



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
4 th, 2025/2026 academic year

APPROVED

21.04.2025

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	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	368	102	114	143	9	
	Major				33,00	1 254	324	86	98	140		
	Elective Professional Block (Major)				33,00	1 254	324	86	98	140		
	Блоки дисциплин по выбору				18,00	684	192	56	56	80		
	Third block (2 of 9)				10,00	380	112	56	56			
1	Computer Systems Security	E	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
2	Deep Learning for Graph Data Analysis	E	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
3	Deep Learning for Natural Language Processing	E	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
	Fourth block (2 of 7)				8,00	304	80			80		
1	Reinforcement Learning	E	Department of Big Data and Information Retrieval		4,00	152	40			40A		
2	Industrial Programming in Haskell	E	Department of Big Data and Information Retrieval		4,00	152	40			40A		
3	Theory and Practice of Online Experiments	E	Department of Big Data and Information Retrieval		4,00	152	40			40A		
	Research Seminars				6,00	228	48	14	14	20		
	Research Seminars (1 of 2) 4Th Year				6,00	228	48	14	14	20		
1	Research Seminar "Machine Learning and Applications 2"	E	Department of Big Data and Information Retrieval		6,00	228	48	14	14A	20A		Foreign language
2	Research Seminar "Industrial Programming 2"	E	Department of Big Data and Information Retrieval		6,00	228	48	14	14A	20A		Foreign language
	Специализации				9,00	342	84	16	28	40		
	Специализация "Машинное обучение и приложения"				9,00	342	96	28	28	40		
1	Deep Learning 2	C	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
2	Large-Scale Machine Learning	C	Department of Big Data and Information Retrieval		4,00	152	40			40A		Online Course

	Специализация "Промышленное программирование"				9,00	342	96	28	28	40		
1	Cloud Computing	C	Department of Big Data and Information Retrieval		4,00	152	40			40A		
2	Theory of Fault-Tolerant Distributed Systems	C	Department of Big Data and Information Retrieval		5,00	190	56	28	28A			
	English				1,00	38	2			2		
	Optional Courses											
1	Academic writing	O			2,00	76	48		28	20A		Foreign language, Credits only to the cumulative rating
	Examinations				1,00	38	2			2		
1	Project Proposal	C	School of Foreign Languages		1,00	38	2			2A		Foreign language
	Final State Certification (FSC)				6,00	228	6				6	
	Thesis Work				6,00	228	6				6	
1	Presenting of Graduation Thesis	C			6,00	228	6				6A	
	General Courses				4,00	152	30	14	16			
	Optional General Courses				4,00	152	30	14	16			
1	Psychology	C	Department of Psychology		4,00	152	30	14	16A			Online Course
	Internship				16,00	608	6	2		1	3	
	Research Internship				16,00	608	4			1	3	
1	Preparation of Graduation Thesis	C			10,00	380	2			1	1A	
2	Graduation Internship	C		F	6,00	228	2				2A	
	Professional Internship						2	2				
1	Work Experience Internship	C		F			2	2A				

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