



National Research University Higher School of Economics (HSE)

Curriculum  
Speciality 10.05.01 Cyber Security  
Educational Programme "Cyber Security"  
Specializations: "Mathematical Methods of Information Security"  
Implementing unit: Tikhonov Moscow Institute of Electronics and  
Mathematics, HSE - Moscow  
4 th, 2025/2026 academic year

APPROVED  
06.06.2025  
Vice Rector  
ROSHCHIN S.Y.  
Signed with EDS

Length of Programme: 5 years 6 months  
Years of Study: 2022/2023 - 2027/2028  
Mode of Study: Full Time  
Degree: Specialist's degree

Block Code	Course	Subject type	Department	Credits	Total Academic Hours	Contact Hours	Allocation of Contact Hours				Additional Information
							1	2	3	4	
	<b>Degree Programme</b>			<b>60,00</b>	<b>2 280</b>	<b>650</b>	<b>146</b>	<b>202</b>	<b>180</b>	<b>122</b>	
	<b>Data Culture</b>			<b>1,00</b>	<b>38</b>	<b>2</b>				<b>2</b>	
1	Data Science, AI and Generative Models Independent Test. Intermediate	C	отдел развития цифровых компетенций	1,00	38	2				2A	Online Course
	<b>Major</b>			<b>48,00</b>	<b>1 824</b>	<b>610</b>	<b>144</b>	<b>200</b>	<b>158</b>	<b>108</b>	
	<b>Core Professional Block (Major)</b>			<b>7,00</b>	<b>266</b>	<b>106</b>	<b>48</b>	<b>58</b>			
1	Computer Networks	C	School of Computer Engineering	3,00	114	44	20	24A			
2	Operating Systems	C	Department of Applied Mathematics	4,00	152	62	28	34A			
	<b>Elective Professional Block (Major)</b>			<b>41,00</b>	<b>1 558</b>	<b>504</b>	<b>96</b>	<b>142</b>	<b>158</b>	<b>108</b>	
	<b>Блоки дисциплин по выбору</b>			<b>13,00</b>	<b>494</b>	<b>138</b>		<b>44</b>	<b>62</b>	<b>32</b>	
	<b>Elective Courses 1</b>			<b>13,00</b>	<b>494</b>	<b>138</b>		<b>44</b>	<b>62</b>	<b>32</b>	
1	Methods of Information Security in Financial and Banking Activities	E	Department of Computer Security	4,00	152	32		12	20A		
2	Methods for searching for vulnerabilities and penetration into information systems	E	Department of Computer Security	3,00	114	32				32A	
3	Database Management Systems	E	Department of Applied Mathematics	3,00	114	42		20	22A		Foreign language
4	Information Security Management	E	Department of Computer Security	3,00	114	32		12	20A		
	<b>Elective Courses 2</b>			<b>13,00</b>	<b>494</b>	<b>156</b>	<b>20</b>	<b>20</b>	<b>44</b>	<b>72</b>	
1	How to Process and Store Big Data and Machine Learning	E	Department of Computer Security	3,00	114	32				32A	

2	Number Theory Methods in Cryptography	E	Department of Computer Security	3,00	114	42			22	20A	
3	Theory of Coding, Compression and Data Recovery	E	Department of Computer Security	3,00	114	40	20	20A			
4	Theory of Pseudo-random Generators	E	Department of Computer Security	4,00	152	42			22	20A	
<b>Дисциплины по выбору ОП</b>				<b>28,00</b>	<b>1 064</b>	<b>366</b>	<b>96</b>	<b>98</b>	<b>96</b>	<b>76</b>	
1	English for Research and Publication Purposes	C	School of Foreign Languages	3,00	114	52	14A	16	22A		Foreign language
2	Asymmetric encryption schemes	C	Department of Computer Security	6,00	228	48			24	24A	
3	Cryptographic Methods of Information Security	C	Department of Computer Security	5,00	190	48	24	24A			
4	Microcontroller Systems	C	School of Computer Engineering	5,00	190	86			42	44A	
5	Computer Security Models	C	Department of Computer Security	3,00	114	40	20	20A			
6	Project Seminar	C	Department of Computer Security	3,00	114	32	8	8	8	8A	
7	Systems and Networks of Information Transfer	C	School of Electronic Engineering	3,00	114	60	30	30A			
<b>General Courses</b>				<b>4,00</b>	<b>152</b>	<b>30</b>			<b>20</b>	<b>10</b>	
<b>Optional General Courses</b>				<b>4,00</b>	<b>152</b>	<b>30</b>			<b>20</b>	<b>10</b>	
1	Legal Literacy	C	департамент теории права и сравнительного правоведения	4,00	152	30			20	10A	Online Course
<b>Internship</b>				<b>7,00</b>	<b>266</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	
<b>Project Internship</b>				<b>3,00</b>	<b>114</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	
1	Research or Applied Project	C		3,00	114	8	2	2	2	2A	
<b>Professional Internship</b>				<b>4,00</b>	<b>152</b>						
1	Work Experience Internship	C		4,00	152						

**Curriculum agreed:**

Academic Supervisor		16.05.2025
Dean	Kovalenko D.G.	16.05.2025
Head of Centre for Educational Model Design	LEPESHKIN I.A.	27.05.2025

\* Subject type:

Compulsory course  
Elective course  
Optional course

C  
E  
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