



National Research University Higher School of Economics (HSE)

Basic Curriculum

Field of study 04.03.01 Chemistry
Educational Programme "Chemistry"

Implementing unit: Faculty of Chemistry, HSE - Moscow

APPROVED
12.05.2022
Vice Rector
ROSHCHIN S.Y.
Signed with EDS

Years of Study: 2022/2023 - 2025/2026

Length of Programme: 4 years

Mode of Study: Full Time

Degree: Bachelor's degree

Block Code	Course	Subject type	Credits	Credits by Years				Planned Educational Programme Development Results
				1	2	3	4	
	Degree Programme		240,00	60,00	60,00	60,00	60,00	
	Major		149,00	44,00	35,00	38,00	32,00	
	Core Professional Block (Major)		101,00	41,00	35,00	25,00		
1	Probability Theory and Mathematical Statistics	C	4,00		4,00			GPC-4, UC-1
2	Organic Chemistry	C	20,00		20,00			GPC-1, GPC-2, PC-5, PC-9
3	Calculus	C	14,00	7,00	7,00			GPC-4, UC-1
4	Linear Algebra and Geometry	C	7,00	7,00				GPC-4, UC-1
5	Physics	C	10,00	6,00	4,00			GPC-4, UC-1
6	Biochemistry (offered in a foreign language)	C	3,00			3,00		GPC-1, PC-5
7	Analytical Chemistry	C	8,00			8,00		GPC-1, PC-7
8	Quantum Chemistry	C	4,00			4,00		GPC-3, PC-3
9	Essentials of Physical Chemistry	C	4,00	4,00				GPC-4, PC-6
10	Physical Chemistry	C	6,00			6,00		GPC-4, PC-6
11	Crystallography and Diffraction Methods	C	4,00			4,00		GPC-1, GPC-5, PC-1
12	Theoretical Inorganic Chemistry and Chemistry of the Elements	C	17,00	17,00				GPC-1, GPC-2, PC-4, PC-8, PC-9
	Elective Professional Block (Major)		48,00	3,00		13,00	32,00	
	Compulsory Courses		18,00	3,00		4,00	11,00	
1	Polymers	C	4,00				4,00	GPC-2, PC-5, PC-8
2	Chemical Technology	C	4,00				4,00	GPC-2, PC-1, PC-2
3	Chemistry of Transition Metals	C	7,00			4,00	3,00	PC-4, PC-5, PC-8
4	Research Seminar	C	3,00	3,00				GPC-6, PC-1, PC-3, UC-6
	Elective Courses		30,00			9,00	21,00	
1	Elective Disciplines	E	27,00			9,00	18,00	PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-8, PC-9

2	Online Courses in English (offered in a foreign language)	E	3,00				3,00	GPC-3, PC-5, PC-6, PC-8
	Internship		35,00	7,00	7,00	4,00	17,00	
	Professional Internship							
	Project Internship		16,00	4,00	4,00	4,00	4,00	
1	Research Project	E	16,00	4,00	4,00	4,00	4,00	GPC-1, GPC-2, PC-9, UC-3
	Research Internship		19,00	3,00	3,00		13,00	
1	Graduation Internship	C	6,00				6,00	GPC-1, GPC-2, GPC-6, PC-2, PC-9
2	Preparation of Graduation Thesis	C	7,00				7,00	GPC-1, GPC-2, GPC-3, PC-1, PC-3, PC-9, UC-6
3	Term Paper in Organic Chemistry	C	3,00		3,00			GPC-1, GPC-2, GPC-6, PC-9
4	Term Paper in Inorganic Chemistry	C	3,00	3,00				GPC-1, GPC-2, GPC-6, PC-9
	General Courses		14,00	2,00	4,00	4,00	4,00	
	Core General Courses		2,00	2,00				
1	Safe Living Basics	C	1,00	1,00				UC-11, UC-3, UC-8
2	Physical Training	C	1,00	1,00				UC-7
	Optional General Courses		12,00		4,00	4,00	4,00	
1	Economics	C	4,00		4,00			UC-2, UC-9
2	Elective General Courses	E	4,00				4,00	UC-5
3	Legal Literacy	C	4,00			4,00		UC-10, UC-2
	Minor		20,00		10,00	10,00		
1	Minor	E	20,00		10,00	10,00		UC-1, UC-2, UC-6
	English		1,00				1,00	
	Examinations		1,00				1,00	
1	Independent English Exam	C						UC-4
2	Project Proposal	C	1,00				1,00	GPC-6, UC-4
3	English Language Integrative Exam (offered in a foreign language)	C						UC-4
	Optional Courses							
1	Academic Writting (offered in a foreign language)	O	2,00				2,00	UC-4, UC-5
2	English (offered in a foreign language)	O	14,00	8,00	6,00			UC-4, UC-5
	Data Culture		15,00	7,00	4,00	4,00		
1	Introduction into Python	C	4,00		4,00			GPC-5, UC-1
2	Independent Programming Test. Intermediate	C						GPC-5, UC-1
3	External Examinations on Digital Skills. Entry-level	C						GPC-5
4	External Examinations on Digital Skills. Intermediate Level	C						GPC-5
5	External Examinations on Digital Skills. Final Level	C						GPC-5
6	Data Analysis in Python	C	3,00			3,00		GPC-5, UC-1
7	Independent Digital Literacy Test	C						GPC-5, UC-1
8	Independent Data Science Test. Intermediate	C	1,00			1,00		GPC-5, UC-1
9	Digital Literacy	C	3,00	3,00				GPC-3, GPC-5
10	Information Technology in Chemistry	C	4,00	4,00				GPC-3, GPC-5
	Final State Certification (FSC)		6,00				6,00	

