



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
19.04.2024
Vice Rector
ROSHCHIN S.Y.
Signed with EDS

Years of Study: 2024/2025 - 2027/2028

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	58,00	52,00	
	Major		165,00	53,00	44,00	31,00	37,00	
	Core Professional Block (Major)		95,00	47,00	33,00	15,00		
1	Probability Theory	C	15,00			15,00		GPC-2, GPC-4, PC-4, UC-1, UC-3
2	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
3	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
4	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
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	Geometry and Linear Algebra	C	11,00	11,00				GPC-1, GPC-2, GPC-3, GPC-4, PC-1, PC-2, PC-3, UC-1, UC-10, UC-11, UC-2, UC-3, UC-5, UC-6, UC-9
7	Fourier Analysis	C	5,00		5,00			GPC-2, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2
8	Smooth Manifolds	C	8,00		8,00			GPC-2, GPC-4, PC-1, PC-2, PC-3, PC-4, UC-5, UC-7
9	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
10	Measure and Integral	C	5,00		5,00			GPC-1, GPC-2, GPC-3, GPC-4, GPC-5, PC-1, PC-2, PC-3, PC-4, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6

11	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
12	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
	Elective Professional Block (Major)		70,00	6,00	11,00	16,00	37,00	
	-		3,00	3,00				
1	-	E	3,00	3,00				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
	Научно-исследовательские семинары из РУПа факультетских дисциплин, сервисные, прикладные и исследовательские проекты		53,00			16,00	37,00	
1	-	E	53,00			16,00	37,00	GPC-2, GPC-3, PC-2, UC-1, UC-2
	-		6,00		6,00			
1	-	E	6,00		6,00			PC-2, PC-4
	Elective Research Seminars/Elective Courses		5,00		5,00			
1	Research Seminar "Mechanics"	E	5,00		5,00			GPC-2, GPC-4, PC-2, PC-4, UC-2, UC-4
2	Research Seminar "Logic and Algorithms"	E	5,00		5,00			GPC-2, GPC-4, PC-1, PC-3, UC-2, UC-4
	Internship		23,00	5,00	5,00	5,00	8,00	
	Research Internship		23,00	5,00	5,00	5,00	8,00	
1	Preparation of Graduation Thesis	C	8,00				8,00	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		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-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		15,00	6,00		6,00	3,00	
1	Legal Literacy	C	3,00			3,00		GPC-2, GPC-3, PC-1, PC-4, UC-1, UC-6, UC-7, UC-8
2	Economics	C	3,00			3,00		GPC-1, PC-3, PC-4, UC-2, UC-3
3	Philosophy	C	3,00				3,00	GPC-2, PC-2, UC-3
4	Russian History	C	4,00	4,00				GPC-1, PC-2, UC-3
5	Foundations of Russian Statehood	C	2,00	2,00				GPC-2, PC-2, UC-1
	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
	Language and Communication		1,00				1,00	
	Examinations		1,00				1,00	

1	Independent English Exam (offered in a foreign language)	C						GPC-2, PC-1, UC-1, UC-2
2	Project Proposal (offered in a foreign language)	C	1,00				1,00	GPC-3, PC-2, UC-1, UC-4
3	English Language Integrative Exam (offered in a foreign language)	C						GPC-1, GPC-3, PC-3, UC-4
4	Independent Russian Exam	C						UC-1, UC-2
Optional Courses								
1	Academic Writing (English)	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								
			11,00		5,00	6,00		
1	Data Science, AI and Generative Models Independent Test. Intermediate	C	1,00			1,00		GPC-1, GPC-2, UC-1
2	Data Analysis	E	5,00			5,00		GPC-5, UC-1
3	External Examinations on Digital Skills. Final Level	C						PC-2
4	Independent Digital Literacy Test	C						UC-2
5	Independent Programming Test. Intermediate	C						GPC-2, UC-1
6	External Examinations on Digital Skills. Entry-level	C						GPC-2, PC-2, PC-4, UC-1
7	External Examinations on Digital Skills. Intermediate Level	C						GPC-2, GPC-4, PC-2, PC-4, UC-2, UC-4
8	Introduction into Python	C	5,00		5,00			GPC-3, PC-2, UC-1, UC-2
Final State Certification (FSC)								
			3,00				3,00	
Thesis Work								
			3,00				3,00	
1	Presenting of Graduation Thesis	C	3,00				3,00	UC-1
State Examinations								

Curriculum agreed:

Academic Supervisor	Клименко А.В.	11.04.2024
Dean	SKRIPCHENKO A.S.	11.04.2024
Head of Centre for Educational Model Design	LEPESHKIN I.A.	18.04.2024

* Subject type:

Compulsory course	C
Elective course	E
Optional course	O