

Документ подписан простой электронной подписью  
Информация о владельце:  
ФИО: Ливанов Дмитрий Викторович  
Должность: Ректор  
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Ministry of Science and Higher Education of the Russian Federation  
The Federal State Autonomous Educational Institution of Higher Education  
“Moscow Institute of Physics and Technology (National Research University)”

### ACADEMIC PLAN

Qualification Master

Year of enrollment 2024

Statutory duration of a study course 2 years

APPROVED

Vice Rector for Academic Affairs

**Domain of study: 01.04.02 - Applied Mathematics and Informatics**  
**Orientation (specialty): Advanced Methods of Modern**  
**Combinatorics/Продвинутые методы современной комбинаторики**  
**Phystech School of Applied Mathematics and Informatics**  
**Chair of Discrete Mathematics**

AGREED

Head of the Phystech School of Applied Mathematics and Informatics

L.S.

A. A. Voronov

A. M. Raygorodskiy

**Specialty: Advanced Combinatorics/Продвинутая комбинаторика**

№ in order	Name of disciplines, practices, State Final Examination	Form of final control by semesters				Hours								Coursework and test papers	hours in week				TOTAL HOURS	Credit points		
		Examinations		Graded test ("-" - simple)	State Examination	Laboratory classes	of them					Hours for preparation and examinations	Distribution by courses and semesters				Total	Basic		Elective		
		1	2				3	4	Total classroom sessions	Lectures	Laboratory classes		Practical lessons, seminars, exercises, etc.		Practice	Independent study					1 course	
				1 sem. 15 weeks	2 sem. 15 weeks	3 sem. 15 weeks						4 sem. 15 weeks										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
M.1	<b>Courses (Modules)/Дисциплины (модули)</b>					1 920	1 065	450		615		855	330	10					2 250	50	9	41
M.1.1	Foreign Languages/Иностранные языки					180	120			120		60		4					180	4	4	
					-1	90	60			60		30		2		4			90	2	2	
					2	90	60			60		30		2			4		90	2	2	
	<b>Humanitarian and Social Cycle/Гуманитарный и социальный цикл</b>					165	60	60				105	60	4					225	5	5	
M.1.2	(N)ever the Same Phystech: History and Culture of MIPT from Ancient Times to the Present Day/(He) тот Физтех: история и культура МФТИ с незапамятных времен до наших дней	1				60	30	30				30	30	2	2				90	2	2	
M.1.3	Everyday Economic Philosophy: A Simple View on (Un)Complicated Issues/Экономическая философия на каждый день: просто о (не)сложном		2			105	30	30				75	30	2			2		135	3	3	
	<b>Core science/Профильные дисциплины</b>					1 530	870	390		480		660	270	2					1 800	40		40
M.1.B.1	Discrete Structures/Дискретные структуры	1				105	60	30		30		45	30		2	2			135	3		3
M.1.B.2	Theory of Probability/Теория вероятностей				1	90	60	30		30		30		2	2	2			90	2		2
M.1.B.3	Linear Algebra/Линейная алгебра				1	90	60	30		30		30		2	2				90	2		2
M.1.B.4	Introduction to Discrete Geometry/Введение в дискретную геометрию					195	120	60		60		75	30						225	5		5
					1	90	60	30		30		30		2	2				90	2		2
		2				105	60	30		30		45	30			2	2		135	3		3
M.1.B.5	Extremal Combinatorics/Экстремальная комбинаторика	2				105	45	15		30		60	30	2		1	2		135	3		3
M.1.B.6	Random Graphs. Part 1/Случайные графы. Часть 1				2	135	90	45		45		45				3	3		135	3		3
M.1.B.7	Random Graphs. Part 2/Случайные графы. Часть 2			3		150	75	45		30		75	30				3	2	180	4		4
M.1.B.8	Advanced Graph Theory/Современная теория графов	2				105	60	30		30		45	30			2	2		135	3		3
M.1.B.9	Matrix Algebra Methods and Applications to Computer Science and Engineering/Методы матричной алгебры и приложения к информатике и инженерии		2			105	60	15		45		45	30			1	3		135	3		3
M.1.B.10	Game Theory/Теория игр			3		150	75	30		45		75	30				2		180	4		4
M.1.B.11	Additive Combinatorics/Аддитивная комбинаторика			3		105	60	15		45		45	30			1	3		135	3		3
M.1.B.12	Complex Networks/Сложные сети				3	90	45	15		30		45				1	2		90	2		2
M.1.B.13	Applied Discrete Optimization/Прикладная дискретная оптимизация			3		105	60	30		30		45	30				2		135	3		3

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		Examinations				Graded test ("-" - simple)				State Examination	Laboratory classes	of them						Hours for preparation and examinations	Coursework and test papers	Distribution by courses and semesters								TOTAL HOURS	Total	Basic	Elective	
		1		2		3		4				Laboratory classes	Total classroom sessions	Lectons	Practical lessons, seminars, exercises, etc.	Practice	Independent study			1 course				2 course								
		1	2	3	4	1	2	3	4	lect.	lab.							sem	lect.	lab.	sem	lect.	lab.	sem	lect.	lab.	sem					
1	2									5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22					
M.1.B.14	Scientific Workshop: Modern Topics in Applied Mathematics and Computer Science/Научный семинар: Современные проблемы прикладной математики и информатики										45	15			15		30				1				45	1		1				
M.2	Practice/Практика										2 805					2 805		30							2 835	63	51	12				
M.2.1	Educational Practice/Учебная практика										540					540									540	12		12				
M.2.1.B.1	Introductory Practical Training/Ознакомительная практика										540					540									540	12		12				
M.2.2	Industrial Practice/Производственная практика										2 265					2 265		30							2 295	51	51					
M.2.2.1	Personal Research Project/Научно-исследовательская работа										2 265					2 265		30							2 295	51	51					
											585					585									585	13	13					
				3							645					645		30							675	15	15					
											1 035					1 035									1 035	23	23					
M.3	State Final Certification/Государственная итоговая аттестация										285						285	30							315	7	7					
M.3.1	Performance of and Defence of Graduation Thesis/Выполнение и защита выпускной квалификационной работы									4	285						285	30							315	7	7					
TOTAL:		Number of examinations and pass/fail tests				Obl.	Distribution of hours by type of lesson												Distribution of classroom hours per week by semester				Total hours	Total number of credits								
	Examinations				Pass/Fail tests																											
	Fixed (without State Final Examination)																															
	Extracurriculars																															
State Final Examination				1																												
																			Distribution of hours of contact work by years and semesters				Total hours									
																			856		404		1 260									
																			383	473	370	34										
																			Distribution of credits by years and semesters													
																			59		61											
																			26	33	31	30										

Acting Head of Academic Management  
Office

T. F. Artemenko