

## National Research University Higher School of Economics (HSE)

## Curriculum

Field of study 01.03.02 Applied Mathematics and Information Science

Educational Programme "Applied Mathematics and Information Science"

Specialization: "Data Analysis and Intelligent Systems",  
"Decision Choice and Analysis", "Distributed Systems",  
"Machine Learning and Applications", "Mathematical and  
Computational Engineering in Science and Business",  
"Theoretical Computer Science"

Faculty of Computer Science, HSE - Moscow

2 nd, 2021/2022 academic year

APPROVED by

Vice Rector

ROSHCHIN Y.S.

27.04.2021

Length of Programme: 4 years

Years of Study: 2020/2021 - 2023/2024

Mode of Study: Full Time

Degree: Bachelor's degree

Number of Students: 300

Number of Groups: 10

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</b>	<b>3 648</b>	<b>1 565</b>	<b>392</b>	<b>362</b>	<b>442</b>	<b>369</b>	
	<b>Major</b>			<b>42</b>	<b>2 736</b>	<b>1 158</b>	<b>288</b>	<b>254</b>	<b>324</b>	<b>292</b>	
	<b>Core Professional Block (Major)</b>			<b>30</b>	<b>1 938</b>	<b>860</b>	<b>228</b>	<b>176</b>	<b>244</b>	<b>212</b>	
	<b>Subject Areas</b>			<b>30</b>	<b>1 938</b>	<b>860</b>	<b>228</b>	<b>176</b>	<b>244</b>	<b>212</b>	
	<b>Algorithms and Data Structures</b>			<b>4</b>	<b>304</b>	<b>104</b>	<b>104</b>				
	<b>Алгоритмы и структуры данных 2</b>				<b>304</b>	<b>104</b>	<b>104</b>				
1	Algorithms and Data Structures 2	C	Joint Department with Yandex	4	152	52	52A				
2	Algorithms and data structures 2	C	Joint Department with Yandex	4	152	52	52A				
	<b>Computer Architecture and Operating Systems</b>			<b>9</b>	<b>342</b>	<b>168</b>		<b>48</b>	<b>68</b>	<b>52</b>	
1	Computer Architecture and Operating Systems	C	Joint Department with Yandex	9	342	168		48	68	52A	
	<b>Mathematical Analysis</b>			<b>8</b>	<b>608</b>	<b>300</b>	<b>68</b>	<b>64</b>	<b>88</b>	<b>80</b>	
	<b>Математический анализ 2</b>				<b>608</b>	<b>300</b>	<b>68</b>	<b>64</b>	<b>88</b>	<b>80</b>	
1	Calculus 2	C	Department of Big Data and Information Retrieval	8	304	150	34	32A	44	40A	Online Course
2	Calculus 2	C	Department of Big Data and Information Retrieval	8	304	150	34	32A	44	40A	Online Course
	<b>Probability Theory and Mathematical Statistics</b>				<b>684</b>	<b>288</b>	<b>56</b>	<b>64</b>	<b>88</b>	<b>80</b>	
1	Probability Theory and Mathematical Statistics	C	Department of Big Data and Information Retrieval	9	342	144	28	32A	44	40A	

2	Probability Theory and Mathematical Statistics	C	Department of Big Data and Information Retrieval	9	342	144	28	32A	44	40A	
<b>Elective Professional Block (Major)</b>				<b>12</b>	<b>798</b>	<b>298</b>	<b>60</b>	<b>78</b>	<b>80</b>	<b>80</b>	
<b>Обязательная дисциплина (2 курс)</b>					<b>114</b>	<b>26</b>	<b>12</b>	<b>14</b>			
1	Modern Software Engineering Practices	C	Department of Big Data and Information Retrieval	3	114	26	12	14A			
<b>Обязательная дисциплина по выбору (2 курс 1 семестр)</b>					<b>304</b>	<b>112</b>	<b>48</b>	<b>64</b>			
1	Mathematical Logic	E	Department of Big Data and Information Retrieval	4	152	56	24	32A			
2	C++ Programming Language	E	Joint Department with Yandex	4	152	56	24	32A			
<b>Обязательная дисциплина по выбору (2 курс 2 семестр)</b>					<b>380</b>	<b>160</b>			<b>80</b>	<b>80</b>	
1	Differential Equations	E	Department of Big Data and Information Retrieval	5	190	80			40A	40A	
2	Fundamentals of Matrix Computations	E	Department of Big Data and Information Retrieval	5	190	80			40A	40A	
<b>Minor</b>				<b>10</b>	<b>380</b>	<b>152</b>	<b>38</b>	<b>38</b>	<b>38</b>	<b>38</b>	
1	Minor	E		10	380	152	38	38A	38	38A	
<b>English</b>					<b>228</b>	<b>107</b>	<b>28</b>	<b>32</b>	<b>44</b>	<b>3</b>	
<b>Optional Courses</b>					<b>228</b>	<b>104</b>	<b>28</b>	<b>32</b>	<b>44</b>		
1	English	O		6	228	104	28	32A	44A		Foreign language, Credits only to the cumulative rating
<b>Examinations</b>						<b>3</b>				<b>3</b>	
1	Independent English Language Test		центр поддержки и мониторинга образовательных программ			3				3A	
<b>General Courses</b>				<b>1</b>	<b>38</b>	<b>144</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	
<b>Core General Courses</b>				<b>1</b>	<b>38</b>	<b>144</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	
1	Physical Training	C	Department of Physical Training	1	38	144	36	36	36	36A	
<b>Internship</b>				<b>7</b>	<b>266</b>	<b>4</b>	<b>2</b>	<b>2</b>			
<b>Project Internship</b>				<b>7</b>	<b>266</b>	<b>2</b>		<b>2</b>			
1	Программный проект	C	Department of Big Data and Information Retrieval	7	266	2		2	2	2	
<b>Professional Internship</b>						<b>2</b>	<b>2</b>				
1	Educational Internship	C				2	2A				

Academic Supervisor SOKOLOV E.A. 09.04.2021

Dean ARZHANTSEV I.V. 11.04.2021

Head of Degree Programmes Development Office MAMONOVA M.A. 27.04.2021

\* Subject type:

Compulsory course

C

Elective course  
Optional course

E  
O