



National Research University Higher School of Economics (HSE)

Basic Curriculum

Field of study 01.04.02 Applied Mathematics and Informatics

Educational Programme "Data Mining"

Trajectories: "Data Mining"

Implementing unit: Faculty of Informatics, Mathematics and Computer Sciences, HSE - Nizhny Novgorod

Years of Study: 2023/2024 - 2024/2025

Length of Programme: 2 years

Mode of Study: Full Time

Degree: Master's degree / MBA

APPROVED

12.05.2023

Vice Rector

ROSHCHIN S.Y.

Signed with EDS

Block Code	Course	Subject type	Credits	Credits by Years		Planned Educational Programme Development Results
				1	2	
	Degree Programme		120,00	60,00	60,00	
	Data Mining (Applied track)		120,00	60,00	60,00	
	Key Seminars		19,00	7,00	12,00	
1	Project Seminar	C	3,00		3,00	GPC-4.AMI, PC-1, PC-2, PC-3, UC-4, UC-5, UC-6
2	Mentor's Seminar	C	4,00	1,00	3,00	PC-1, PC-2, UC-1, UC-2, UC-3, UC-4, UC-5
3	Research Seminar "Data Mining Tools"	C	3,00	3,00		PC-1, PC-3, UC-1, UC-3, UC-4, UC-5, UC-6
4	Research Seminar "Methods of Data Mining"	C	9,00	3,00	6,00	PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4, UC-5
	Internship		26,00	2,00	24,00	
	Project Internship		6,00		6,00	
1	Project	C	6,00		6,00	GPC-4.AMI, PC-1, PC-2, PC-3, UC-5, UC-6
	Professional Internship		6,00		6,00	
1	Research Internship	C	6,00		6,00	GPC-4.AMI, PC-1, PC-2, PC-3, UC-4, UC-5, UC-6
	Research Internship		14,00	2,00	12,00	
1	Preparation of the final qualifying work	C	12,00		12,00	GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-2, PC-3, UC-2, UC-4, UC-6

2	Term Paper	C	2,00	2,00		GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-3, UC-4, UC-5, UC-6
	Major		60,00	42,00	18,00	
1	Modern Methods of Data Analysis	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3
2	Discrete Models and Algorithms Complexity	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
3	Machine Learning	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
4	Discrete optimization and operations research (offered in a foreign language)	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
5	Computational Linguistics	C	6,00		6,00	GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
6	Network Structure Analysis	C	3,00		3,00	GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
7	Optimization: Advanced Level	C	6,00		6,00	GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
8	Technologies of work with big data	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
9	How to Win a Data Science Competition: Learn from Top Kagglers (offered in a foreign language)	C	3,00		3,00	GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4
10	Stochastic Models	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-3, UC-1, UC-2, UC-3, UC-4
11	Modern Methods of Decision Making	C	6,00	6,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-3, UC-1, UC-2, UC-3, UC-4
	Magolego		9,00	9,00		
1	All-university Pool MAGOLEGO Courses	E	9,00	9,00		GPC-1.AMI, GPC-2.AMI, GPC-3.AMI, GPC-4.AMI, PC-1, PC-2, PC-3, UC-1, UC-2, UC-3, UC-4, UC-5, UC-6
	Final State Certification (FSC)		6,00		6,00	
1	Final Qualification Paper	C	6,00		6,00	PC-3

**Curriculum agreed:**

Academic Supervisor	BATSYN M.V.	17.04.2023
Dean	ASEEVA N.V.	24.04.2023
Deputy Director	FOMENKOV D.A.	25.04.2023
Head of Centre for Educational Model Design	LEPESHKIN I.A.	07.05.2023

\* Subject type:

Compulsory course      C

Elective course         E