



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, 2022/2023 academic year

APPROVED  
 13.05.2022  
 Vice Rector  
 ROSHCHIN S.Y.  
 Signed with EDS

Length of Programme: 4 years  
 Years of Study: 2020/2021 - 2023/2024  
 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	
	<b>Degree Programme</b>			<b>60,00</b>	<b>2 280</b>	<b>779</b>	<b>156</b>	<b>182</b>	<b>339</b>	<b>318</b>	
	<b>Major</b>			<b>45,00</b>	<b>1 710</b>	<b>652</b>	<b>128</b>	<b>150</b>	<b>302</b>	<b>288</b>	
	<b>Core Professional Block (Major)</b>			<b>24,00</b>	<b>912</b>	<b>418</b>	<b>128</b>	<b>150</b>	<b>76</b>	<b>64</b>	
	<b>Subject Areas</b>			<b>24,00</b>	<b>912</b>	<b>418</b>	<b>128</b>	<b>150</b>	<b>76</b>	<b>64</b>	
	<b>Computational Physics</b>			<b>3,00</b>	<b>114</b>	<b>52</b>	<b>28</b>	<b>24</b>			
1	Approximate Methods of analytical calculations	C	Department of Physics (at HSE University in St.Petersburg)	3,00	114	52	28	24A			
	<b>Mathematics</b>			<b>4,00</b>	<b>152</b>	<b>64</b>	<b>34</b>	<b>30</b>			
1	Probability Theory	C	Informatics Department	4,00	152	64	34	30A			
	<b>Theoretical Physics</b>			<b>17,00</b>	<b>646</b>	<b>302</b>	<b>66</b>	<b>96</b>	<b>76</b>	<b>64</b>	
1	Quantum Mechanics	C	Department of Physics (at HSE University in St.Petersburg)	8,00	304	124	28	24A	40	32A	Online Course
2	Mechanics of liquids and gases	C	Department of Physics (at HSE University in St.Petersburg)	2,00	76	38	38A				
3	Condensed Condition Physics	C	Department of Physics (at HSE University in St.Petersburg)	3,00	114	68			36	32A	Online Course
4	Electrodynamics of Continuos Media	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	72		72A			
	<b>Elective Professional Block (Major)</b>			<b>21,00</b>	<b>798</b>	<b>234</b>			<b>226</b>	<b>224</b>	
	<b>Выбор специализации (1 из 2)</b>			<b>17,00</b>	<b>646</b>	<b>200</b>			<b>208</b>	<b>208</b>	
	<b>Дисциплины специализации "Квантовая теория поля"</b>			<b>17,00</b>	<b>646</b>	<b>200</b>			<b>104</b>	<b>96</b>	

1	Differential Geometry and Topology	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	68			36	32A	
2	Quantum field theory 1	C	Department of Physics (at HSE University in St.Petersburg)	5,00	190	64				64A	Foreign language
3	Group theory	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	68			68A		
<b>Дисциплины специализации "Физика твёрдого тела"</b>				<b>17,00</b>	<b>646</b>	<b>216</b>			<b>104</b>	<b>112</b>	
1	Introduction to Nanotechnology	C	Department of Physics (at HSE University in St.Petersburg)	3,00	114	36			36A		
2	Quantum field theory 1	C	Department of Physics (at HSE University in St.Petersburg)	5,00	190	64				64A	Foreign language
3	Group theory	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	68			68A		
4	Electronics and Circuit Engineering	C	Department of Physics (at HSE University in St.Petersburg)	3,00	114	48				48A	
<b>Проектный семинар</b>				<b>4,00</b>	<b>152</b>	<b>34</b>			<b>18</b>	<b>16</b>	
1	Project seminar on quantum field theory	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	14			8	6A	
2	Project seminar on solid state physics	C	Department of Physics (at HSE University in St.Petersburg)	4,00	152	14			8	6A	
<b>Minor</b>				<b>10,00</b>	<b>380</b>	<b>120</b>	<b>28</b>	<b>32</b>	<b>32</b>	<b>28</b>	
1	Minor	E		10,00	380	120	28	32A	32	28A	
<b>English</b>						<b>3</b>			<b>3</b>		
<b>Examinations</b>						<b>3</b>			<b>3</b>		
1	Independent English Exam	C	School of Foreign Languages			3			3A		Foreign language
<b>Internship</b>				<b>5,00</b>	<b>190</b>	<b>4</b>			<b>2</b>	<b>2</b>	
<b>Professional Internship</b>				<b>5,00</b>	<b>190</b>	<b>4</b>			<b>2</b>	<b>2</b>	
1	Educational Internship	C		5,00	190	4			2	2A	

**Curriculum agreed:**

Academic Supervisor	SHENDEROVICH I.E.	05.05.2022
Dean		05.05.2022
Deputy Director	KUZMIN P.V.	12.05.2022
Head of Centre for Educational Model Design	LEPESHKIN I.A.	12.05.2022

\* Subject type:

Compulsory course

Elective course

Optional course

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