



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

06.06.2023

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Years of Study: 2023/2024 - 2026/2027

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	64,00	65,00	61,00	50,00	
	Major		167,00	56,00	44,00	33,00	34,00	
	Core Professional Block (Major)		90,00	47,00	33,00	10,00		
1	Algebra	C	12,00	12,00				GPC-1, GPC-3, GPC-4, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-5
2	Geometry	C	11,00	11,00				GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-5, UC-6
3	Introduction to Discrete Mathematics and Topology	C	8,00	8,00				GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-3, PC-4, UC-1, UC-2, UC-3, UC-5, UC-6
4	Introduction to Homotopical Topology	C	5,00	5,00				GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-4, UC-5, UC-6, UC-7
5	Calculus	C	11,00	11,00				GPC-1, GPC-2, GPC-3, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-5, UC-6
6	Fourier Analysis	C	5,00		5,00			PC-1, PC-2, PC-3, PC-4
7	Smooth Manifolds	C	8,00		8,00			GPC-4, PC-1, PC-2, PC-3, PC-4, UC-5, UC-7
8	Differential Equations	C	5,00		5,00			GPC-1, GPC-2, GPC-3, PC-1, PC-2, PC-3, PC-4, UC-1, UC-3, UC-4
9	Measure and Integral	C	5,00		5,00			GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6

10	Theory of Complex Functions	C	5,00		5,00			GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-5, UC-6
11	Algebra	C	5,00		5,00			GPC-1, GPC-3, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-5, UC-6
12	Probability Theory	C	7,00			7,00		GPC-2, GPC-4, PC-4, UC-1, UC-10, UC-11, UC-3, UC-9
13	Independent Exam "Mathematics. Licenciatus"	C	3,00			3,00		GPC-4, PC-4, UC-2, UC-4
	Elective Professional Block (Major)		77,00	9,00	11,00	23,00	34,00	
	Научно-исследовательские семинары из РУПа факультетских дисциплин, сервисные, прикладные и исследовательские проекты на 6 з.е.		6,00	6,00				
1	-	E	6,00	6,00				GPC-2, GPC-3, PC-2, UC-1, UC-2
	Тривиум		3,00	3,00				
1	Research Seminar "Trivium. Mathematics"	C	3,00	3,00				GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-5, UC-6, UC-7
	-		6,00		6,00			
1	-	E	6,00		6,00			PC-2, PC-4
	Elective Research Seminars/Elective Courses		5,00		5,00			
1	Logic and Algorithms	E	5,00		5,00			PC-2, PC-4
2	Mechanics	E	5,00		5,00			GPC-2, PC-2, PC-4, UC-2
	Elective courses from the general faculty list and/or NISA from the Cadaver of faculty disciplines, projects		18,00			18,00		
1	Introduction to Enumerative Combinatorics (offered in a foreign language)	E	6,00			6,00		GPC-4, PC-4, UC-2, UC-3
2	-	E	18,00			18,00		GPC-2, PC-1, UC-3, UC-5
	-		5,00			5,00		
1	Research Seminar "Mechanics"	E	5,00			5,00		GPC-2, PC-2, UC-2
2	Research Seminar "Logic and Algorithms"	E	5,00			5,00		GPC-1, GPC-3, PC-1, PC-3, UC-1, UC-3
	Elective courses from the general faculty list and/or NISA from the Cadaver of faculty disciplines, projects		34,00				34,00	
1	Introduction to Enumerative Combinatorics (offered in a foreign language)	E	6,00				6,00	UC-4
2	-	E	34,00				34,00	UC-2
	Internship		21,00	5,00	5,00	5,00	6,00	
	Professional Internship							
	Project Internship							
	Research Internship		21,00	5,00	5,00	5,00	6,00	
1	Preparation of Graduation Thesis	C	6,00				6,00	UC-1
2	Term Paper	C	5,00	5,00				UC-1
3	Term Paper	C	5,00		5,00			PC-2, UC-1
4	Term Paper	C	5,00			5,00		UC-1

	General Courses		18,00	3,00	1,00	6,00	8,00	
	Core General Courses		2,00	1,00	1,00			
1	Safe Living Basics	C	1,00	1,00				GPC-4, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6, UC-8
2	Physical Training	C	1,00		1,00			GPC-2, PC-2, PC-4, UC-1
	Optional General Courses		16,00	2,00		6,00	8,00	
1	Philosophy	C	4,00				4,00	GPC-2, PC-2, UC-3
2	Foundations of Russian Statehood	C	2,00	2,00				GPC-2, PC-2, UC-1
3	Russian History	C	4,00				4,00	GPC-2, PC-2, UC-2
4	Economics	C	3,00			3,00		GPC-1, PC-3, PC-4, UC-2, UC-3
5	Legal Literacy	C	3,00			3,00		GPC-2, GPC-3, PC-1, PC-4, UC-1, UC-6, UC-7, UC-8
	Minor		20,00		10,00	10,00		
1	Minor	C	20,00		10,00	10,00		GPC-1, GPC-2, PC-2, UC-1, UC-2, UC-3
	English		1,00				1,00	
	Examinations		1,00				1,00	
1	Project Proposal	C	1,00				1,00	GPC-3, PC-2, UC-1, UC-4
2	English Language Integrative Exam (offered in a foreign language)	C						GPC-1, GPC-3, PC-3, UC-4
3	Independent English Exam (offered in a foreign language)	C						GPC-2, PC-1, UC-1, UC-2
	Optional Courses							
1	Academic Writing (English) (offered in a foreign language)	O	2,00				2,00	UC-1
2	English Language (offered in a foreign language)	O	14,00	8,00	6,00			GPC-2, PC-4, UC-4
	Data Culture		12,00		5,00	7,00		
1	Independent Digital Literacy Test	C						UC-2
2	Independent Programming Test. Intermediate	C						GPC-2, UC-1
3	External Examinations on Digital Skills. Entry-level	C						GPC-2, PC-2, PC-4, UC-1
4	External Examinations on Digital Skills. Intermediate Level	C						GPC-2, GPC-4, PC-2, PC-4, UC-2, UC-4
5	Introduction into Python	C	5,00		5,00			GPC-3, PC-2, UC-1, UC-2
6	External Examinations on Digital Skills. Final Level	C						PC-2
7	Data Science, AI and Generative Models Independent Test. Intermediate	C	1,00			1,00		GPC-1, GPC-2, UC-1
8	Mathematical Statistics and Data Analysis	C	6,00			6,00		GPC-4, GPC-5, PC-2, UC-1
	Final State Certification (FSC)		1,00				1,00	
	Thesis Work		1,00				1,00	
1	Presenting of Graduation Thesis	C	1,00				1,00	UC-1
	State Examinations							

Curriculum agreed:

Academic Supervisor	Клименко А.В.	01.06.2023
Dean	SKRIPCHENKO A.S.	01.06.2023
Head of Centre for Educational Model Design	LEPESHKIN I.A.	02.06.2023

* Subject type:	
Compulsory course	C
Elective course	E
Optional course	O