



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 01.04.04 Applied Mathematics,
01.04.02 Applied Mathematics and Informatics

Educational Programme "Systems Analysis and Mathematical
Technologies"

Trajectories: "Management Systems and Information
Processing", "Mathematical Methods and Computer
Technologies", "Supercomputer Simulations in Science and
Engineering"

Implementing unit: Tikhonov Moscow Institute of Electronics and
Mathematics, HSE - Moscow

2 nd, 2024/2025 academic year

APPROVED

19.04.2024

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 2 years

Years of Study: 2023/2024 - 2024/2025

Mode of Study: Full Time

Degree: Master's degree / MBA

Block Code	Course	Subject type	Department	Credits	Total Academic Hours	Contact Hours	Allocation of Contact Hours				Additional Information
							1	2	3	4	
	Degree Programme			60,00	2 280	166	70	76	22	4	
	Mathematical Methods and Computer Technologies (Research track)			60,00	2 280	50	14	16	20		
	Major			12,00	456						
	Elective Courses			12,00	456						
1	Methods and Tools for Big Data Processing	E		6,00	228						
2	Multiscale Modeling and Supercomputer Architectures	E		6,00	228						
3	Basics of cybersecurity	E		6,00	228						
	Final State Certification (FSC)			3,00	114						
1	Final Qualification Paper	C		3,00	114						
	Key Seminars			9,00	342	50	14	16	20		
1	Mathematical methods and computer technology (mentor seminar)	C	Department of Applied Mathematics	9,00	342	50	14A	16	20A		
	Magolego			12,00	456						
1	All-university Pool MAGOLEGO Courses	E		12,00	456						
	Internship			24,00	912						
	Research Internship			15,00	570						
1	Graduation Thesis	C		15,00	570						
	Professional Internship			9,00	342						

1	Work Experience Internship	C		9,00	342					
Mathematical Methods and Computer Technologies (Applied track)				60,00	2 280	172	70	76	22	4
Major				12,00	456	116	56	60		
Elective Courses				12,00	456	116	56	60		
1	Methods of Noncommutative Analysis	E	Department of Applied Mathematics	6,00	228	60	28	32A		
2	Multiscale Modeling and Supercomputer Architectures	E	Department of Applied Mathematics	6,00	228	56	28	28A		Foreign language
3	Models of Complex Systems	E	Department of Applied Mathematics	6,00	228	60	30	30A		
4	Basics of cybersecurity	E	Department of Applied Mathematics	6,00	228	30	16	14A		Online Course
Final State Certification (FSC)				3,00	114	2				2
1	Final Qualification Paper	C		3,00	114	2				2A
Key Seminars				9,00	342	50	14	16	20	
1	Mathematical methods and computer technology (mentor seminar)	C	Department of Applied Mathematics	9,00	342	50	14A	16	20A	
Magolego				12,00	456					
1	All-university Pool MAGOLEGO Courses	E		12,00	456					
Internship				24,00	912	4			2	2
Research Internship				15,00	570	2				2
1	Graduation Thesis	C		15,00	570	2				2
Professional Internship				9,00	342	2			2	
1	Work Experience Internship	C		9,00	342	2			2A	
Management Systems and Information Processing (Research track)				60,00	2 280	50	14	16	20	
Major				12,00	456					
Elective Courses				12,00	456					
1	Network Modeling	E		6,00	228					
2	Basics of cybersecurity	E		6,00	228					
3	Management Information System Design	E		6,00	228					
Final State Certification (FSC)				3,00	114					
1	Final Qualification Paper	C		3,00	114					
Key Seminars				9,00	342	50	14	16	20	
1	Control and information processing systems (mentor seminar)	C	Department of Applied Mathematics	9,00	342	50	14A	16	20A	
Magolego				12,00	456					
1	All-university Pool MAGOLEGO Courses	E		12,00	456					
Internship				24,00	912					
Research Internship				15,00	570					
1	Graduation Thesis	C		15,00	570					
Professional Internship				9,00	342					
1	Work Experience Internship	C		9,00	342					
Management Systems and Information Processing (Applied track)				60,00	2 280	176	14	64	94	4

	Major			12,00	456	120		48	72	
	Elective Courses			12,00	456	120		48	72	
1	Methods and Tools for Big Data Processing	E	Department of Applied Mathematics	6,00	228	52		20	32A	
2	Network Modeling	E	Department of Applied Mathematics	3,00	114	56				56A
3	Basics of cybersecurity	E	Department of Applied Mathematics	6,00	228	30	16	14A		Online Course
4	Management Information System Design	E	Department of Applied Mathematics	6,00	228	40	20	20A		
	Final State Certification (FSC)			3,00	114	2				2
1	Final Qualification Paper	C		3,00	114	2				2A
	Key Seminars			9,00	342	50	14	16	20	
1	Control and information processing systems (mentor seminar)	C	Department of Applied Mathematics	9,00	342	50	14A	16	20A	
	Magolego			12,00	456					
1	All-university Pool MAGOLEGO Courses	E		12,00	456					
	Internship			24,00	912	4			2	2
	Research Internship			15,00	570	2				2
1	Graduation Thesis	C		15,00	570	2				2
	Professional Internship			9,00	342	2			2	
1	Work Experience Internship	C		9,00	342	2			2A	
	Supercomputer Simulations in Science and Engineering (Research track)			60,00	2 280	52	14	16	20	2
	Major			18,00	684					
	Elective Courses			12,00	456					
1	Models of Complex Systems	E		6,00	228					
2	Management Information System Design	E	Department of Applied Mathematics	6,00	228	40	20	20A		
	Compulsory Courses			6,00	228					
1	Computational fluid dynamics and kinetics	C		6,00	228					
	Final State Certification (FSC)			3,00	114	2				2
1	Final Qualification Paper	C		3,00	114	2				2A
	Key Seminars			9,00	342	50	14	16	20	
1	Supercomputer Simulation in Science and Engineering (mentor seminar)	C	Department of Applied Mathematics	9,00	342	50	14A	16	20A	
	Magolego			6,00	228					
1	All-university Pool MAGOLEGO Courses	E		6,00	228					
	Internship			24,00	912					
	Research Internship			15,00	570					
1	Graduation Thesis	C		15,00	570					
	Professional Internship			9,00	342					
1	Work Experience Internship	C		9,00	342					
	Supercomputer Simulations in Science and Engineering (Applied track)			60,00	2 280	170	72	74	22	4

Major				12,00	456	116	58	58		
Elective Courses				12,00	456	116	58	58		
1	Multiscale Modeling and Supercomputer Architectures	E	Department of Applied Mathematics	6,00	228	56	28	28A		Foreign language
2	Models of Complex Systems	E	Department of Applied Mathematics	6,00	228	60	30	30A		
3	Management Information System Design	E	Department of Applied Mathematics	6,00	228	40	20	20A		
Final State Certification (FSC)				3,00	114					2
1	Final Qualification Paper	C		3,00	114	2				2A
Key Seminars				9,00	342	50	14	16	20	
1	Supercomputer Simulation in Science and Engineering (mentor seminar)	C	Department of Applied Mathematics	9,00	342	50	14A	16	20A	
Magolego				12,00	456					
1	All-university Pool MAGOLEGO Courses	E		12,00	456					
Internship				24,00	912	4			2	2
Research Internship				15,00	570	2				2
1	Graduation Thesis	C		15,00	570	2				2
Professional Internship				9,00	342	2			2	
1	Work Experience Internship	C		9,00	342	2			2A	

Curriculum agreed:

Academic Supervisor	SLASTNIKOV S.A.	06.03.2024
Dean	KROUK E.A.	12.03.2024
Head of Centre for Educational Model Design	LEPESHKIN I.A.	18.04.2024

* Subject type:

Compulsory course
Elective course

C
E