



National Research University Higher School of Economics (HSE)

Basic Curriculum

Field of study 10.03.01 Information Security
Educational Programme "Information Security"

Implementing unit: Tikhonov Moscow Institute of Electronics and Mathematics, HSE - Moscow

Years of Study: 2023/2024 - 2026/2027

Length of Programme: 4 years

Mode of Study: Full Time

Degree: Bachelor's degree

APPROVED
30.05.2023
Vice Rector
ROSHCHIN S.Y.
Signed with EDS

Block Code	Course	Subject type	Credits	Credits by Years				Planned Educational Programme Development Results
				1	2	3	4	
	Degree Programme		240,00	60,00	60,00	60,00	60,00	
	Major		151,00	53,00	40,00	27,00	31,00	
	Core Professional Block (Major)		93,00	47,00	26,00	14,00	6,00	
1	Algebra and Geometry	C	6,00	6,00				GPC-3, PC-2
2	Computer Science	C	4,00	4,00				GPC-7, PC-2
3	The Foundations of Cryptography and Steganography	C	4,00	4,00				GPC-2, GPC-5, GPC-7, PC-1, PC-3, UC-1, UC-2
4	Algorithmization and Programming	C	10,00	10,00				GPC-2, GPC-3, GPC-7, GPC-9, PC-1, UC-1
5	Physics	C	11,00	7,00	4,00			GPC-3, GPC-4, UC-1, UC-2
6	Calculus	C	16,00	12,00	4,00			GPC-2, PC-4
7	Cryptographic Methods of Information Security	C	6,00		6,00			GPC-1, GPC-3, PC-2, PC-3, UC-1, UC-2
8	Probability Theory and Mathematical Statistics	C	6,00		6,00			GPC-3, UC-1
9	Information Theory	C	6,00		6,00			GPC-3, GPC-8, UC-2
10	System Programming	C	7,00			7,00		GPC-7, GPC-8, PC-2, UC-6
11	Digital Circuitry and System Architecture	C	7,00			7,00		GPC-14, GPC-16, UC-2, UC-3
12	Organizational and Legal Support for Information Security	C	6,00				6,00	GPC-1, GPC-2, GPC-6, UC-4
13	Discrete Mathematics	C	4,00	4,00				GPC-14, GPC-3
	Elective Professional Block (Major)		58,00	6,00	14,00	13,00	25,00	
	Дисциплины по выбору ОП		48,00	6,00	14,00	10,00	18,00	
1	Administration of systems and networks	C	6,00	6,00				GPC-2, GPC-3, PC-1, PC-2, PC-3, PC-4
2	Development of Secure Applications	C	8,00		8,00			GPC-1, GPC-3, GPC-5, PC-1, PC-3, UC-1

3	Systems and Networks of Information Transfer (offered in a foreign language)	C	6,00		6,00			GPC-7, GPC-8, GPC-9, UC-2
4	Software and Hardware Information Protection	C	5,00			5,00		GPC-1, GPC-11, GPC-2, GPC-8
5	Intrusion Detection Systems	C	5,00			5,00		GPC-2, GPC-3, PC-3
6	Information Security Risk Management	C	6,00				6,00	GPC-2, GPC-4, GPC-7, PC-3, UC-1, UC-2
7	Decision systems (offered in a foreign language)	C	6,00				6,00	GPC-4, GPC-5, PC-1, PC-2, UC-1, UC-2
8	Operation systems security	C	6,00				6,00	GPC-2, GPC-4, PC-2, PC-3, UC-1, UC-2
	Научно-исследовательский и проектный семинар		10,00				3,00	7,00
1	Project Seminar	C	3,00				3,00	GPC-5, PC-1, PC-2, PC-3, PC-4, UC-3, UC-4
2	Research Seminar	C	7,00					7,00
	Internship		43,00		9,00	12,00		22,00
	Professional Internship		7,00				7,00	
1	Work Experience Internship	C	7,00				7,00	GPC-1, GPC-10, GPC-11, GPC-12, GPC-13, GPC-14, GPC-15, GPC-16, GPC-17, PC-3, UC-1, UC-3, UC-6, UC-8
2	Algorithmization and Programming	C						GPC-7, UC-6
	Project Internship		8,00		3,00	5,00		
1	Research or Applied Project	C	8,00		3,00	5,00		GPC-2, GPC-3, GPC-7, PC-1, PC-2, PC-3, PC-4, UC-6
	Research Internship		28,00		6,00			22,00
1	Graduation Internship	C	10,00					10,00
		C	12,00					12,00
2	Preparation of Graduation Thesis							GPC-1, GPC-10, GPC-11, GPC-12, GPC-13, GPC-14, GPC-15, GPC-16, GPC-17, GPC-2, GPC-3, GPC-4, GPC-5, GPC-6, GPC-7, GPC-8, GPC-9, PC-1, PC-2, PC-3, PC-4, UC-1, UC-10, UC-11, UC-2, UC-3, UC-4, UC-5, UC-6, UC-7, UC-8, UC-9
3	Educational Science Research Internship	C	6,00		6,00			GPC-3, GPC-4, GPC-5, GPC-9, PC-1, PC-2, PC-3, PC-4, UC-2, UC-3, UC-6
	General Courses		14,00	7,00	1,00	6,00		
	Core General Courses		2,00	1,00	1,00			
1	Physical Training	C	1,00		1,00			UC-3, UC-7
2	Safe Living Basics	C	1,00	1,00				UC-3, UC-6, UC-7, UC-8
	Optional General Courses		12,00	6,00		6,00		
1	Legal Literacy	C	3,00			3,00		GPC-1, UC-10, UC-11, UC-4
2	Economics	C	3,00			3,00		GPC-1, GPC-5, UC-10, UC-9
3	Russian History	C	4,00	4,00				GPC-13, UC-1, UC-2
4	Foundations of Russian Statehood	C	2,00	2,00				UC-1, UC-5
	Minor		20,00		10,00	10,00		
1	Minor	E	20,00		10,00	10,00		UC-3, UC-4, UC-5, UC-6

	English		1,00				1,00	
	Examinations		1,00				1,00	
1	Independent English Exam							UC-1, UC-4
2	Project Proposal (offered in a foreign language)	C	1,00				1,00	UC-1, UC-4
3	English Language Integrative Exam (offered in a foreign language)							UC-1, UC-4
	Optional Courses							
1	English (offered in a foreign language)	O	8,00	8,00				UC-3, UC-4, UC-5
2	English (offered in a foreign language)	O	6,00		6,00			UC-3, UC-4, UC-5
3	Academic English Writing (offered in a foreign language)	O	2,00				2,00	UC-4
	Data Culture		6,00			5,00	1,00	
1	Machine Learning	C	5,00			5,00		GPC-2, GPC-4, PC-1, PC-2, UC-1
2	Independent Digital Literacy Test	C						GPC-7, PC-3, UC-6
3	Independent Programming Test. Advanced Level	C						GPC-7, PC-3, UC-6
4	Independent Data Science Test. Advanced Level	C	1,00				1,00	GPC-12, GPC-3, GPC-7, PC-2, PC-3, UC-6
	Final State Certification (FSC)		5,00				5,00	
	Thesis Work		5,00				5,00	
1	Presenting of Graduation Thesis	C	5,00				5,00	GPC-1, GPC-10, GPC-11, GPC-12, GPC-13, GPC-14, GPC-15, GPC-16, GPC-17, GPC-2, GPC-3, GPC-4, GPC-5, GPC-6, GPC-7, GPC-8, GPC-9, PC-1, PC-2, PC-3, PC-4, UC-1, UC-10, UC-11, UC-2, UC-3, UC-4, UC-5, UC-6, UC-7, UC-8, UC-9

Curriculum agreed:

Academic Supervisor	IVANOV F.I.	23.05.2023
Dean	KROUK E.A.	25.05.2023
Head of Centre for Educational Model Design	LEPESHKIN I.A.	30.05.2023

* Subject type:

Compulsory course	C
Elective course	E
Optional course	O