



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 01.03.02 Applied Mathematics and Information Science

Educational Programme "Data Science and Business Analytics"

Implementing unit: Faculty of Computer Science, HSE - Moscow

4 th, 2023/2024 academic year

APPROVED

29.05.2023

Vice Rector  
ROSHCHIN S.Y.  
Signed with EDS

Length of Programme: 4 years

Years of Study: 2020/2021 - 2023/2024

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	
<b>Degree Programme</b>				<b>60,00</b>	<b>2 280</b>	<b>676</b>	<b>164</b>	<b>158</b>	<b>244</b>	<b>6</b>	
<b>Major</b>				<b>36,00</b>	<b>1 368</b>	<b>540</b>	<b>162</b>	<b>130</b>	<b>144</b>		
<b>Elective Professional Block (Major)</b>				<b>36,00</b>	<b>1 368</b>	<b>540</b>	<b>162</b>	<b>130</b>	<b>144</b>		
<b>Major Courses</b>				<b>14,00</b>	<b>532</b>	<b>152</b>	<b>56</b>	<b>56</b>	<b>40</b>		
1	Machine Learning 2	C	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			Foreign language
2	Game Theory and Industrial Organization	C	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			Foreign language
3	Game Theory and Strategic Management	C	Department of Big Data and Information Retrieval	4,00	152	40			40A		Foreign language
<b>Elective Courses (Block 1)</b>				<b>5,00</b>	<b>190</b>	<b>56</b>	<b>28</b>	<b>28</b>			
1	Quantitative Finance	E	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			Foreign language
2	Agile Basics: Product Management and Teamwork	E	Department of Big Data and Information Retrieval	5,00	190	56	28	28A			Foreign language
<b>Elective Courses (Block 2)</b>				<b>4,00</b>	<b>152</b>	<b>40</b>			<b>40</b>		
1	DevOps	E	Department of Big Data and Information Retrieval	4,00	152	20			20A		Foreign language
2	Generative Models in Machine Learning	E	Department of Big Data and Information Retrieval	4,00	152	40			40A		Foreign language
3	Computer Vision	E	Department of Big Data and Information Retrieval	4,00	152	40			40A		Foreign language
4	How to Win a Data Science Competition: Learn from Top Kagglers	E	Department of Big Data and Information Retrieval	4,00	152	20			20A		Foreign language
<b>Elective Courses (Block 3)</b>				<b>3,00</b>	<b>114</b>	<b>36</b>	<b>36</b>				
1	Introduction to the Study of Language for Computer Scientists	E	Department of Big Data and Information Retrieval	3,00	114	36	36A				Foreign language

2	Philosophy of Artificial Intelligence	E	Department of Big Data and Information Retrieval	3,00	114	36	36A				Foreign language
<b>Elective Courses (Block 4)</b>				<b>6,00</b>	<b>228</b>	<b>104</b>	<b>28</b>	<b>32</b>	<b>44</b>		
1	Core Management Concepts	E	Department of Big Data and Information Retrieval	6,00	228	96	28	28A	40A		Foreign language
2	Asset Pricing and Financial Markets	E	Department of Big Data and Information Retrieval	6,00	228	96	28	28A	40A		Foreign language
<b>Научно-исследовательский семинар 4 курс</b>				<b>4,00</b>	<b>152</b>	<b>152</b>	<b>14</b>	<b>14</b>	<b>20</b>		
1	Research Seminar "Data Analysis in the Natural Sciences"	E	Department of Big Data and Information Retrieval	4,00	152	48	14	14	20A		Foreign language
2	Research Seminar "Data Science in Financial Markets"	E	Department of Big Data and Information Retrieval	4,00	152	48	14	14	20A		Foreign language
3	Research Seminar "Risk-Management"	E	базовая кафедра ПАО Сбербанк "Финансовые технологии и анализ данных"	4,00	152	48	14	14	20A		Foreign language
4	Research Seminar "Data analysis in complex systems"	E	Department of Data Analysis and Artificial Intelligence	4,00	152	48	14	14	20A		Foreign language
<b>Minor</b>				<b>9,00</b>	<b>342</b>	<b>128</b>		<b>28</b>	<b>100</b>		
1	Information Systems	C	Department of Big Data and Information Retrieval	4,00	152	60			60A		Online Course, Foreign language
2	Statistical Methods for Market Research	C	Department of Big Data and Information Retrieval	5,00	190	68		28A	40A		Foreign language
<b>Final State Certification (FSC)</b>				<b>3,00</b>	<b>114</b>	<b>2</b>				<b>2</b>	
<b>Thesis Work</b>				<b>3,00</b>	<b>114</b>	<b>2</b>				<b>2</b>	
1	Graduation Thesis Defence	C		3,00	114	2				2A	Foreign language
<b>Internship</b>				<b>12,00</b>	<b>456</b>	<b>6</b>	<b>2</b>			<b>4</b>	
<b>Research Internship</b>				<b>12,00</b>	<b>456</b>	<b>4</b>				<b>4</b>	
1	Preparation of Graduation Thesis	C		7,00	266	2				2	Foreign language
2	Graduation Internship	C		5,00	190	2				2A	Foreign language
<b>Professional Internship</b>						<b>2</b>	<b>2</b>				
1	Work Experience Internship	C				2	2A				Foreign language

**Curriculum agreed:**

Academic Supervisor SAMONENKO I.Y. 25.05.2023

Dean ARZHANTSEV I.V. 25.05.2023

Head of Centre for Educational Model Design LEPESHKIN I.A. 29.05.2023

\* Subject type:

Compulsory course

C

Elective course

E