



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: 2021/2022 - 2024/2025

Length of Programme: 4 years

Mode of Study: Full Time

Degree: Bachelor's degree

APPROVED
27.04.2021
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		159,00	50,00	39,00	33,00	37,00	
	Core Professional Block (Major)		98,00	44,00	29,00	15,00	10,00	
	Subject Areas		98,00	44,00	29,00	15,00	10,00	
	Mathematical Analysis		16,00	12,00	4,00			
1	Calculus	C	16,00	12,00	4,00			GPC-2, PC-4
	Algebra and Geometry		5,00	5,00				
1	Algebra and Geometry	C	5,00	5,00				GPC-2, PC-4
	Discrete Mathematics		4,00	4,00				
1	Discrete Mathematics	C	4,00	4,00				GPC-2, PC-4
	Probability Theory and Mathematical Statistics		5,00		5,00			
1	Probability Theory and Mathematical Statistics	C	5,00		5,00			GPC-1, GPC-2, PC-3, UC-2
	Computer Science		4,00	4,00				
1	Computer Science	C	4,00	4,00				GPC-4, GPC-5, PC-1, UC-1
	Algorithmisation and Programming		25,00	12,00		7,00	6,00	
1	System Programming	C	7,00			7,00		GPC-4, GPC-5, PC-1
2	Algorithmization and Programming	C	12,00	12,00				GPC-5, PC-1, PC-4, UC-1
3	Coding Theory	C	6,00				6,00	GPC-2, PC-3, PC-5
4	Algorithmization and Programming	C						GPC-4, GPC-5, PC-1, UC-1
	Modeling		29,00	7,00	14,00	8,00		
1	Digital Circuitry and System Architecture	C	8,00			8,00		GPC-3, PC-2, PC-5
2	Physics	C	11,00	7,00	4,00			GPC-1
3	Information Theory	C	4,00		4,00			GPC-2, GPC-5, PC-4, UC-1
4	Electronics and Electric Engineering	C	6,00		6,00			GPC-3, PC-5
	Fundamentals of Information Security		6,00		6,00			

1	Cryptographic Methods of Information Security	C	6,00		6,00			GPC-2, GPC-5, GPC-7, PC-1, PC-2, PC-3, UC-1, UC-2
	Organizational and Legal Support for Information Security		4,00				4,00	
1	Organizational and Legal Support for Information Security	C	4,00				4,00	GPC-5, GPC-7, PC-3, PC-5, UC-3
	Elective Professional Block (Major)		61,00	6,00	10,00	18,00	27,00	
	Научно-исследовательский и проектный семинар		19,00	6,00	7,00	3,00	3,00	
1	Project Seminar 1	C	2,00	2,00				GPC-4, GPC-7, PC-1, PC-2, UC-3, UC-4
2	Project seminar on information security	C	4,00	4,00				GPC-5, GPC-7, PC-1, PC-2, UC-3, UC-4
3	Project Seminar	C	13,00		7,00	3,00	3,00	GPC-2, GPC-4, GPC-5, GPC-7, PC-1, PC-2, PC-3, PC-5, UC-1, UC-2, UC-3, UC-4, UC-6
	Дисциплины по выбору ОП		42,00		3,00	15,00	24,00	
1	Intrusion Detection Systems	C	5,00			5,00		GPC-2, GPC-3, PC-3
2	Software and Hardware Information Protection	C	5,00			5,00		GPC-3, GPC-4, GPC-7, PC-5
3	Machine Learning (offered in a foreign language)	C	5,00			5,00		GPC-2, GPC-4, PC-1, PC-2, UC-1
4	Wireless Communication Systems Security	C	5,00				5,00	GPC-3, GPC-7, PC-1, PC-2
5	Operating Systems Security	C	5,00				5,00	GPC-5, GPC-7, PC-3
6	Cryptographic Protocols	C	6,00				6,00	GPC-2, GPC-7, PC-1, PC-2
7	Data Loss Prevention Systems	C	4,00				4,00	GPC-3, GPC-4, GPC-7, PC-5, UC-3, UC-4
8	Technical Protection of Information	C	4,00				4,00	GPC-4, GPC-5, PC-5
9	Systems and Networks of Information Transfer	C	3,00		3,00			PC-2, PC-3, UC-1, UC-2
	Internship		37,00	5,00	10,00	9,00	13,00	
	Professional Internship		9,00	5,00		4,00		
1	Work Experience Internship	C	4,00				4,00	GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, GPC-6, GPC-7, PC-1, PC-2, PC-3, PC-4, PC-5, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6, UC-7, UC-8
2	Computer workshop: administration of systems and networks	C	5,00	5,00				GPC-4, GPC-5, PC-1, PC-2, PC-3, UC-3
	Project Internship		10,00		5,00	5,00		
1	Project	E	10,00		5,00	5,00		GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, GPC-7, PC-1, PC-2, PC-3, PC-4, PC-5, UC-1, UC-2, UC-3, UC-4, UC-6
	Research Internship		18,00		5,00		13,00	
1	Graduation Internship	C	10,00				10,00	GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, GPC-6, GPC-7, PC-1, PC-2, PC-3, PC-4, PC-5, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6, UC-7, UC-8
2	Preparation of Graduation Thesis	C	3,00				3,00	GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, GPC-7, PC-1, PC-2, PC-3, PC-4, PC-5, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6

3	Educational Science Research Internship	C	5,00		5,00			GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, GPC-7, PC-1, PC-2, PC-3, PC-4, PC-5, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6
	General Courses		14,00	5,00	1,00	8,00		
	Core General Courses		2,00	1,00	1,00			
1	Safe Living Basics	C	1,00	1,00				GPC-6, UC-3, UC-4, UC-8
2	Physical Training	C	1,00		1,00			UC-3, UC-7
	Optional General Courses		12,00	4,00		8,00		
1	Legal Literacy	C	4,00			4,00		UC-10, UC-11, UC-3, UC-4, UC-5, UC-6, UC-9
2	Economics	C	4,00			4,00		UC-10, UC-11, UC-3, UC-4, UC-5, UC-6, UC-9
3	History	C	4,00	4,00				UC-3, UC-4, UC-5
	Minor		20,00		10,00	10,00		
1	Minor	C	20,00		10,00	10,00		GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, GPC-7, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6
	English		1,00				1,00	
	Examinations		1,00				1,00	
1	Independent English Exam (offered in a foreign language)	C						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)	C						UC-1, UC-4
	Optional Courses							
1	Academic English Writing (offered in a foreign language)	O	2,00				2,00	UC-4
2	English (offered in a foreign language)	O	8,00	8,00				UC-3, UC-4, UC-5
3	English (offered in a foreign language)	O	6,00		6,00			UC-3, UC-4, UC-5
	Data Culture		4,00				4,00	
1	Independent Programming Test. Advanced Level	C						UC-1
2	Machine Learning	C	3,00				3,00	GPC-2, GPC-4, UC-1
3	Independent Digital Literacy Test	C						UC-1
4	Independent Data Science Test. Advanced Level	C	1,00				1,00	UC-1
	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-2, GPC-3, GPC-4, GPC-5, GPC-6, GPC-7, PC-1, PC-2, PC-3, PC-4, PC-5, 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.	16.04.2021
Dean	KROUK E.A.	19.04.2021
Head of Centre for Educational Model Design	LEPESHKIN I.A.	27.04.2021

* Subject type:

Compulsory course C

Elective course E

Optional course O