



National Research University Higher School of Economics (HSE)

Basic Curriculum

Field of study 09.04.04 Software Engineering
Educational Programme "System Programming"
Trajectories: "System Programming"

Implementing unit: Faculty of Computer Science, HSE - Moscow

APPROVED

12.02.2025

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Years of Study: 2025/2026 - 2026/2027

Length of Programme: 2 years

Mode of Study: Full Time

Degree: Master's degree / MBA

Block Code	Course	Subject type	Credits	Credits by Years		Planned Educational Programme Development Results
				1	2	
	Degree Programme		120,00	60,00	60,00	
	System Programming (General track)		120,00	60,00	60,00	
	Key Seminars		15,00	6,00	9,00	
1	Mentor's Seminar	C	15,00	6,00	9,00	GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
	Internship		27,00	9,00	18,00	
	Free					
	Preparation of the Graduate Thesis		18,00		18,00	
1	Preparation of Graduation Thesis	C	18,00		18,00	GPC-2.SEN, GPC-3.SEN, GPC-5.SEN, GPC-7.SEN, GPC-8.SEN, PC-1, PC-11, PC-12, PC-15, PC-2, PC-6, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6
	Fixed		9,00	9,00		
1	Term Paper	C	6,00	6,00		GPC-2.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
2	Work Experience Internship	C	3,00	3,00		GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
	Major		60,00	39,00	21,00	
	Compulsory Disciplines 1 Academic Year		39,00	39,00		

1	Software Verification	C	6,00	6,00		GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
2	Compiler Technologies 1	C	6,00	6,00		GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
3	Computer Networks and Telecommunications	C	6,00	6,00		GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
4	Advanced Database Management Systems	C	6,00	6,00		GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
5	Applied System Analysis	C	3,00	3,00		UC-1, UC-2, UC-3, UC-6
6	Operating System Kernel Construction	C	6,00	6,00		GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
7	Artificial Intelligence in Program Testing and Analysis	C	6,00	6,00		GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
Compulsory Disciplines 2 course			18,00		18,00	
1	Parallel Programming	C	6,00		6,00	GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
2	Theoretical Cryptography	C	6,00		6,00	GPC-1.SEN, GPC-2.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
3	Formal Methods in Software Engineering	C	6,00		6,00	GPC-1.SEN, GPC-2.SEN, GPC-3.SEN, GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-1, PC-16, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6
Elective courses 2 year			3,00		3,00	
1	Compiler Technologies 2	E	3,00		3,00	GPC-4.SEN, GPC-5.SEN, GPC-6.SEN, GPC-7.SEN, PC-2, PC-6, PC-9, UC-1, UC-2, UC-3, UC-6

