



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 01.03.02 Applied Mathematics and Information Science

Educational Programme "Applied Mathematics and Information Science"

Specializations: "Choice and Decision Theory", "Data Analysis and Intelligent Systems", "Distributed Systems", "Industrial Software Engineering", "Machine Learning and Applications", "Mathematical and Computational Engineering in Science and Business", "Theoretical Computer Science"

Implementing unit: Faculty of Computer Science, HSE - Moscow
2 nd, 2023/2024 academic year

APPROVED

27.04.2023

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 4 years

Years of Study: 2022/2023 - 2025/2026

Mode of Study: Full Time

Degree: Bachelor's degree

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	2 442	1 062	242	232	274	274	
Data Culture											
1	External Examinations on Digital Skills. Entry-level	C	отдел развития цифровых компетенций			2		2A			
2	External Examinations on Digital Skills. Intermediate Level	C	отдел развития цифровых компетенций			2				2A	
3	Independent Programming Test. Advanced Level	C	отдел развития цифровых компетенций			2			2A		Online Course
Major				44,00	1 672	762	166	156	200	200	
Core Professional Block (Major)				27,00	1 026	546	124	114	120	120	
-				11,00	418	150		42	60	60	
1	Computer Architecture	C	Joint Department with Yandex	5,00	190	70	34	36A			
2	Operating Systems	C	Joint Department with Yandex	6,00	228	80			40	40A	
Mathematical Statistics				5,00	190	120			60	60	
1	Mathematical Statistics	E	Department of Big Data and Information Retrieval	5,00	190	120			60	60A	
2	Mathematical Statistics (advanced course)	E	Department of Big Data and Information Retrieval	5,00	190	120			60	60A	
Математический анализ 2				3,00	114	136	28	28			
1	Calculus 2	E	Department of Big Data and Information Retrieval	3,00	114	56	28	28A			Online Course

2	Calculus 2	E	Department of Big Data and Information Retrieval	3,00	114	56	28	28A			Online Course
	Programming			3,00	114	56	56				
	-			3,00	114	56	56				
1	Algorithms and Data Structures 2	E	Joint Department with Yandex	3,00	114	56	56A				
	-			3,00	114	56	56				
1	Algorithms and Data Structures 2	E	Joint Department with Yandex	3,00	114	56	56A				
	Probability Theory			5,00	190	84	40	44			
1	Probability Theory	E	Department of Big Data and Information Retrieval	5,00	190	84	40	44A			
2	Probability Theory (advanced course)	E	Department of Big Data and Information Retrieval	5,00	190	84	40	44A			
	Elective Professional Block (Major)			17,00	646	216	42	42	80	80	
	Обязательная дисциплина по выбору (2 курс 1 семестр)			5,00	190	56	28	28			
1	C++ Programming Language	E	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			
2	Python Programming Language (advanced course)	E	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			
3	Rust Programming Language	E	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			
	Обязательная дисциплина по выбору (2 курс 2 семестр)			12,00	456	160			80	80	
1	Discrete Mathematics 2	E	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
2	Differential Equations	E	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
3	Complex Analysis	E	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
4	Fundamentals of Matrix Computations	E	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
5	Functional Analysis	E	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
	Minor			10,00	380	152	38	38	38	38	
1	Minor	E		10,00	380	152	38	38A	38	38A	
	English										
	Optional Courses										
1	English	O		6,00	228	104	28	32	44A		Foreign language, Credits only to the cumulative rating
	General Courses			1,00	200	144	36	36	36	36	
	Core General Courses			1,00	200	144	36	36	36	36	
1	Physical Training	C	Department of Physical Training	1,00	200	144	36	36	36	36A	
	Internship			5,00	190	4	2	2			
	Project Internship			5,00	190	2		2			
1	-	C		5,00	190	2		2	2	2	
	Professional Internship					2	2				
1	Educational Internship	C				2	2A				

Curriculum agreed:

Academic Supervisor	SOKOLOV E.A.	20.04.2023
Dean	ARZHANTSEV I.V.	21.04.2023
Head of Centre for Educational Model Design	LEPESHKIN I.A.	26.04.2023

* Subject type:

Compulsory course

C

Elective course

E

Optional course

O