



«APPROVED»
Decision of the Academic Council
NPJSC «KazNRTU»
named after K.Satbayev»
dated 06.03.2025 Minutes № 10

WORKING CURRICULUM

Academic year

2025-2026 (Autumn, Spring)

Group of educational programs

M095 - "IT Security"

Educational program

7M06301 - "Comprehensive information security"

The awarded academic degree

Master of Technical Sciences

Form and duration of study

full time (scientific and pedagogical track) - 2 years

Discipline code	Name of disciplines	Block	Cycle	Total ECTS credits	Total hours	lek/lab/pr Contact hours	in hours SIS (including TSIS)	Form of control	Allocation of face-to-face training based on courses and semesters				Prerequisites
									1 course		2 course		
									1 sem	2 sem	3 sem	4 sem	
CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)													
CYCLE OF BASIC DISCIPLINES (BD)													
M-1. Module of basic training (university component)													
LNG213	Foreign language (professional)		BD, UC	3	90	0/0/30	60	E	3				
HUM214	Psychology of management		BD, UC	3	90	15/0/15	60	E	3				
SEC221	Means of security of network of operating systems	1	BD, CCH	5	150	15/0/30	105	E	5				
SEC211	Methods and means of protection in Operating systems	1	BD, CCH	5	150	15/0/30	105	E	5				SEC137, SEC106, SEC143
MNG781	Intellectual property and research	1	BD, CCH	5	150	30/0/15	105	E	5				
CSE738	Scientific Python	2	BD, CCH	5	150	15/0/30	105	E	5				
SEC244	Security of Virtualization and Cloud Systems	2	BD, CCH	5	150	30/0/15	105	E	5				
HUM212	History and philosophy of science		BD, UC	3	90	15/0/15	60	E		3			
HUM213	Higher school pedagogy		BD, UC	3	90	15/0/15	60	E		3			
SEC201	Algorithms of cryptographic protection of information	1	BD, CCH	5	150	30/0/15	105	E		5			
SEC210	Methods of cryptology and means of information protection	1	BD, CCH	5	150	30/0/15	105	E		5			SEC121, SEC132
MNG782	Sustainable development strategies	1	BD, CCH	5	150	30/0/15	105	E		5			
M-3. Practice-oriented module													
AAP273	Pedagogical practice		BD, UC	8				R			8		
CYCLE OF PROFILE DISCIPLINES (PD)													
M-2. Module of professional activity (university component, component of choice)													
SEC215	Organization of information security systems		PD, UC	5	150	15/15/15	105	E	5				
SEC240	Cybercrime and computer forensics	1	PD, CCH	5	150	30/0/15	105	E	5				
SEC247	Intellectualized recognition and countermeasures for cyber attacks	1	PD, CCH	5	150	30/0/15	105	E	5				
SEC214	Organization of protection and safety of a database		PD, UC	5	150	30/0/15	105	E		5			
CSE777	Artificial intelligence	1	PD, CCH	5	150	30/0/15	105	E		5			
CSE283	Natural Language Processing	1	PD, CCH	5	150	30/0/15	105	E		5			
CSE718	Technical protection of information	2	PD, CCH	5	150	15/0/30	105	E		5			

SEC238	Steganographic methods of information protection	2	PD, CCH	5	150	15/0/30	105	E		5			
SEC246	Big Data and Data Analysis	1	PD, CCH	5	150	30/15/0	105	E			5		
CSE746	Machine Learning & Deep Learning	1	PD, CCH	5	150	30/0/15	105	E			5		
SEC204	Information Security Audit	2	PD, CCH	5	150	30/0/15	105	E			5		
SEC245	Risk management in cyber security	2	PD, CCH	5	150	30/0/15	105	E			5		
SEC234	OLAP and Data Warehousing	3	PD, CCH	5	150	15/15/15	105	E			5		
CSE258	Data analysis and Data retrieval	3	PD, CCH	5	150	15/15/15	105	E			5		CSE248
SEC248	Security Internet of things	4	PD, CCH	5	150	15/0/30	105	E			5		
SEC222	Technologies of protection of wireless networks (applications)	4	PD, CCH	5	150	15/0/30	105	E			5		
SEC254	Quantum information security technologies		PD, UC	4	120	30/0/15	75	E				4	
M-3. Practice-oriented module													
AAP256	Research practice		PD, UC	4				R				4	
M-4. Experimental research module													
AAP268	Research work of a master's student, including internship and completion of a master's thesis		RWMS	4				R	4				
AAP268	Research work of a master's student, including internship and completion of a master's thesis		RWMS	4				R		4			
AAP251	Research work of a master's student, including internship and completion of a master's thesis		RWMS	2				R			2		
AAP255	Research work of a master's student, including internship and completion of a master's thesis		RWMS	14				R				14	
M-5. Module of final attestation													
ECA212	Registration and protection of the master thesis		FA	8								8	
Total based on UNIVERSITY:									30	30	30	30	
									60		60		

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			
		Required component (RC)	University component (UC)	Component of choice (CCH)	Total
GED	Cycle of general education disciplines	0	0	0	0
BD	Cycle of basic disciplines	0	20	15	35
PD	Cycle of profile disciplines	0	18	35	53
Total for theoretical training:		0	38	50	88
RWMS	Research Work of Master's Student				24
ERWMS	Experimental Research Work of Master's Student				0
FA	Final attestation				8
TOTAL:					120

Decision of the Educational and Methodological Council of KazNRTU named after K.Satpayev. Minutes № 3 dated 20.12.2024

Decision of the Academic Council of the Institute. Minutes № 4 dated 22.11.2024

Signed:

Governing Board member - Vice-Rector for Academic Affairs

Uskenbayeva R. K.

Approved:

Vice Provost on academic development

Kalpeyeva Z. E.

Head of Department - Department of Educational Program Management and Academic-Methodological Work

Zhumagaliyeva A. S.

acting Director of Institute - Institute of Automation and Information Technologies

Chinibayev Y. T.

Department Chair - Cybersecurity, information processing and storage

Satybaldiyeva R. Zh.

Representative of the Academic Committee from Employers

Pokusov V. V.

____ Acknowledged ____

