



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 11.04.02 Infocommunication Technologies and Systems

Educational Programme "Internet of Things and Cyber-physical Systems"

Trajectories: "Cyber-physical Systems", "Internet of Things"  
 Implementing unit: Tikhonov Moscow Institute of Electronics and Mathematics, HSE - Moscow  
 2 nd, 2023/2024 academic year

APPROVED

22.03.2023

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Length of Programme: 2 years

Years of Study: 2022/2023 - 2023/2024

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>344</b>	<b>110</b>	<b>124</b>	<b>62</b>	<b>4</b>	
<b>Internet of Things (Applied track)</b>				<b>60,00</b>	<b>2 280</b>	<b>300</b>	<b>110</b>	<b>124</b>	<b>62</b>	<b>4</b>	
<b>Major</b>				<b>21,00</b>	<b>798</b>	<b>220</b>	<b>90</b>	<b>100</b>	<b>30</b>		
1	Machine learning and artificial intelligence	C	School of Electronic Engineering	6,00	228	60	30	30A			
2	Methods and Systems for Processing Big Data	C	School of Electronic Engineering	6,00	228	60		30	30A		
3	Sensor data processing	C	School of Electronic Engineering	3,00	114	30	30A				
4	Building distributed systems and cloud computing	C	School of Electronic Engineering	6,00	228	70	30	40A			
<b>Final State Certification (FSC)</b>				<b>3,00</b>	<b>114</b>	<b>2</b>				<b>2</b>	
1	Final Qualification Paper	C		3,00	114	2				2A	
<b>Key Seminars</b>				<b>6,00</b>	<b>228</b>	<b>74</b>	<b>20</b>	<b>24</b>	<b>30</b>		
1	Internet of Things (mentor workshop)	C	School of Electronic Engineering	3,00	114	24	8	8	8A		
<b>Magolego</b>				<b>3,00</b>	<b>114</b>						
1	All-university Pool MAGOLEGO Courses	E		3,00	114						
<b>Internship</b>				<b>27,00</b>	<b>1 026</b>	<b>4</b>			<b>2</b>	<b>2</b>	
<b>Research Internship</b>				<b>12,00</b>	<b>456</b>	<b>2</b>				<b>2</b>	
1	Graduation Thesis	C		12,00	456	2				2	
<b>Professional Internship</b>				<b>15,00</b>	<b>570</b>	<b>2</b>				<b>2</b>	
1	Work Experience Internship	C		15,00	570	2			2A		
<b>Cyber-physical Systems (Applied track)</b>				<b>57,00</b>	<b>2 166</b>	<b>250</b>	<b>110</b>	<b>114</b>	<b>72</b>	<b>4</b>	

	Major			21,00	798	220	90	90	40		
1	Machine learning and artificial intelligence	C	School of Electronic Engineering	6,00	228	60	30	30A			
2	Construction of robotic systems	C	School of Electronic Engineering	6,00	228	60	30	30A			
3	Programming real-time systems	C	School of Electronic Engineering	6,00	228	70		30	40A		
4	Digital Manufacturing Technologies and Industrial Robotics	C	School of Electronic Engineering	3,00	114	30	30A				
<b>Final State Certification (FSC)</b>				<b>3,00</b>	<b>114</b>	<b>2</b>					<b>2</b>
1	Final Qualification Paper	C		3,00	114	2					2A
<b>Key Seminars</b>				<b>3,00</b>	<b>114</b>	<b>24</b>	<b>20</b>	<b>24</b>	<b>30</b>		
1	Cyber-Physical Systems (mentor workshop)	C	School of Electronic Engineering	3,00	114	24	8	8	8A		
<b>Magolego</b>				<b>3,00</b>	<b>114</b>						
1	All-university Pool MAGOLEGO Courses	E		3,00	114						
<b>Internship</b>				<b>27,00</b>	<b>1 026</b>	<b>4</b>				<b>2</b>	<b>2</b>
<b>Research Internship</b>				<b>12,00</b>	<b>456</b>	<b>2</b>					<b>2</b>
1	Graduation Thesis	C		12,00	456	2					2
<b>Professional Internship</b>				<b>15,00</b>	<b>570</b>	<b>2</b>				<b>2</b>	
1	Work Experience Internship	C		15,00	570	2				2A	
<b>General Components</b>				<b>3,00</b>	<b>114</b>	<b>50</b>	<b>12</b>	<b>16</b>	<b>22</b>		
<b>Key Seminars</b>				<b>3,00</b>	<b>114</b>	<b>50</b>	<b>12</b>	<b>16</b>	<b>22</b>		
1	Project Seminar	C	School of Electronic Engineering	3,00	114	50	12	16	22A		

**Curriculum agreed:**

Academic Supervisor	IVANOV I.A.	02.03.2023
Dean	KROUK E.A.	03.03.2023
Head of Centre for Educational Model Design	LEPESHKIN I.A.	20.03.2023

\* Subject type:

Compulsory course

C

Elective course

E