
1	35	4	0	0	0	13	52
2	4	1	4	2	7	0	18

### III. PRACTICE

Name of the practice	Semester	weeks
Professional research practice	3	4

### IV. STATE ATTESTATION

The name of the academic discipline	State certification form	Semester
	Master's thesis defense	3

Note:

**T** Theoretical study

**S** Examination period

**P** Professional research practice

**DP** Completion of a master's thesis

**SA** State attestation

**V** Vacation

### V. CURRICULUM

Code according to EP	COURSE NAME	Distribution by semesters				Number of ECTS credits	Number of hours					Distribution of hours per week by courses and semesters			
		Exams	Credits	Courses			Total volume	In total	Auditory			Individual work	I course		II course
				projects	work				including:				Semesters		
									lectures	Lab works	practical		1	2	3
		Number of weeks in the semester											18	17	4

#### 1. MANDATORY COMPONENTS

OK01	Foreign language of professional field		1, 2			4,5	135	64			64	71	2	2	
OK02	Marketing and intellectual property protection in the IT industry		2			4	120	34	18		16	86		2	
OK03	Information processes modeling methods in complex systems	1				4	120	36	18	18		84	2		
OK04	Image processing methods and algorithms and computer vision	2				4	120	34	16	18		86		2	
OK05	Fuzzy models and methods in intelligent systems		1			4	120	36	18	18		84	2		
OK06	Design of the complex information protection systems	3				3,5	105	32	16	16		73			8
OK07	On-line analytical processing systems		2			3,5	105	34	16	18		71		2	
OK08	Modeling, analysis and automation of business processes	1				4	120	36	18	18		84	2		
OK09	Master's seminar		2			3	90	18			18	72		1	
OK10	Analysis and visualization of huge data sets (Big Data)	1				4	120	36	18	18		84	2		
OK11	Multi-agent systems and technologies	2				5	150	52	34	18		98		3	
OK12	Professional research practice		3			6	180	48		48		132			
OK13	Completion of a master's thesis					13,5	405					405			
The total volume of mandatory educational components						63	1890	460	172	190	98	1430			

#### 2. OPTIONAL EDUCATIONAL COMPONENTS

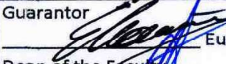
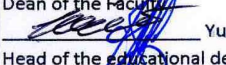
##### 2.1 Educational components of students' free choice

VB1	Course from the general list of the university (see ONU website)		3			3	90	16	8		8	74			4
VB2	Course for the mathematical competences development (see additional list / FMFIT website)	2				4	120	34	18		16	86		2	
VB3	Course for the IT competences development (see additional list / FMFIT website)		1			4	120	36	18	18		84	2		
In total						11	330	86	44	18	24	244			

**2.2 Educational components of the training line**


VB4	Special course No. 1 (for the current year is determined by the state of the IT market)	1				4	120	36	18	18		84	2		
VB5	Special course No. 2 (for the current year is determined by the state of the IT market)		1			4	120	36	18		18	84	2		
VB6	Special course No. 3 (for the current year is determined by the state of the IT market)	2				4	120	34	16	18		86		2	
VB7	Special course No. 4 (for the current year is determined by the state of the IT market)	3				4	120	24	12	12		96			6
	In total					16	480	130	64	48	18	350			
	The total volume of optional educational components					27	810	216	108	66	42	594			
	TOTAL:					90	2700	676	280	256	140	2024	16	16	18

**VI. SUMMARY TABLE**

Distribution by years of study	1	2	Total		Guarantor
Number of ECTS credits	60	30	90		 Eugene MALAKHOV
Number of exams	8	2	10		Dean of the Faculty
Number of credits	8	2	10		 Yurii NITSUK
Number of course works/projects					Head of the educational department
Educational practice					Svitlana GVOZDII
Professional research practice		1	1		Vice-rector for scientific and pedagogical work
Certification		1	1		Oleksandr ZAPOROZHCHENKO

**Approved**  
at the meeting of the Academic Council  
"28" 06 2022

protocol # 11

Scientific Secretary  Svitlana KURANDO

## V. EDUCATIONAL PROCESS PLAN

Cipher according to	NAME OF THE EDUCATIONAL DISCIPLINE	Distribution of hours per week by courses and semesters		
		V course		VI course
		Semesters		
		1	2	3
		Number of weeks in the semester		
		18	17	4
<b>2 OPTIONAL EDUCATIONAL COMPONENTS</b>				
<b>2.1 Educational components of students' free choice</b>				
<b>VB1</b>	Course from the general list of the university (see ONU website)		2	
<b>VB2</b>	Course for the mathematical competences development (see additional list / FMFIT website)		2	
<b>VB3</b>	Course for the IT competences development (see additional list / FMFIT website)			4
<b>In total</b>				

<b>Disciplines from the general list of the university</b>	
<b>VB1</b>	<i>Civil defense and labor protection in the industry</i>
	<i>Introduction to synergy</i>
	<i>Quantum computing</i>
	<i>See ONU website</i>
<b>Disciplines for the development of mathematical competences</b>	
<b>VB2</b>	<i>Numerical experiment</i>
	<i>See FMFIT site</i>
<b>Disciplines for the development of IT competences</b>	
<b>VB3</b>	<i>Expert systems</i>
	<i>Technologies of virtualization in computer systems</i>
	<i>See FMFIT site</i>