



WORKING CURRICULUM
 Educational program for 2021-2022 academic year admission
 Educational programs 6B06101, 6B04101, 6B04102 - "Mathematical Economics and Data Analysis"
 Group of Educational Programs B057 - "Information Technologies", B044 - "Management", B046 - "Finance, economics, banking and insurance"
 Full-time study Study duration: 4 years Academic degree: bachelor of technique and technical sciences

Year of study	Code	Name of course	Component	Academic credits	Total hours	classroom volume lec/lab/pr	SW in hours	Code	pre-requisites
1 semester (fall 2021)									
1	NSE174	Business English 1	G	5	150	0/0/3	105	S4	Diagnost. Test
	LNG104	Kazakh (Russian) language	G	5	150	0/0/3	105	S1	Diagnost. Test
	NSE122	Mathematics for economists 1	B	5	150	2/0/2	90	S2	
	NSE117	Introduction to Statistics 1	B	5	150	2/0/2	90	P1-3	
	NSE114	English 1 - Intensive course	B	5	150	0/0/3	105		
	HUM128	Political Science	G	2	60	1/0/0	45	S6	
	HUM129	Cultural studies	G	2	60	1/0/0	45	S6	
	KFK101	Physical education I	G	2	60	0/0/2	30		
Total:				31		21			
2 semester (spring 2022)									
1	NSE175	Business English 2	G	5	150	0/0/3	105	S4	
	LNG104	Kazakh (Russian) language	G	5	150	0/0/3	105	S1	
	HUM 100	Contemporary History of Kazakhstan (State exam)	G	5	150	1/0/2	105	S6	
	NSE118	Mathematics for economists 2	B	5	150	2/0/2	90	S2	
	NSE119	Introduction to Statistics 2	B	5	150	2/0/2	90	P1-3	
	NSE115	English 2 - Intensive course	B	5	150	0/0/3	105		
	KFK102	Physical education II	G	2	60	0/0/2	30		
	Total:				32		23		
3 semester (fall 2022)									
2	HUM 132	Philosophy	G	5	150	1/0/2	105	S6	
	HUM122	Psychology	G	2	60	1/0/0	45	S6	
	MNG487	Fundamentals of entrepreneurship, leadership and anti-corruption culture	G	3	90	1/0/1	60		
	NSE120	Statistics 1	B	5	150	2/0/1	105	P1-3	NSE112
	NSE123	Calculus 1	B	5	150	2/0/2	90	P1-3	NSE109
	NSE124	Algebra 1	B	5	150	2/0/1	105	P1-3	NSE109
	NSE125	Introduction to economics: Microeconomics	B	5	150	2/0/2	90	P1-3	
	KFK103	Physical education III	G	2	60	0/0/2	30		
Total:				32		21			
4 semester (spring 2023)									
2	CSE677	Information and Communication Technologies (eng)	G	5	150	2/1/0	105		
	HUM 127	Sociology	G	2	60	1/0/0	45	S6	
	NSE121	Academic writing	B	5	150	0/0/3	105		
	NSE126	Statistics 2	B	5	150	2/0/1	105	P1-3	NSE105
	NSE127	Calculus 2	B	5	150	2/0/2	90	P1-3	NSE109
	NSE128	Algebra 2	B	5	150	2/0/1	105	P1-3	NSE109
	NSE129	Introduction to economics: Macroeconomics	B	5	150	2/0/2	90	P1-3	
	KFK104	Physical education IV	G	2	60	0/0/2	30		
Total:				34		22			
5 semester (fall 2023)									
3	CHE451	Life safety	G	2	60	1/0/0	45		
	NSE130	Microeconomics	B	5	150	2/0/1	105		NSE104, NSE132
	NSE135	Econometrics 1	B	5	150	2/0/1	105		NSE104, NSE132
	NSE136	Further Calculus	B	5	150	2/0/1	105		NSE133
	NSE137	Further linear algebra 1	S	5	120	2/0/1	60		NSE134
	NSE138	Communication skills	B	5	150	0/0/3	105		
	CSE678	Algorithms and data structures	B	5	150	1/1/1	105		
	Total:				32		19		
6 semester (spring 2024)									
3	CHE 452	Ecology and sustainable development	G	2	60	1/0/0	45		
	NSE139	Macroeconomics	B	5	150	2/0/1	105		NSE131
	NSE140	Econometrics II	S	5	150	2/0/1	105		NSE104, NSE132
	NSE141	Further linear algebra II	S	5	120	2/0/1	60		NSE404
	NSE142	Abstract Mathematics	S	5	150	2/0/1	105		NSE134
	NSE143	Industrial economics	B	5	150	2/0/1	105		NSE401
	3201	Elective discipline	S	5	150	2/0/1	105		
	Total:				32		19		
7 semester (fall 2024)									
4	CSE667	Python language in scientific activity	S	5	150	2/1/0	105		
	4301	Elective discipline	S	5	150	2/0/1	105		
	4302	Elective discipline	S	5	150	2/0/1	105		
	4303	Elective discipline	S	5	150	2/0/1	105		
	4304	Elective discipline	S	5	150	2/0/1	105		
Total:				5		18			
8 semester (spring 2025)									
4	ECA001	*Preparation & writing of thesis (project)	FA	6					
	ECA103	Thesis (project) defence*	FA	6					
	4305	Elective discipline	S	5	150	2/0/1	105		
Total:				17					

Year of study	Code	Name of discipline	Cr edits	lec/lab/pr/ SW	Semester
Obligatory education with P/NP assessment					
1	AAP167	Educational Internship (B)	B	1	2
2	AAP168	Industrial Internship I (S)	B	1	4
3-4	AAP169	Industrial Internship II (S)	S	3	6
Other education					
1	AAP107	Sports club sectional	G	0	5-7
2-3	AAP500	Military training	G	0	3-6

Cycle of disciplines	Credits		
	compul- satory	elective	total
Cycle of general disciplines (G)	58	0	58
Cycle of basic disciplines (B)	110	2	112
Cycle of special disciplines (S)	55	5	60
Total of theoretical study:			
Final attestation (FA)	223	7	230
	12	0	12
Total:			
	235	7	242

Decision of the Academic Board of KazNRTU after K.I. Satpayev. Minutes # 3 of "15" 06 2021.

Decision of the Educational and Methodological Board of KazNRTU after K.I. Satpayev. Minutes # 6 of "14" 06 2021.

Decision of the Academic Council of the School of Project Management. Minutes # 5, dated 12 06 2021.

Vice-rector for academic affairs

Deputy Director of the IPM

Head of the Department of MME

B.A. Zhautikov

M. K. Abenova

A. J. Turegeldinova

MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
 'KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY named after K.I. SATPAYEV'

APPROVED
 Deputy Director of the IPM

M. Kh. Abenova M. Kh. Abenova

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MAJOR ELECTIVE DISCIPLINES educational program for the 2021-2022 academic year admission
 Educational programs 6B06101, 6B04101, 6B04102 - "Mathematical Economics and Data Analysis"
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 economics, banking and insurance"

Code	Name of course	Academic credits	lec/lab/pr
Major disciplines			
NSE174	Business English 1		
NSE122	Mathematics for economists 1	5	0/0/3
NSE117	Introduction to Statistics 1	5	2/0/2
NSE114	English 1 - Intensive course	5	2/0/2
NSE175	Business English 2	5	0/0/3
NSE118	Mathematics for economists 2	5	0/0/3
NSE119	Introduction to Statistics 2	5	2/0/2
NSE115	English 2 - Intensive course	5	2/0/2
MNG487	Fundamentals of entrepreneurship, leadership and anti-corruption culture	5	0/0/3
NSE120	Statistics 1	3	1/0/1
NSE123	Calculus 1	5	2/0/1
NSE124	Algebra 1	5	2/0/2
NSE125	Introduction to economics: Microeconomics	5	2/0/1
NSE121	Academic writing	5	2/0/2
NSE126	Statistics 2	5	0/0/3
NSE127	Calculus 2	5	2/0/1
NSE128	Algebra 2	5	2/0/2
NSE129	Introduction to economics: Macroeconomics	5	2/0/1
NSE130	Microeconomics	5	2/0/2
NSE135	Econometrics 1	5	2/0/1
NSE136	Further Calculus	5	2/0/1
NSE137	Further linear algebra 1	5	2/0/1
NSE138	Communication skills	5	2/0/1
NSE139	Macroeconomics	5	0/0/3
NSE140	Econometrics II	5	2/0/1
NSE141	Further linear algebra II	5	2/0/1
NSE142	Abstract Mathematics	5	2/0/1
NSE143	Industrial economics	5	2/0/1

Head of the Department of MME

A. Zh. Turegeldinova A. Zh. Turegeldinova