



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, 2024/2025 academic year

APPROVED

27.05.2024

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	2 280	496	104	134	138	120	
	Data Culture			5,00	190	52		30	20	2	
	Elective Courses			4,00	152	48		28	20		
1	Deep Learning 1	E	Department of Big Data and Information Retrieval	4,00	152	48		28	20A		Online Course, Foreign language
2	Service-Oriented Architectures	E	базовая кафедра Тинькофф	4,00	152	80			40	40A	Foreign language
	Compulsory 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	136	28	28	40	40	
	Core Professional Block (Major)			12,00	456	136	28	28	40	40	
	Subject Areas			12,00	456	136	28	28	40	40	
	по алгоритмам и структурам данных			6,00	228	56	28	28			
1	Machine Learning 1	C	Department of Big Data and Information Retrieval	6,00	228	56	28	28A			
	по методам оптимизации			6,00	228	80			40	40	
1	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						
	Блоки дисциплин по выбору			11,00	418						
	First block (1 of 7)			5,00	190						

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			
Second block (1 of 6)				6,00	228						
1	Data Analysis in Business	E	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
2	Computer Networks	E	базовая кафедра Тинькофф	6,00	228	80			40	40A	
Научно-исследовательские семинары				3,00	114						
1	Research Seminar "Machine Learning and Applications 1"	E	Department of Big Data and Information Retrieval	3,00	114	68	14A	14	20	20A	Foreign language
2	Research Seminar "Industrial Programming 1"	E	Department of Big Data and Information Retrieval	3,00	114	68	14A	14	20	20A	Foreign language
Специализации				11,00	418						
Специализация "Машинное обучение и приложения"				11,00	418	136	28	28	40	40	
1	Machine Learning 2	C	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	
2	Applied Statistical Data Analysis	C	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			
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	Term Paper	C		5,00	190	2				2A	
Professional Internship				3,00	114						
1	Work Experience Internship	C		3,00	114						

Curriculum agreed:

Academic Supervisor	PROMYSLOV V.V.	07.05.2024
Dean	ARZHANTSEV I.V.	07.05.2024
Head of Centre for Educational Model Design	LEPESHKIN I.A.	22.05.2024

* Subject type:

Compulsory course
Elective course
Optional course

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