



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 03.03.02 Physics

Educational Programme "Physics"

Specializations: "Quantum Field Theory", "Solid State Physics"

Implementing unit: St. Petersburg School of Mathematics,
Physics and Computer Science, HSE, HSE - Saint Petersburg

3 rd, 2024/2025 academic year

APPROVED

20.05.2024

Vice Rector
ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 4 years

Years of Study: 2022/2023 - 2025/2026

Mode of Study: Full Time

Degree: Bachelor's degree

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	510	118	112	334	458	
Data Culture				1,00	38	4		2		2	
1	External Examinations on Digital Skills. Final Level	C	отдел развития цифровых компетенций			2		2A			
2	Data Science, AI and Generative Models Independent Test. Intermediate	C	отдел развития цифровых компетенций	1,00	38	2				2A	Online Course
Major				44,00	1 672	382	90	78	300	426	
Core Professional Block (Major)				25,00	950	382	90	78	112	102	
1	Introduction to Machine Learning	C	Informatics Department	3,00	114	6				6A	Online Course
2	Quantum Mechanics	C	Department of Physics (at HSE University in St.Petersburg)	8,00	304	124	28	24A	40	32A	
3	Approximate methods of analytical calculations	C	Department of Physics (at HSE University in St.Petersburg)	3,00	114	52	28	24A			
4	Probability Theory	C	Informatics Department	4,00	152	64	34	30A			
5	Condensed Condition Physics	C	Department of Physics (at HSE University in St.Petersburg)	3,00	114	68			36	32A	
6	Electrodynamics	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	68			36	32A	
Elective Professional Block (Major)				19,00	722				188	324	
-				15,00	570				188	324	
Дисциплины специализации "Квантовая теория поля"				16,00	608	200	30	30	108	32	

1	Differential Geometry and Topology	C	Department of Physics (at HSE University in St.Petersburg)	5,00	190	68			36	32A	
2	Statistical Physics	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	60	30A	30A			
3	Group theory	C	Department of Physics (at HSE University in St.Petersburg)	7,00	266	72			72A		
Дисциплины специализации "Физика твёрдого тела"				16,00	608	168	30	30	108		
1	Introduction to Nanotechnology	C	Department of Physics (at HSE University in St.Petersburg)	5,00	190	36			36A		
2	Statistical Physics	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	60	30A	30A			
3	Group theory	C	Department of Physics (at HSE University in St.Petersburg)	7,00	266	72			72A		
Проектный семинар				4,00	152						
1	Project seminar on quantum field theory	E	Department of Physics (at HSE University in St.Petersburg)	4,00	152	14			14A		Foreign language
2	Project seminar on solid state physics	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	14			14A		Foreign language
Minor				10,00	380	120	28	32	32	28	
1	Minor	E		10,00	380	120	28	32A	32	28A	
English						2			2		
Examinations						2			2		
1	Independent English Exam	C	School of Foreign Languages			2			2A		Foreign language
Internship				5,00	190	2				2	
Professional Internship				5,00	190	2				2	
1	Educational Internship	C		5,00	190	2				2A	

Curriculum agreed:

Academic Supervisor	SHENDEROVICH I.E.	08.05.2024
Dean		08.05.2024
Deputy Director	KUZMIN P.V.	08.05.2024
Head of Centre for Educational Model Design	LEPESHKIN I.A.	14.05.2024

* Subject type:

Compulsory course

Elective course

Optional course

C

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