



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"

Specializations: "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"

Implementing unit: Faculty of Computer Science, HSE - Moscow  
2 nd, 2022/2023 academic year

APPROVED

06.05.2022

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 4 years

Years of Study: 2021/2022 - 2024/2025

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>1 710</b>	<b>846</b>	<b>240</b>	<b>252</b>	<b>292</b>	<b>264</b>	
<b>Data Culture</b>											
1	Independent Programming Test. Advanced Level	C	Center for Support and Monitoring of Degree Programs			3			3A		
<b>Major</b>				<b>44,00</b>	<b>1 482</b>	<b>546</b>	<b>164</b>	<b>176</b>	<b>218</b>	<b>190</b>	
<b>Core Professional Block (Major)</b>				<b>31,00</b>	<b>1 178</b>	<b>384</b>	<b>128</b>	<b>130</b>	<b>178</b>	<b>150</b>	
<b>Subject Areas</b>				<b>31,00</b>	<b>1 178</b>	<b>384</b>	<b>128</b>	<b>130</b>	<b>178</b>	<b>150</b>	
<b>Algorithms and Data Structures</b>				<b>4,00</b>	<b>152</b>		<b>52</b>				
<b>Алгоритмы и структуры данных 2</b>				<b>4,00</b>	<b>152</b>	<b>52</b>	<b>52</b>				
1	Algorithms and Data Structures 2	E	Joint Department with Yandex	4,00	152	52	52A				
2	Algorithms and Data Structures 2	E	Joint Department with Yandex	4,00	152	52	52A				
<b>Computer Architecture and Operating Systems</b>				<b>9,00</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	9,00	342	168		48	68A	52A	
<b>Mathematical Analysis</b>				<b>8,00</b>	<b>304</b>		<b>34</b>	<b>32</b>	<b>44</b>	<b>40</b>	
<b>Математический анализ 2</b>				<b>8,00</b>	<b>304</b>	<b>150</b>	<b>34</b>	<b>32</b>	<b>44</b>	<b>40</b>	
1	Calculus 2	E	Department of Big Data and Information Retrieval	8,00	304	150	34	32A	44	40A	Online Course

2	Calculus 2	E	Department of Big Data and Information Retrieval	8,00	304	150	34	32A	44	40A	Online Course
<b>Probability Theory and Mathematical Statistics</b>				<b>10,00</b>	<b>380</b>	<b>216</b>	<b>42</b>	<b>50</b>	<b>66</b>	<b>58</b>	
<b>Mathematical Statistics</b>				<b>5,00</b>	<b>190</b>	<b>124</b>			<b>66</b>	<b>58</b>	
1	Mathematical Statistics	E	Department of Big Data and Information Retrieval	5,00	190	124			66	58A	
2	Mathematical Statistics (advanced course)	E	Department of Big Data and Information Retrieval	5,00	190	124			66	58A	
<b>Probability Theory</b>				<b>5,00</b>	<b>190</b>	<b>92</b>	<b>42</b>	<b>50</b>			
1	Probability Theory	E	Department of Big Data and Information Retrieval	5,00	190	92	42	50A			
2	Probability Theory (advanced course)	E	Department of Big Data and Information Retrieval	5,00	190	92	42	50A			
<b>Elective Professional Block (Major)</b>				<b>13,00</b>	<b>304</b>	<b>162</b>	<b>36</b>	<b>46</b>	<b>40</b>	<b>40</b>	
<b>Обязательная дисциплина (2 курс)</b>				<b>3,00</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	3,00	114	26	12	14A			
<b>Обязательная дисциплина по выбору (2 курс 1 семестр)</b>				<b>5,00</b>	<b>190</b>	<b>56</b>	<b>24</b>	<b>32</b>			
1	Mathematical Logic	E	Department of Big Data and Information Retrieval	5,00	190	56	24	32A			
2	C++ Programming Language	E	Joint Department with Yandex	5,00	190	56	24	32A			
3	Python Programming Language (advanced course)	E	Department of Big Data and Information Retrieval	5,00	190	56	24	32A			
4	Rust Programming Language	E	Department of Big Data and Information Retrieval	5,00	190	56	24	32A			
<b>Обязательная дисциплина по выбору (2 курс 2 семестр)</b>				<b>5,00</b>		<b>80</b>			<b>40</b>	<b>40</b>	
1	Differential Equations	E	Department of Big Data and Information Retrieval	5,00	190	80			40	40A	
2	Fundamentals of Matrix Computations	E	Department of Big Data and Information Retrieval	5,00	190	80			40	40A	
<b>Minor</b>				<b>10,00</b>		<b>152</b>	<b>38</b>	<b>38</b>	<b>38</b>	<b>38</b>	
1	Minor	E		10,00		152	38	38A	38	38A	
<b>English</b>											
<b>Optional Courses</b>											
1	English	O		6,00		104	28	32A	44		Foreign language, Credits only to the cumulative rating
<b>General Courses</b>				<b>1,00</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>1,00</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	1,00	38	144	36	36	36	36A	
<b>Internship</b>				<b>5,00</b>	<b>190</b>	<b>4</b>	<b>2</b>	<b>2</b>			
<b>Project Internship</b>				<b>5,00</b>	<b>190</b>	<b>2</b>		<b>2</b>			
1	Курсовой проект 1	C		5,00	190	2		2	2	2	
<b>Professional Internship</b>						<b>2</b>	<b>2</b>				
1	Educational Internship	C				2	2A				

Curriculum agreed:

Academic Supervisor	SOKOLOV E.A.	05.05.2022
Dean	ARZHANTSEV I.V.	05.05.2022
Head of Degree Programmes Development Office	MAMONOVA M.A.	06.05.2022

\* Subject type:

Compulsory course

C

Elective course

E

Optional course

O