



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	508	120	134	134	120	
Data Culture				5,00	190	64	16	30	16	2	
1	External Examinations on Digital Skills. Final Level	C	отдел развития цифровых компетенций			2		2A			
2	Deep Learning 1	C	Department of Big Data and Information Retrieval	4,00	152	60	16	28A	16A		Online Course, Foreign language
3	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

C

Elective course

E

Optional course

0