

Документ подписан простой электронной подписью
Информация о владельце:
ФИО: Ливанов Дмитрий Викторович
Должность: Ректор
Дата подписания: 13.07.2025 14:21:26
Уникальный идентификатор:
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APPROVED

Визиректор по академическим
А. А. Voronov

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

Domain of study: 01.03.02 - Applied Mathematics and Informatics
Orientation (specialty): Computer Science/Информатика
Phystech School of Applied Mathematics and Informatics

Qualification Bachelor

Year of enrollment 2025

Statutory duration of a study course 4 years

AGREED

Head of the Phystech School of Applied Mathematics and Informatics
A. M. Raygorodski

№ 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	Total for education	of them							Hours for preparation and examinations	Distribution by courses and semesters																Total	Basic	Elective		
																Total classroom sessions	Lectons	Laboratory classes	Practical lessons, seminars, exercises, etc.	Practice	Independent study			1 course				2 course				3 course				4 course								
		1 sem. 15 weeks	2 sem. 15 weeks	3 sem. 15 weeks	4 sem. 15 weeks	5 sem. 15 weeks	6 sem. 15 weeks	7 sem. 15 weeks	8 sem. 15 weeks																																			
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	5	6	7	8		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		25	26			
Б.1	Courses (Modules)/Дисциплины (модули)																8 430	3 735	1 380	540	1 815			4 695	540	57										8 970	192	115	77					
Б.1.1	History of Russia: History and Philosophy of Science and Technology/История России: История и философия науки и технологий																180	60	60					120	6										180	4	4							
																	90	30	30					60	3										90	2	2							
																	90	30	30					60	3										90	2	2							
Б.1.2	Foreign Languages/Иностранные языки																735	480			480			255	30	16										765	17	17						
																	90	60			60			30	2			4								90	2	2						
																	90	60			60			30	2											90	2	2						
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																	90	60			60			30	2											90	2	2						

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																	Total for education	of them						Hours for preparation and examinations	Distribution by courses and semesters																TOTAL HOURS	Total	Basic	Elective																							
		Examinations								Graded test ("." - simple)								Total classroom sessions	Lectons	Laboratory classes	Practical lessons, seminars, exercises, etc.	Practice	Independent study		1 course				2 course				3 course				4 course																														
																									1 sem. 15 weeks			2 sem. 15 weeks		3 sem. 15 weeks		4 sem. 15 weeks		5 sem. 15 weeks		6 sem. 15 weeks		7 sem. 15 weeks		8 sem. 15 weeks																											
																									1	2		3	4	5	6	7	8	1	2	3	4	5	6	7					8	6	7	8	9	10	11	12	13	14	lec	lat	se	lec	lat	se	lec	lat	se	lec	lat	se	lec
1	2															3															4															5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Б.1.9	Health Concepts & Strategies/Физическая культура Applied Physical Education (Optional Sports)/Прикладная физическая культура (виды спорта по выбору)															-1															90	60			60		30						4										90	2	2												
Б.1.10	Life Safety/Безопасность жизнедеятельности															-2 -3 -4 -5 -6															330	300			300		30							4		4		4						330													
Б.1.11	Algebra/Алгебра															1															45	30	30					15				2	2										45	1	1												
Б.1.12	Geometry/Геометрия																														450	180	90		90		270	90			3	2	2										540	12	12												
Б.1.13	Analytic Geometry/Аналитическая геометрия																														150	60	30		30		90	30			3			2	2								180	4	4												
Б.1.14	Linear Algebra/Линейная алгебра																														150	60	30		30		90	30															180	4	4												
	Theory of Probability and Mathematical Statistics/Теория вероятностей и математическая статистика																														345	180	90		90		165	60															405	9	9												
Б.1.15	Probability Theory/Теория вероятностей																														210	120	60		60		90	60															270	6	6												
																															105	60	30		30		45	30															135	3	3												
																															105	60	30		30		45	30															135	3	3												
Б.1.16	Statistics/Статистика																														135	60	30		30		75																135	3	3												
	Discrete Mathematics/Дискретная математика																														285	120	60		60		165	30			2												315	7	7												
Б.1.17	Discrete Mathematics/Дискретная математика																														150	60	30		30		90	30			2			2	2								180	4	4												
Б.1.18	Computability and Complexity/Вычислимость и вычислительная сложность																														135	60	30		30		75															135	3	3													
	Computational Mathematics/Вычислительная математика																														285	120	60		60		165	30			2												315	7	7												
Б.1.19	Introduction to Optimization/Введение в Convex Optimization/Выпуклая оптимизация																														135	60	30		30		75				2				2	2							135	3	3												
Б.1.20	Algorithms & Data Structures & Programming Languages/Алгоритмы и структуры данных и языки программирования																														150	60	30		30		90	30															180	4	4												
	Foundations of Programming I/Основы программирования I																														540	180	90	90			360																540	12	12												
Б.1.21	Foundations of Programming II/Основы программирования II															1															180	60	30	30			120					2	2										180	4	4												
Б.1.22	Data Structures and Algorithms I/Структуры данных и алгоритмы I															2															180	60	30	30			120						2	2									180	4	4												
Б.1.23	Computer Architecture and Operating Systems/Архитектура компьютеров и операционные системы															2															180	60	30	30			120							2	2								180	4	4												
	Operating Systems I/Операционные системы I																														360	120	60	60			240																360	8	8												
Б.1.24	Operating Systems II/Операционные системы II															3															180	60	30	30			120							2	2								180	4	4												
Б.1.25	Department Courses/Факультетские дисциплины															4															180	60	30	30			120								2	2							180	4	4												
	Fundamentals of Financial and Economic Analysis and Planning/Основы финансово-экономического анализа и планирования																														2 730	1 005	405	330	270		1 725	60			10											2 790	62	4	58												
Б.1.B.2																-8															45	15	15				30																1														

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													Total for education	of them							Hours for preparation and examinations	Distribution by courses and semesters																TOTAL HOURS	Total	Basic	Elective					
		Examinations								Graded test ("-" - simple)				State Examination	Total classroom sessions	Lectiоns	Laboratory classes	Practical lessons, seminars, exercises, etc.	Practice	Independent study		1 course				2 course				3 course				4 course												
																						1 sem. 15 weeks		2 sem. 15 weeks	3 sem. 15 weeks	4 sem. 15 weeks	5 sem. 15 weeks	6 sem. 15 weeks	7 sem. 15 weeks	8 sem. 15 weeks	1 sem. 15 weeks	2 sem. 15 weeks	3 sem. 15 weeks	4 sem. 15 weeks	5 sem. 15 weeks	6 sem. 15 weeks	7 sem. 15 weeks					8 sem. 15 weeks				
																						1		2	3	4	5	6	7	8	1	2	3	4	5	6	7					8	lec	lat	se	lec
1	3											4								5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26					
Б.1.B.3	Mathematical Thinking/Математическое мышление											1						135	60	30		30		75		2	2	2											135	3		3				
Б.1.B.4	Basics of Mathematical logic I/Основы математической логики I	2																150	60	30		30		90	30	2			2	2										180	4		4			
Б.1.B.5	Data Structures and Algorithms II/Структуры данных и алгоритмы II											3						180	60	30	30			120						2	2										180	4		4		
Б.1.B.6	Data Structures and Algorithms III/Структуры данных и алгоритмы III												4					180	60	30	30			120							2	2									180	4		4		
	Elective Set of Courses 1/Блок дисциплин по выбору 1																	135	60			60		75																135	3		3			
Б.1.B.7	Constraint Programming/Программирование в ограничениях												4					135	60			60		75									4							135	3		3			
Б.1.B.8	Matlab/Matlab												4					135	60					75																135	3		3			
Б.1.B.9	Combinatorics and Graphs/Комбинаторика и графы											3						135	60	30		30		75							2	2									135	3		3		
Б.1.B.10	Advanced Graph Theory/Продвинутый курс по теории графов												4					135	60	30		30		75									2	2							135	3		3		
Б.1.B.11	Python/Язык программирования Python											3						135	30		30		105									2									135	3		3		
Б.1.26	Databases/Базы данных												4					180	60	30	30		120										2	2							180	4	4			
Б.1.B.12	Algebra and Number Theory/Алгебра и теория чисел											3						135	60	30		30		75		2					2	2									135	3		3		
Б.1.B.13	Elementary Number Theory and Number System/Элементарная теория чисел и системы											1						135	60	30		30		75		2	2	2													135	3		3		
Б.1.B.14	Java/Язык программирования												5					180	60	30	30		120										2	2							180	4		4		
Б.1.B.15	Workshop on Software Development/Практикум по разработке программ													5				360	120		120		240																	360	8		8			
													6					180	60		60		120												4					180	4		4			
																		180	60		60		120													4					180	4		4		
Б.1.B.16	Parallel and Disrtibuted Computing I/Параллельные и распределённые вычисления I												5					180	60	30	30		120								2	2									180	4		4		
Б.1.B.17	Parallel and Distributed Computing II/Параллельные и распределённые вычисления II					6												195	60	30	30		135	30																	225	5		5		
Б.1.B.18	Fundamentals of Topology/Основы топологии													7				135	60	30		30		75		2									2	2					135	3		3		
	Core science/Профильные дисциплины																	645	240	120	60	60		405	30	1															675	15		15		
Б.1.B.19	Machine Learning/Машинное обучение																	375	120	60	60		255	30																	405	9		9		
													7					180	60	30	30		120													2	2					180	4		4	
							8											195	60	30	30		135	30															2	2			225	5		5
Б.1.B.20	Information Theory/Теория информации																	135	60	30		30		75		1																135	3		3	
Б.1.B.21	Web-graphs/Веб-графы																	135	60	30		30		75																		135	3		3	
Б.2	Practice/Практика																	1 755						1 755																		1 755	39	31	8	
	Industrial Practice/Производственная практика																	1 395							1 395																	1 395	31	31		
Б.2.1																		1 395							1 395																	1 395	31	31		
Б.2.1.1	Personal Research Project/Научно-исследовательская работа																	1 395							1 395																	1 395	31	31		
													7					810						810																		810	18	18		
														8				585						585																		585	13	13		
Б.2.2	Educational Practice/Учебная практика																	360						360																		360	8		8	

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		Examinations 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8															State Examination	Total for education	of them							Hours for preparation and examinations		Distribution by courses and semesters																TOTAL HOURS	Total	Basic	Elective	
																			Total classroom sessions	Lectons	Laboratory classes	Practical lessons, seminars, exercises, etc.	Practice	Independent study	1 course				2 course				3 course				4 course											
																									1 sem. 15 weeks			2 sem. 15 weeks	3 sem. 15 weeks	4 sem. 15 weeks	5 sem. 15 weeks	6 sem. 15 weeks	7 sem. 15 weeks	8 sem. 15 weeks														
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20	21	22	23	24	25	26								
Б.2.2.Б.1	Research Practice/Научно-исследовательская практика																360																		360	8	8											
																	180																		180	4	4											
																	180																		180	4	4											
Б.3	State Final Certification/Государственная итоговая аттестация																315																		405	9	9											
Б.3.1	Preparation for and Taking State Examination in Mathematics/Подготовка к сдаче и сдача государственного экзамена по математике																60																		90	2	2											
Б.3.2	Preparation for and Taking State Examination in Informatics and Discrete Mathematics/Подготовка к сдаче и сдача государственного экзамена по информатике и дискретной математике																60																		90	2	2											
Б.3.3	Performance of and Defence of Graduation Thesis/Выполнение и защита выпускной квалификационной работы																195																		225	5	5											
TOTAL:		Number of examinations and pass/fail tests															Obl. ECs.	Distribution of hours by type of lesson										57	Distribution of classroom hours per week by semester																Total hours	Total number of credits		
	Examinations															Pass/Fail tests																																
	Fixed (without State Final Examination)															Physical education																																
	Extracurriculars																																															
	State Final Examination																																															
																											Distribution of hours of contact work by years and semesters																Total hours					
		1 108								1 251								1 154								619								4 132														
		521	587	609	642	587	567	268	351																																							
		Distribution of credits by years and semesters																																														
		52				59				63				66																																		
		24	28	29	30	32	31	31	35																																							

Head of Academic Management Office I. R. Garayshina