



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

4 th, 2023/2024 academic year

APPROVED

17.04.2023

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	
	Degree Programme			60,00	2 280	72	26	36	4	6	
	Major			27,00	1 026						
	Core Professional Block (Major)			4,00	152	56	28	28			
	Subject Areas			4,00	152	56	28	28			
	Software Project Management			4,00	152	56	28	28			
1	Software Project Management	C	Department of Software Engineering	4,00	152	56	28	28A			Online Course
	Elective Professional Block (Major)			114,00							
	Electives 4 year			20,00	760	120	36	40	44		
	Computer Science Electives			10,00	380	60	18	20	22		
1	Agile in Enterprise Environment	E	Department of Software Engineering	10,00	380	60	18A	20	22A		
2	Web3 Vulnerability Analysis	E	Department of Software Engineering	10,00	380	60	18	20A	22A		
3	Soft Skills Development	E	Department of Psychology	10,00	380	60	18A	20	22A		
4	Informatization Management	E	Department of Software Engineering	10,00	380	60	18A	20	22A		
5	Systems Reliability Engineering	E	базовая кафедра Тинькофф	10,00	380	96	28	28A	40A		
	Math Electives			10,00	380	60	18	20	22		
1	Operations Research	E	Department of Software Engineering	10,00	380	60	18A	20	22A		
2	Mathematical Methods for Distributed Ledger Systems	E	Department of Software Engineering	10,00	380	60	18A	20	22A		Foreign language
3	Mathematical Modeling and Simulation	E	Department of Software Engineering	10,00	380	60	18A	20	22A		Foreign language
4	Queuing Theory	E	Department of Software Engineering	10,00	380	60	18A	20	22A		

5	Computational Complexity Theory	E	Department of Big Data and Information Retrieval	10,00	380	60	18	20	22A		Foreign language
	Дисциплины при выборе специализации "Системное программирование" на базовой кафедре ИСП РАН			20,00	760		108	120	132		
	Courses for Concentration "Systems Programming" 4 year			20,00	760	120	36	40	44		
1	Mathematical Methods of Text Processing	E	Joint System Programming Department with Institute for System Programming of the Russian Academy of Sciences	10,00	380	60	18A	20	22A		
2	Development of Operating Systems	E	Joint System Programming Department with Institute for System Programming of the Russian Academy of Sciences	10,00	380	60	18A	20	22A		
	Courses for Concentration "Tools for Software Analysis and Development"			20,00	760	120	36	40	44		
	Courses for Concentration "Tools for Software Analysis and Development" 4 year			20,00	760	120	36	40	44		
1	Process Analysis for Software Engineering	E	Department of Software Engineering	10,00	380	60	18A	20	22A		
2	Natural Language Processing for Source Code	E	Department of Software Engineering	10,00	380	60	18A	20	22A		
	Courses for Concentration "Industrial Software Engineering"			20,00	760	120	108	120	132		
	Courses for Concentration "Industrial Software Engineering"			20,00	760	120	72	80	88		
1	Software Systems Engineering	E	базовая кафедра фирмы 1C	10,00	380	60	18A	20	22A		
2	Business Application Quality Management	E	базовая кафедра фирмы 1C	10,00	380	60	18A	20	22A		
	Research seminar			3,00	114	48	140	140	200		
	Research seminar			3,00	114	48	14	14	20		
1	Research Seminar "Swarm Intelligence Algorithms"	E	Department of Software Engineering	3,00	114	48	14	14	20A		
2	Research Seminar "Data Analysis in Finance"	E	Department of Big Data and Information Retrieval	3,00	114	48	14	14	20A		Foreign language
3	Research Seminar "DWH. Enterprise Architecture And Data Modeling"	E	Department of Software Engineering	3,00	114	48	14	14	20A		
4	Research Seminar "Data Engineering"	E	Department of Software Engineering	3,00	114	48	14	14	20A		
5	Research Seminar "Practical Techniques for Improving Code Quality"	E	Department of Software Engineering	3,00	114	48	14	14	20A		
6	Research Seminar "Industrial Software Engineering"	E	базовая кафедра фирмы 1C	3,00	114	48	14	14	20A		
7	Research Seminar "System Programming 2"	E	Joint System Programming Department with Institute for System Programming of the Russian Academy of Sciences	3,00	114	48	14	14	20A		
8	Research Seminar "Computer Vision Technologies"	E	Department of Software Engineering	3,00	114	48	14	14	20A		
	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)			4,00	152	2				2
	Thesis Work			4,00	152	2				2
1	Defence of Graduation Thesis	C		4,00	152	2				2A
	General Courses			8,00	304	60	24	36		
	Optional General Courses			8,00	304	60	24	36		
1	Legal Literacy	C	департамент права цифровых технологий и биоправа	4,00	152	30	10	20A		Online Course
2	Philosophy	C	Школа философии и культурологии	4,00	152	30	14	16A		Online Course, Foreign language
	Internship			20,00	760	8	2		2	4
	Project Internship			20,00	760	6			2	4
1	Team Project in Software Engineering	C	Department of Software Engineering	6,00	228	2			2A	
2	Preparation of Graduation Thesis	C		8,00	304	2				2
3	Graduation Internship	C		6,00	228	2				2A
	Professional Internship					2	2			
1	Work Experience Internship	C				2	2A			

Curriculum agreed:

Academic Supervisor	SHILOV V.V.	10.04.2023
Dean	ARZHANTSEV I.V.	10.04.2023
Head of Centre for Educational Model Design	LEPESHKIN I.A.	10.04.2023

* Subject type:

Compulsory course

C

Elective course

E

Optional course

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