



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
30.03.2021
Vice Rector
ROSHCHIN S.Y.
Signed with EDS

Years of Study: 2021/2022 - 2024/2025

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		144,00	44,00	32,00	39,00	29,00	
	Core Professional Block (Major)		94,00	41,00	32,00	21,00		
	Subject Areas		94,00	41,00	32,00	21,00		
	Mathematics		25,00	14,00	11,00			
1	Linear Algebra and Geometry	C	7,00	7,00				GPC-4, UC-1
2	Calculus	C	14,00	7,00	7,00			GPC-4, UC-1
3	Probability Theory and Mathematical Statistics	C	4,00		4,00			GPC-4, UC-1
	Physics		10,00	6,00	4,00			
1	Physics	C	10,00	6,00	4,00			GPC-4, UC-1
	Organic Chemistry		20,00		17,00	3,00		
1	Biochemistry (offered in a foreign language)	C	3,00			3,00		GPC-1, PC-5
2	Organic Chemistry	C	17,00		17,00			GPC-1, GPC-2, PC-5, PC-9
	Analytical Chemistry		6,00			6,00		
1	Analytical Chemistry	C	6,00			6,00		GPC-1, PC-7
	Quantum Chemistry		4,00			4,00		
1	Quantum Chemistry	C	4,00			4,00		GPC-3, PC-3
	Chemistry of Elements		16,00	16,00				
1	Theoretical Inorganic Chemistry	C	8,00	8,00				GPC-1, GPC-2, PC-4, PC-8
2	Chemistry of the Elements	C	8,00	8,00				GPC-1, GPC-2, PC-4, PC-8, PC-9
	Fundamentals of Physical Chemistry		13,00	5,00		8,00		
1	Crystallography and Diffraction Methods	C	3,00			3,00		GPC-1, GPC-5, PC-1
2	Physical Chemistry	C	5,00			5,00		GPC-4, PC-6
3	Essentials of Physical Chemistry	C	5,00	5,00				GPC-4, PC-6
	Elective Professional Block (Major)		50,00	3,00		18,00	29,00	

	Compulsory Courses		17,00	3,00		3,00	11,00	
1	Electrochemistry	C	3,00			3,00		GPC-2, GPC-4, PC-2, PC-3, PC-6, PC-9
2	Introduction to Combinatorics and Graphs (offered in a foreign language)	C	3,00				3,00	GPC-1, PC-1
3	Polymers	C	4,00				4,00	GPC-2, PC-5, PC-8
4	Chemical Technology	C	4,00				4,00	GPC-2, PC-1, PC-2
5	Research seminar	C	3,00	3,00				GPC-6, PC-1, PC-3, UC-6
	Elective Courses		33,00			15,00	18,00	
1	Elective Courses	E	33,00			15,00	18,00	PC-1, PC-2, PC-3, PC-4, PC-5, PC-6, PC-7, PC-8, PC-9
	Internship		37,00	8,00	7,00	3,00	19,00	
	Professional Internship							
	Project Internship		18,00	4,00	4,00	3,00	7,00	
1	Research Project	E	18,00	4,00	4,00	3,00	7,00	GPC-1, GPC-2, PC-9, UC-3
	Research Internship		19,00	4,00	3,00		12,00	
1	Graduation Internship	C	6,00				6,00	GPC-1, GPC-2, GPC-6, PC-2, PC-9
2	Preparation of Graduation Thesis	C	6,00				6,00	GPC-1, GPC-2, GPC-3, PC-1, PC-3, PC-9, UC-6
3	Курсовая работа по неорганической химии	C	4,00	4,00				GPC-1, GPC-2, GPC-6, PC-9
4	Курсовая работа по органической химии	C	3,00		3,00			GPC-1, GPC-2, GPC-6, PC-9
	General Courses		14,00	1,00	4,00	4,00	5,00	
	Core General Courses		2,00	1,00			1,00	
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	Legal Literacy	C	4,00			4,00		UC-10, UC-2
2	Philosophy	C	4,00				4,00	UC-1, UC-5
3	Economics	C	4,00		4,00			UC-2, UC-9
	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 (offered in a foreign language)	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	English	O	14,00	8,00	6,00			UC-4, UC-5
2	Academic Writing	O	2,00				2,00	UC-4, UC-5
	Data Culture		18,00	7,00	7,00	4,00		
1	Independent Data Science Test. Intermediate	C	1,00			1,00		GPC-5, UC-1
2	Data Analysis	C	3,00			3,00		GPC-5, UC-1

