



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 09.03.04 Software Engineering

Educational Programme "Software Engineering"

Specializations: "Analysis and Software Development Tools",

"Industrial Software Engineering", "System Programming"

Implementing unit: Faculty of Computer Science, HSE - Moscow

1 st, 2023/2024 academic year

APPROVED

19.06.2023

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 4 years

Years of Study: 2023/2024 - 2026/2027

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>2 480</b>	<b>442</b>	<b>358</b>	<b>366</b>	<b>396</b>	<b>330</b>	
	<b>Data Culture</b>					<b>2</b>				<b>2</b>	
1	Independent Digital Literacy Test	C	отдел развития цифровых компетенций			2				2A	Online Course
	<b>Major</b>			<b>50,00</b>	<b>1 900</b>	<b>120</b>	<b>216</b>	<b>292</b>	<b>344</b>	<b>276</b>	
	<b>Core Professional Block (Major)</b>			<b>41,00</b>	<b>1 558</b>		<b>204</b>	<b>244</b>	<b>284</b>	<b>276</b>	
	<b>Core Disciplines 1 year</b>			<b>31,00</b>	<b>1 178</b>						
1	Algebra	C	Department of Big Data and Information Retrieval	9,00	342	136	28	28A	40	40A	
2	Introduction into Software Engineering	C	Department of Software Engineering	4,00	152	36	18	18A			
3	Discrete Mathematics	C	Department of Big Data and Information Retrieval	9,00	342	136	28	28A	40	40A	
4	Calculus	C	базовая кафедра фирмы 1С	9,00	342	136	28	28A	40	40A	
	<b>Programming</b>			<b>10,00</b>	<b>380</b>	<b>272</b>	<b>56</b>	<b>56</b>	<b>80</b>	<b>80</b>	
1	Algorithms and Algorithmic Languages	C	Joint System Programming Department with Institute for System Programming of the Russian Academy of Sciences	7,00	266	192	56	56A	80A		
2	Computer Architecture and Assembly Language	C	Joint System Programming Department with Institute for System Programming of the Russian Academy of Sciences	3,00	114	80				80A	
	<b>Programming</b>			<b>10,00</b>	<b>380</b>	<b>272</b>	<b>56</b>	<b>56</b>	<b>80</b>	<b>80</b>	
1	C++ Programming Basics	C	Department of Software Engineering	3,00	114	80				80A	

2	C# Programming	C	Department of Software Engineering	7,00	266	192	56A	56A	80A		
	<b>Elective Professional Block (Major)</b>			<b>9,00</b>	<b>342</b>	<b>120</b>	<b>12</b>	<b>48</b>	<b>60</b>		
	<b>Computer-based Workshop</b>			<b>6,00</b>	<b>228</b>	<b>76</b>		<b>36</b>	<b>40</b>		
	<b>Computer-based Workshop on Algebra</b>			<b>3,00</b>	<b>114</b>	<b>38</b>		<b>18</b>	<b>20</b>		
1	Computer-based Workshop on Algebra in Matlab	E	Department of Software Engineering	3,00	114	34		14	20A		
2	Computer Practicum on Algebra in Python	E	Department of Software Engineering	3,00	114	34		14	20A		
	<b>Computer-based Workshop on Mathematical Analysis</b>			<b>3,00</b>	<b>114</b>	<b>38</b>		<b>18</b>	<b>20</b>		
1	Computer-based Workshop on Mathematical Analysis in Matlab	E	Department of Software Engineering	3,00	114	34		14	20A		
2	Computer Practicum on Mathematical Analysis in Python	E	Department of Software Engineering	3,00	114	34		14	20A		
	<b>Научно-исследовательский семинар, 1 курс</b>			<b>3,00</b>	<b>114</b>	<b>44</b>	<b>12</b>	<b>12</b>	<b>20</b>		
1	Research Seminar "Automata and Process Models"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
2	Research Seminar "Introduction to cloud technology"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
3	Research Seminar "Introduction to System Programming"	E	Joint System Programming Department with Institute for System Programming of the Russian Academy of Sciences	3,00	114	44	10	14	20A		
4	Research Seminar "Geographic Information Systems"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
5	Research Seminar "Linux software distribution"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
6	Research Seminar "Neuroinformatics"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
7	Research seminar "Neural Network Technologies"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
8	Research Seminar "Basics of Game Development"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
9	Research Seminar "Python: Popular Libraries And Practical Problem Solving"	E	Department of Software Engineering	3,00	114	48	14	14	20A		
10	Research Seminar "Development of Cyber-Physical Systems"	E	Department of Software Engineering	3,00	114	44	10	14	20A		
11	Research Seminar "Software Development Methodologies"	E	базовая кафедра фирмы 1С	3,00	114	44	10	14	20A		
	<b>English</b>					<b>2</b>				<b>2</b>	
	<b>Optional Courses</b>										
1	English Language	O		8,00	304	128	20	28A	40	40A	Foreign language, Credits only to the cumulative rating
	<b>Examinations</b>					<b>2</b>				<b>2</b>	
1	English Language Integrative Exam	C	School of Foreign Languages			2				2A	Foreign language
	<b>General Courses</b>			<b>10,00</b>	<b>580</b>	<b>318</b>	<b>142</b>	<b>74</b>	<b>52</b>	<b>50</b>	
	<b>Optional General Courses</b>			<b>9,00</b>	<b>342</b>	<b>156</b>	<b>88</b>	<b>38</b>	<b>16</b>	<b>14</b>	
1	Russian History	C	School of History	4,00	152	72	34	38A			Online Course

2	Foundations of Russian Statehood	C	School of History	2,00	76	54	54A				
3	Economics	C	Department of Theoretical Economics	3,00	114	30			16	14A	Online Course
<b>Core General Courses</b>				<b>1,00</b>	<b>238</b>	<b>162</b>	<b>54</b>	<b>36</b>	<b>36</b>	<b>36</b>	
1	Safe Living Basics	C	центр поддержки студенческих инициатив	1,00	38	18	18A				Online Course
2	Physical Training	C	Department of Physical Training		200	144	36	36	36	36A	

**Curriculum agreed:**

Academic Supervisor SHILOV V.V. 14.06.2023

Dean ARZHANTSEV I.V. 14.06.2023

Head of Centre for Educational Model Design LEPESHKIN I.A. 19.06.2023

\* Subject type:

Compulsory course

C

Elective course

E

Optional course

O