



National Research University Higher School of Economics (HSE)

Basic Curriculum

Field of study 01.03.01 Mathematics
Educational Programme "Mathematics"

Implementing unit: Faculty of Mathematics, HSE - Moscow

APPROVED
28.04.2025
Vice Rector
ROSHCHIN S.Y.
Signed with EDS

Years of Study: 2025/2026 - 2028/2029

Length of Programme: 4 years

Mode of Study: Full Time

Degree: Bachelor's degree

Block Code	Course	Subject type	Credits	Credits by Years				Planned Educational Programme Development Results
				1	2	3	4	
	Degree Programme		240,00	65,00	65,00	62,00	48,00	
	Major		169,00	53,00	44,00	34,00	38,00	
	Core Professional Block (Major)		90,00	47,00	33,00	10,00		
1	Algebra	C	12,00	12,00				GPC-2, GPC-4, PC-2, UC-1, UC-3
2	Introduction to Homotopical Topology	C	5,00	5,00				GPC-2, GPC-4, PC-2, PC-4, UC-1, UC-3
3	Introduction to Discrete Mathematics and Topology	C	8,00	8,00				GPC-2, GPC-5, PC-2, PC-4, UC-2
4	Geometry and Linear Algebra	C	11,00	11,00				GPC-3, GPC-4, PC-3, UC-2, UC-8
5	Calculus	C	11,00	11,00				GPC-4, PC-4, UC-2, UC-4
6	Fourier Analysis	C	5,00		5,00			GPC-3, GPC-5, PC-2, PC-3, UC-2, UC-4, UC-6
7	Smooth Manifolds	C	8,00		8,00			GPC-4, PC-4, UC-2, UC-4
8	Differential Equations	C	5,00		5,00			GPC-2, PC-2, UC-2, UC-4
9	Measure and Integral	C	5,00		5,00			GPC-2, GPC-5, PC-2, UC-2, UC-5
10	Theory of Complex Functions	C	5,00		5,00			GPC-2, GPC-4, PC-2, UC-2, UC-4
11	Algebra	C	5,00		5,00			GPC-3, GPC-5, PC-3, UC-3, UC-5
12	Probability Theory	C	7,00			7,00		GPC-2, PC-2, UC-2
13	Independent Exam "Mathematics. Licenciatus"	C	3,00			3,00		GPC-2, PC-2, UC-2, UC-4
	Elective Professional Block (Major)		79,00	6,00	11,00	24,00	38,00	
	-		3,00	3,00				
1	-	E	3,00	3,00				GPC-4, PC-3, UC-2, UC-4
	Тривиум		3,00	3,00				
1	Research Seminar "Trivium. Mathematics"	C	3,00	3,00				GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, 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

	-		6,00		6,00			
1	-	E	6,00		6,00			GPC-4, PC-2, UC-4, UC-6
	Elective Research Seminars/Elective Courses		5,00		5,00			
1	Research Seminar "Mechanics"	E	5,00		5,00			GPC-4, PC-4, UC-2, UC-8
2	Research Seminar "Logic and Algorithms"	E	5,00		5,00			GPC-3, GPC-5, PC-4, UC-1, UC-3, UC-5
	Elective courses from the general faculty list and/or NISA from the Cadaver of faculty disciplines, projects		19,00			19,00		
1	Introduction to Enumerative Combinatorics (offered in a foreign language)	C	6,00			6,00		GPC-3, GPC-5, PC-3, UC-1, UC-3
2	-	E	13,00			13,00		GPC-2, PC-2, UC-2, UC-4
	-		5,00			5,00		
1	Research Seminar "Mechanics"	E	5,00			5,00		GPC-4, PC-4, UC-2, UC-4
2	Research Seminar "Logic and Algorithms"	E	5,00			5,00		GPC-5, PC-3, UC-2, UC-7
	Elective courses from the general faculty list and/or NISA from the Cadaver of faculty disciplines, projects		38,00				38,00	
1	Introduction to Enumerative Combinatorics (offered in a foreign language)	C	6,00				6,00	GPC-4, PC-2, UC-2, UC-4
2	-	E	42,00				42,00	GPC-4, PC-4, UC-2, UC-6
	Internship		20,00	5,00	5,00	5,00	5,00	
	Fixed		15,00	5,00	5,00	5,00		
1	Term Paper	C	5,00	5,00				GPC-4, PC-2, UC-2, UC-4
2	Term Paper	C	5,00		5,00			GPC-4, PC-4, UC-2, UC-4
3	Term Paper	C	5,00			5,00		GPC-2, PC-2, UC-2, UC-4
	Free							
	Preparation of the Graduate Thesis		5,00				5,00	
1	Preparation of Graduation Thesis	C	5,00				5,00	GPC-2, PC-2, UC-2
	General Courses		17,00	7,00	1,00	6,00	3,00	
	Core General Courses		2,00	1,00	1,00			
1	Safe Living Basics	C	1,00	1,00				GPC-2, GPC-3, PC-4, UC-1, UC-2, UC-4
2	Physical Training	C	1,00		1,00			GPC-2, GPC-4, PC-2, UC-2
	Optional General Courses		15,00	6,00		6,00	3,00	
1	Russian History	C	4,00	4,00				GPC-1, GPC-3, GPC-5, PC-1, PC-3, UC-1, UC-11, UC-3, UC-5, UC-7, UC-9
2	Foundations of Russian Statehood	C	2,00	2,00				GPC-2, GPC-4, PC-2, UC-10, UC-2, UC-4, UC-6, UC-8
3	Economics	C	3,00			3,00		GPC-2, PC-2, UC-2, UC-4
4	Legal Literacy	C	3,00			3,00		GPC-1, PC-1, UC-1, UC-3
5	Philosophy	C	3,00				3,00	GPC-2, PC-2, UC-2, UC-7
	Minor		20,00		10,00	10,00		
1	Minor	C	20,00		10,00	10,00		GPC-2, PC-2, UC-2, UC-4
	Language and Communication		1,00				1,00	
	Examinations		1,00				1,00	
1	Independent English Exam (offered in a foreign language)	C						GPC-1, PC-4, UC-1, UC-3

2	Project Proposal (offered in a foreign language)	C	1,00				1,00	GPC-2, GPC-4, PC-2, UC-2, UC-4
3	Independent Russian Exam	C						GPC-4, PC-4, UC-2, UC-4, UC-5
4	English Language Integrative Exam (offered in a foreign language)	C						GPC-2, PC-2, UC-2, UC-4
Optional Courses								
1	English Language (offered in a foreign language)	O	14,00	8,00	6,00			GPC-1, GPC-4, UC-2, UC-4
2	Academic Writing (English) (offered in a foreign language)	O	2,00				2,00	GPC-4, PC-3, UC-2, UC-4
Data Culture								
			12,00		5,00	7,00		
1	Independent Digital Literacy Test	C						GPC-2, GPC-4, PC-2, PC-4, UC-10, UC-2, UC-4, UC-6, UC-8
2	External Examinations on Digital Skills. Entry-level	C						GPC-2, PC-2, UC-2, UC-4
3	Independent Programming Test. Intermediate	C						GPC-2, PC-1, UC-2, UC-4
4	External Examinations on Digital Skills. Intermediate Level	C						GPC-3, PC-2, UC-2, UC-4
5	Introduction into Python	C	5,00		5,00			GPC-4, PC-2, UC-1, UC-3
6	External Examinations on Digital Skills. Final Level	C						GPC-2, PC-2, UC-2, UC-4
7	Data Science, AI and Generative Models Independent Test. Intermediate	C	1,00			1,00		GPC-4, PC-3, UC-2, UC-4
8	Mathematical Statistics and Data Analysis	C	6,00			6,00		GPC-4, PC-2, UC-2, UC-4
Final State Certification (FSC)								
			1,00				1,00	
Thesis Work								
			1,00				1,00	
1	Presenting of Graduation Thesis	C	1,00				1,00	GPC-4, PC-4, UC-10, UC-8
State Examinations								

Curriculum agreed:

Academic Supervisor	Клименко А.В.	15.04.2025
Dean	SKRIPCHENKO A.S.	15.04.2025
Head of Centre for Educational Model Design	LEPESHKIN I.A.	28.04.2025

* Subject type:

Compulsory course	C
Elective course	E
Optional course	O