National Research University Higher School of Economics (HSE)

Curriculum

Field of study 09.04.01 Information Science and Computation Technology

Educational Programme "Computer Systems and Networks"

Trajectories: "Computer Networks", "Computing Systems and Complexes", "Digital Twins of Electronics and Computer Products", "Highload Systems and Code Optimization"

Implementing unit: Tikhonov Moscow Institute of Electronics and Mathematics, HSE - Moscow

1 st, 2024/2025 academic year

APPROVED

15.04.2024

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 2 years
Years of Study: 2024/2025 - 2025/2026
Mode of Study: Full Time
Degree: Master's degree / MBA

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**	**590**	**150**	**124**	**170**	**146**	
	Highload Systems and Code Optimization (Applied track)			**60,00**	**2 280**	**528**	**104**	**108**	**180**	**136**	
	Major			**45,00**	**1 710**	**450**	**94**	**88**	**160**	**108**	
1	Web applications development	C	School of Computer Engineering	3,00	114	26			26A		
2	Distributed Databases and Network Computing	C	School of Computer Engineering	12,00	456	122	32	32A	32	26A	
3	System Programming	C	School of Computer Engineering	6,00	228	44			32	12A	
4	System Analysis and Complex Systems Design	C	School of Computer Engineering	3,00	114	36	36A				
5	Software Engineering	C	School of Computer Engineering	6,00	228	50	26	24A			
6	Advanced C++	C	School of Computer Engineering	9,00	342	112		32A	40	40A	Online Course
7	Programming languages and compilers	C	School of Computer Engineering	6,00	228	60			30	30A	
	Key Seminars			**6,00**	**228**	**76**	**10**	**20**	**20**	**26**	
1	Highload systems and code optimization	C	School of Computer Engineering	3,00	114	40	10	10	10A	10A	
2	Project Seminar	C	School of Computer Engineering	3,00	114	36		10	10A	16A	
	Magolego			**3,00**	**114**						

1	All-university Pool MAGOLEGO Courses	E		3,00	114						
	Internship			**6,00**	**228**	**2**				**2**	
	Project Internship			**6,00**	**228**	**2**				**2**	
1	Project	C		6,00	228	2				2A	
	Computing Systems and Complexes (Applied track)			**60,00**	**2 280**	**592**	**150**	**124**	**170**	**148**	
	Major			**45,00**	**1 710**	**472**	**122**	**94**	**142**	**114**	
1	Data Analysis and AI Methods	C	School of Computer Engineering	3,00	114	28	28A				
2	Computer Simulation	C	School of Computer Engineering	6,00	228	62			36	26A	
3	Distributed Databases and Network Computing	C	School of Computer Engineering	12,00	456	122	32	32A	32	26A	
4	System Analysis and Complex Systems Design	C	School of Computer Engineering	3,00	114	36	36A				
5	Modern Computer Systems	C	School of Computer Engineering	9,00	342	112		38A	38	36A	
6	Optimizing Compilation Technologies	C	School of Computer Engineering	6,00	228	62			36	26A	
7	Software Engineering	C	School of Computer Engineering	6,00	228	50	26	24A			
	Key Seminars			**9,00**	**342**	**118**	**28**	**30**	**28**	**32**	
1	Research Seminar	C	School of Computer Engineering	3,00	114	60	14	16	14	16A	
2	Project Seminar	C	School of Computer Engineering	3,00	114	42	10	10	10	12A	
3	Mentor's Seminar "Computing Systems and Complexes"	C	School of Computer Engineering	3,00	114	16	4	4A	4	4A	
	Internship			**6,00**	**228**	**2**				**2**	
	Project Internship			**6,00**	**228**	**2**				**2**	
1	Project	C		6,00	228	2				2A	
	Computer Networks (Applied track)			**60,00**	**2 280**	**592**	**150**	**124**	**170**	**148**	
	Major			**45,00**	**1 710**	**472**	**122**	**94**	**142**	**114**	
1	Data Analysis and AI Methods	C	School of Computer Engineering	3,00	114	28	28A				
2	Computer Systems Architecture and Technology	C	School of Computer Engineering	6,00	228	62			36	26A	
3	Equipment of Computer Network and Telecommunication Systems	C	School of Computer Engineering	6,00	228	62			36	26A	
4	Distributed Databases and Network Computing	C	School of Computer Engineering	12,00	456	122	32	32A	32	26A	
5	System Analysis and Complex Systems Design	C	School of Computer Engineering	3,00	114	36	36A				
6	Modern Computer Systems	C	School of Computer Engineering	9,00	342	112		38A	38	36A	
7	Software Engineering	C	School of Computer Engineering	6,00	228	50	26	24A			
	Key Seminars			**9,00**	**342**	**118**	**28**	**30**	**28**	**32**	

1	Research Seminar	C	School of Computer Engineering	3,00	114	60	14	16	14	16A	
2	Project Seminar	C	School of Computer Engineering	3,00	114	42	10	10	10	12A	
3	Mentor's Seminar "Computer Networks"	C	School of Computer Engineering	3,00	114	16	4	4A	4	4A	
	Internship			**6,00**	**228**	**2**				**2**	
	Project Internship			**6,00**	**228**	**2**				**2**	
1	Project	C		6,00	228	2				2A	
	Digital Twins of Electronics and Computer Products (Applied track)			**60,00**	**2 280**	**592**	**150**	**124**	**170**	**148**	
	Major			**45,00**	**1 710**	**472**	**122**	**94**	**142**	**114**	
1	Data Analysis and AI Methods	C	School of Computer Engineering	3,00	114	28	28A				
2	Evaluation of the correctness of the ECB application based on computer modeling	C	School of Computer Engineering	6,00	228	62			36	26A	
3	Application of Electronic Layouts and Digital Twins	C	School of Computer Engineering	6,00	228	62			36	26A	
4	Distributed Databases and Network Computing	C	School of Computer Engineering	12,00	456	122	32	32A	32	26A	
5	System Analysis and Complex Systems Design	C	School of Computer Engineering	3,00	114	36	36A				
6	Modern Computer Systems	C	School of Computer Engineering	9,00	342	112		38A	38	36A	
7	Software Engineering	C	School of Computer Engineering	6,00	228	50	26	24A			
	Key Seminars			**9,00**	**342**	**118**	**28**	**30**	**28**	**32**	
1	Research Seminar "Modern Methods of Creating Electronic Layouts and Digital Doubles"	C	School of Computer Engineering	3,00	114	60	14	16A	14	16A	
2	Project Seminar "Standardization in the Field of Design of Electronic and Computer Equipment Products"	C	School of Computer Engineering	3,00	114	42	10	10A	10	12A	
3	Mentor's Seminar «Digital Transformation of Highly Reliable Product Design Processes»	C	School of Computer Engineering	3,00	114	16	4	4A	4	4A	
	Internship			**6,00**	**228**	**2**				**2**	
	Project Internship			**6,00**	**228**	**2**				**2**	
1	Project	C		6,00	228	2				2A	

Curriculum agreed:

Academic Supervisor	VISHNEKOV A.V.	20.03.2024
Dean	KROUK E.A.	26.03.2024
Head of Centre for Educational Model Design	LEPESHKIN I.A.	12.04.2024

* Subject type:

Compulsory course	C
Elective course	E