



National Research University Higher School of Economics (HSE)

Curriculum

Field of study 01.04.02 Applied Mathematics and Informatics

Educational Programme "Math of Machine Learning"

Trajectories: "Math of Machine Learning"

Implementing unit: Faculty of Computer Science, HSE - Moscow

1 st, 2023/2024 academic year

APPROVED

23.05.2023

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>590</b>	<b>66</b>	<b>148</b>	<b>208</b>	<b>168</b>	
<b>Math of Machine Learning (General track)</b>				<b>60,00</b>	<b>2 280</b>	<b>590</b>	<b>66</b>	<b>148</b>	<b>208</b>	<b>168</b>	
<b>Major</b>				<b>48,00</b>	<b>1 824</b>	<b>556</b>	<b>56</b>	<b>140</b>	<b>200</b>	<b>160</b>	
<b>Basic part. 1 year</b>				<b>27,00</b>	<b>1 026</b>	<b>324</b>	<b>28</b>	<b>56</b>	<b>160</b>	<b>80</b>	
1	High Dimensional Probability and Statistics	C	Department of Big Data and Information Retrieval	6,00	228	80			40	40A	Foreign language
2	Computational Linear Algebra	C	Skolkovo Institute of Science and Technology	6,00	228	80			40	40A	Foreign language
3	Additional Topics in Probability Theory	C	Department of Big Data and Information Retrieval	3,00	114	28	28A				Foreign language
4	Markov Chains	C	Department of Big Data and Information Retrieval	6,00	228	68		28	40A		Foreign language
5	Machine Learning	C	Skolkovo Institute of Science and Technology	6,00	228	68		28	40A		Foreign language
<b>Elective Courses. 1 year</b>				<b>21,00</b>	<b>798</b>	<b>232</b>	<b>28</b>	<b>84</b>	<b>40</b>	<b>80</b>	
1	Introduction to Data Analysis	E	Skolkovo Institute of Science and Technology	3,00	114	28	28A				Foreign language
2	Introduction to Computer Vision	E	Skolkovo Institute of Science and Technology	3,00	114	28		28A			Foreign language
3	Introduction to Natural Language Processing	E	Skolkovo Institute of Science and Technology	3,00	114	28		28A			Foreign language
4	Convex Optimization and Applications	E	Skolkovo Institute of Science and Technology	3,00	114	28		28A			Foreign language
5	Computational Imaging	E	Skolkovo Institute of Science and Technology	3,00	114	28		28A			Foreign language
6	Deep Learning	E	Skolkovo Institute of Science and Technology	6,00	228	68		28	40A		Foreign language

7	Theoretical Methods of Deep Learning	E	Skolkovo Institute of Science and Technology	3,00	114	28		28A			Foreign language
<b>Key Seminars</b>				<b>6,00</b>	<b>228</b>	<b>32</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	
1	Mentor's Seminar "Math of Machine Learning "	C	Department of Big Data and Information Retrieval	6,00	228	32	8	8	8	8A	Foreign language
<b>Internship</b>				<b>6,00</b>	<b>228</b>	<b>2</b>	<b>2</b>				
<b>Project Internship</b>				<b>6,00</b>	<b>228</b>	<b>2</b>	<b>2</b>				
1	Innovation Workshop	C		6,00	228	2	2A				Foreign language

**Curriculum agreed:**

Academic Supervisor NAUMOV A.A. 05.05.2023

Dean ARZHANTSEV I.V. 05.05.2023

Head of Centre for Educational Model Design LEPESHKIN I.A. 23.05.2023

\* Subject type:

Compulsory course

C

Elective course

E