

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

						Al	location of C	ontact Hour			
Block Code	Course	Subject type	Department	Credits	Total Academic Hours	Contact Hours	1	2	3	4	Additional Information
	Degree Programme			60,00	2 280	590	150	124	170	146	
	Highload Systems and Code Optimiza	60,00	2 280	528	104	108	180	136			
	Major	45,00	1 710	450	94	88	160	108			
1	Web applications development	С	School of Computer Engineering	3,00	114	26			26A		
2	Distributed Databases and Network Computing	С	School of Computer Engineering	12,00	456	122	32	32A	32	26A	
3	System Programming	С	School of Computer Engineering	6,00	228	44			32	12A	
4	System Analysis and Complex Systems Design	С	School of Computer Engineering	3,00	114	36	36A				
5	Software Engineering	С	School of Computer Engineering	6,00	228	50	26	24A			
6	Advanced C++	С	School of Computer Engineering	9,00	342	112		32A	40	40A	Online Course
7	Programming languages and compilers	С	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	С	School of Computer Engineering	3,00	114	40	10	10	10A	10A	
2	Project Seminar	С	School of Computer Engineering	3,00	114	36		10	10A	16A	
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Internship	1	All-university Pool MAGOLEGO Courses	E		3,00	114						
1 Project C 6.00 228 2 2.0 2.0		Internship	6,00	228	2				2			
1		Project Internship	6,00	228	2				2			
Major	1		С		6,00	228	2				2A	
Major		Computing Systems and Complexes (3				592	150	124	170	148	
Data Analysis and Al Methods C School of Computer Engineering C School of Computer Computer School of Computer System Analysis and Complex School of Computer System Analysis and Complex Spatian Computer System School of Computer System School of Computer Solo of Computer Solo of Computer System School of Computer Solo of C												
1			С	School of Computer								
2	1 1	,			,,,,,,							
2		Computer Simulation	С	School of Computer	6,00	228	62			36	26A	
3 Computing Engineering System Analysis and Complex School of Computer Softon S	2	·										
System Analysis and Complex School of Computer 3,00 114 36 36A		Distributed Databases and Network	С	School of Computer	12,00	456	122	32	32A	32	26A	
A Systems Design	3											
Modern Computer Systems C School of Computer Engineering School of Computer Engineering School of Computer School of Comput			С		3,00	114	36	36A				
Engineering	4											
Optimizing Compilation C School of Computer Engineering C School of Computer School of Comp		Modern Computer Systems	С		9,00	342	112		38A	38	36A	
Computer Networks (Applied track) Computer Networks (Applied track) Computer Networks (Applied track) Computer Networks (Applied track) Computer Networks (Computer Networks (5											
Software Engineering			С		6,00	228	62			36	26A	
Engineering	6		•		2.22	222			0.14			
Research Seminar	_	Software Engineering	С		6,00	228	50	26	24A			
Research Seminar	/	W O		Engineering	0.00	0.40	440	00	00	00	20	
Project Seminar C School of Computer 3,00 114 42 10 10 10 12A			0									
Computer Networks (Applied track)	1			Engineering								
Mentor's Seminar "Computing Systems and Complexes" School of Computer Engineering Sometimes of Computer Systems Analysis and Complex Sometimes of Computer Systems Sometimes of Computer Systems Sometimes of Computer Engineering Sometimes of Computer Systems Sometimes of Computer Engineering Sometimes of Computer Systems Sometimes of Computer Engineering Sometimes of Computer Engineering Sometimes of Computer S		Project Seminar	С		3,00	114	42	10	10	10	12A	
Systems and Complexes" Engineering	2											
Internship		Mentor's Seminar "Computing	С		3,00	114	16	4	4A	4	4A	
Project Internship	3			Engineering	2.22							
1		•										
Computer Networks (Applied track)			_									
Major	1	,	С									
Data Analysis and Al Methods C School of Computer Engineering Computer Systems Architecture and C School of Computer Engineering Computer Systems Architecture and C School of Computer Engineering Equipment of Computer Network and Telecommunication Systems Distributed Databases and Network C School of Computer Engineering Distributed Databases and Network C School of Computer Engineering System Analysis and Complex Systems Design Modern Computer Systems C School of Computer Engineering School of Computer Systems C School of Computer Engineering School of Co		1 1 1 1										
Computer Systems Architecture and C School of Computer 6,00 228 62 36 26A									94	142	114	
2 Technology Engineering	1	Data Analysis and Al Methods	С		3,00	114	28	28A				
Equipment of Computer Network and Telecommunication Systems Distributed Databases and Network Computer Engineering Distributed Databases and Network Computer Engineering System Analysis and Complex Systems Design Modern Computer Systems Computer Systems Computer Engineering Computer Systems Computer Engineering Modern Computer Systems Compute			С		6,00	228	62			36	26A	
3 and Telecommunication Systems Engineering Distributed Databases and Network C School of Computer Engineering System Analysis and Complex Systems Design Modern Computer Systems Modern Computer Systems Software Engineering Engineering Engineering 12,00 456 122 32 32A 32 26A 14 36 36A Engineering 3,00 114 36 36A Engineering Modern Computer Systems C School of Computer 9,00 342 112 38A 38 36A Engineering Software Engineering C School of Computer 6,00 228 50 26 24A	2											
Distributed Databases and Network C School of Computer Engineering 12,00 456 122 32 32A 32 26A System Analysis and Complex Systems Design C School of Computer Engineering 14 36 36A Modern Computer Systems C School of Computer Engineering 9,00 342 112 38A 38 36A Software Engineering C School of Computer 6,00 228 50 26 24A			С		6,00	228	62			36	26A	
4 Computing Engineering 3,00 114 36 36A 5 Systems Design Engineering 114 36 36A Modern Computer Systems C School of Computer Engineering 9,00 342 112 38A 38 36A Software Engineering C School of Computer 6,00 228 50 26 24A	3											
5 System Analysis and Complex Systems Design C School of Computer Engineering 3,00 114 36 36A Modern Computer Systems C School of Computer Engineering 9,00 342 112 38A 38 36A Software Engineering C School of Computer 6,00 228 50 26 24A			С		12,00	456	122	32	32A	32	26A	
5 Systems Design Engineering 9,00 342 112 38A 38 36A 6 Software Engineering C School of Computer Engineering 6,00 228 50 26 24A	4											
Modern Computer Systems C School of Computer Engineering 9,00 342 112 38A 38 36A Software Engineering C School of Computer 6,00 228 50 26 24A	5		С		3,00	114	36	36A				
Software Engineering C School of Computer 6,00 228 50 26 24A		Modern Computer Systems	С		9,00	342	112		38A	38	36A	
	6											
	7	Software Engineering	С	School of Computer Engineering	6,00	228	50	26	24A			
Key Seminars 9,00 342 118 28 30 28 32		Key Seminars			9.00	342	118	28	30	28	32	

1	Research Seminar	С	School of Computer Engineering	3,00	114	60	14	16	14	16A	
2	Project Seminar	С	School of Computer Engineering	3,00	114	42	10	10	10	12A	
3	Mentor's Seminar "Computer Networks"	С	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	С		6,00	228	2				2A	
	Digital Twins of Electronics and Comp	outer Pro	oducts (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 Al Methods	С	School of Computer Engineering	3,00	114	28	28A				
2	Evaluation of the correctness of the ECB application based on computer modeling	С	School of Computer Engineering	6,00	228	62			36	26A	
3	Application of Electronic Layouts and Digital Twins	С	School of Computer Engineering	6,00	228	62			36	26A	
4	Distributed Databases and Network Computing	С	School of Computer Engineering	12,00	456	122	32	32A	32	26A	
5	System Analysis and Complex Systems Design	С	School of Computer Engineering	3,00	114	36	36A				
6	Modern Computer Systems	С	School of Computer Engineering	9,00	342	112		38A	38	36A	
7	Software Engineering	С	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"	С	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"	С	School of Computer Engineering	3,00	114	42	10	10A	10	12A	
3	Mentor's Seminar «Digital Transformation of Highly Reliable Product Design Processes»	С	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	С		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
Elective course

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