



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 03.04.02 Physics

Educational Programme "Physics"

Trajectories: "Physics and Technology of Nanostructures",  
"Theoretical Physics"

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

1 st, 2023/2024 academic year

APPROVED

12.05.2023

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 2 years

Years of Study: 2023/2024 - 2024/2025

Mode of Study: Full Time

Degree: Master's degree / MBA

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>248</b>	<b>66</b>	<b>64</b>	<b>72</b>	<b>46</b>	
<b>Theoretical Physics (Research track)</b>				<b>60,00</b>	<b>2 280</b>	<b>264</b>	<b>74</b>	<b>70</b>	<b>72</b>	<b>48</b>	
<b>Major</b>				<b>42,00</b>	<b>1 596</b>	<b>252</b>	<b>72</b>	<b>68</b>	<b>70</b>	<b>42</b>	
<b>Major</b>				<b>42,00</b>	<b>1 596</b>	<b>252</b>	<b>72</b>	<b>68</b>	<b>70</b>	<b>42</b>	
1	Integrable Systems 1	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	28	14	14A			
2	Quantum Electrodynamics	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	42	22	20A			
3	Methods of Quantum Field Theory in Condensed Matter Physics	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	32			20	12A	
4	Conformal Field Theory	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	32			20	12A	
5	Modeling of Quantum Systems	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	28	14	14A			
6	Physics of Low-Dimensional Systems	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	48			30	18A	
7	Physical Kinetics	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	42			22	20A	
<b>Key Seminars</b>				<b>6,00</b>	<b>228</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	

1	Mentor's Seminar	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	8	2	2	2	2A
<b>Magolego</b>				<b>9,00</b>	<b>342</b>					
1	All-university Pool MAGOLEGO Courses	E		9,00	342					
<b>Internship</b>				<b>3,00</b>	<b>114</b>	<b>4</b>				<b>4</b>
<b>Project Internship</b>				<b>3,00</b>	<b>114</b>	<b>4</b>				<b>4</b>
1	Project	C		3,00	114	4				4A
<b>Physics and Technology of Nanostructures (Research track)</b>				<b>18,00</b>	<b>684</b>	<b>12</b>	<b>66</b>	<b>64</b>	<b>72</b>	<b>48</b>
<b>Major</b>							<b>64</b>	<b>62</b>	<b>70</b>	<b>42</b>
<b>Major</b>							<b>64</b>	<b>62</b>	<b>70</b>	<b>42</b>
1	Introduction to Nanotechnology	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	28	14	14A		
2	Introduction to Nanophotonics	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	32			20	12A
3	Introduction to Experimental Optics	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	28	14	14A		
4	Modeling of Quantum Systems	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	28	14	14A		
5	Nanoplasmonics	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	32			20	12A
6	Physics of Low-Dimensional Systems	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	48			30	18A
7	Experimental Methods for Studying the Properties of Semiconductor Nanostructures	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	42	22	20A		
<b>Key Seminars</b>				<b>6,00</b>	<b>228</b>	<b>8</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
1	Mentor's Seminar	C	Department of Physics (at HSE University in St.Petersburg)	6,00	228	8	2	2	2	2A
<b>Magolego</b>				<b>9,00</b>	<b>342</b>					
1	All-university Pool MAGOLEGO Courses	E		9,00	342					
<b>Internship</b>				<b>3,00</b>	<b>114</b>	<b>4</b>				<b>4</b>
<b>Project Internship</b>				<b>3,00</b>	<b>114</b>	<b>4</b>				<b>4</b>
1	Project	C		3,00	114	4				4A

**Curriculum agreed:**

Academic Supervisor

ZHURIKHINA V.V.

16.03.2023

Dean

16.03.2023

Deputy Director

KUZMIN P.V.

16.03.2023

Head of Centre for  
Educational Model Design

LEPESHKIN I.A.

04.05.2023

\* Subject type:

Compulsory course

C

Elective course

E