



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 01.03.02 Applied Mathematics and Information
Science

Educational Programme "Computing and Data Science"
Specializations: "Industrial Programming", "Machine Learning and
Applications"

Implementing unit: Faculty of Computer Science, HSE - Moscow
3 rd, 2025/2026 academic year

APPROVED

21.04.2025

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 4 years

Years of Study: 2023/2024 - 2026/2027

Mode of Study: Full Time

Degree: Bachelor's degree

Block Code	Course	Subject type	Department	Period of execution	Credits	Total Academic Hours	Contact Hours	Allocation of Contact Hours				Additional Information
								1	2	3	4	
	Degree Programme				60,00	2 280	836	174	204	238	220	
	Data Culture				5,00	190	52		30	20	2	
	Block of Elective Disciplines Data Culture				4,00	152	48		28	20		
1	Deep Learning 1	E	Department of Big Data and Information Retrieval		4,00	152	48		28	20A		
2	Service-Oriented Architectures	E	базовая кафедра Т-Банка		4,00	152	80			40	40A	Foreign language
	Data Culture Disciplines				1,00	38	4		2		2	
1	External Examinations on Digital Skills. Final Level	C	отдел развития цифровых компетенций				2		2A			
2	Data Science, AI and Generative Models Independent Test. Advanced Level	C	отдел развития цифровых компетенций		1,00	38	2				2A	Online Course
	Major				37,00	1 406	476	98	98	140	140	
	Core Professional Block (Major)				12,00	456	136	28	28	40	40	
1	Machine Learning 1	C	Department of Big Data and Information Retrieval		6,00	228	56	28	28A			
2	Optimization Methods	C	Joint Department of Mathematical Methods in System Analysis with RAS Institute of System Analysis		6,00	228	80			40	40A	
	Elective Professional Block (Major)				25,00	950	340	70	70	100	100	
	Elective Courses				11,00	418	136	28	28	40	40	
	Block 1				5,00	190	56	28	28			
1	Functional Programming	E	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
2	SQL Language	E	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
	Block 2				6,00	228	80			40	40	
1	Computer Networks	E	базовая кафедра Т-Банка		6,00	228	80			40	40A	

2	Recommender Systems	E	Department of Big Data and Information Retrieval		6,00	228	80			40	40A	
	Research Seminar 3rd Year				3,00	114	68	14	14	20	20	
	Research Seminar 1				3,00	114	68	14	14	20	20	
1	Research Seminar "Machine Learning and Applications 1"	E	Department of Big Data and Information Retrieval		3,00	114	68	14	14A	20	20A	Foreign language
2	Research Seminar "Industrial Programming 1"	E	Department of Big Data and Information Retrieval		3,00	114	68	14	14A	20	20A	Foreign language
	Specialization				11,00	418	136	28	28	40	40	
	Специализация "Машинное обучение и приложения"				11,00	418	136	28	28	40	40	
1	Advanced Statistics 2	C	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
2	Machine Learning 2	C	Department of Big Data and Information Retrieval		6,00	228	80			40	40A	
	Специализация "Промышленное программирование"				11,00	418	136	28	28	40	40	
1	Distributed Systems	C	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
2	Theory and Practice of Concurrency	C	Department of Big Data and Information Retrieval		6,00	228	80			40	40A	
	Minor				10,00	380	304	76	76	76	76	
1	Minor	E			10,00	380	304	76	76A	76	76A	
	English						2			2		
	Examinations						2			2		
1	Independent English Exam	C	School of Foreign Languages				2			2A		Foreign language
	Internship				8,00	304	2				2	
	Project Internship				5,00	190	2				2	
1	-	C		F	5,00	190	2				2A	
	Professional Internship				3,00	114						
1	Work Experience Internship	C		F	3,00	114						

Curriculum agreed:

Academic Supervisor	Промыслов В.В.	06.03.2025
Dean	ARZHANTSEV I.V.	06.03.2025
Head of Centre for Educational Model Design	LEPESHKIN I.A.	18.04.2025

* Subject type:

Compulsory course
Elective course
Optional course

C
E
O

Period of execution:

Fixed

F