

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



WORKING CURRICULUM

Educational program for 2020-2021 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	Prerequisites	Code	Name of discipline	Component	Academic credits	Total hours	classroom volume lec/lab/pr	SW in hours	Code	Prerequisites	
<b>1 semester (fall 2021)</b>																			
1	NSE101	English (G1,G2,G3,G4)	G	12	240	0/0/6	150	S4	Diagnost. Test	NSE111	English 2	G	12	240	0/0/6	150	S4		
	LNG1012	Kazakh (Russian) language (A2)	G	4	120	0/0/2	90	S1	Diagnost. Test	HUM113	Contemporary History of Kazakhstan (State exam)	G	16	180	1/0/1	90	S6		
	NSE103	Introduction to differential and integral calculus I	B	8	240	2/0/2	180	S2		CSE174	Information and Communication Technologies (eng)	G	6	180	2/1/0	90			
	NSE102	Introduction to Statistics 1	B	8	240	2/0/2	180	P1-3		NSE113	Introduction to differential and integral calculus II	B	8	240	2/0/2	180	S2		
	KFK101	Physical education I	G	2	60	0/0/2	30			NSE112	Introduction to Statistics 2	B	8	240	2/0/2	180	P1-3		
<b>Total:</b> 34 18																			
<b>2 semester (spring 2022)</b>																			
2	HUM132	Philosophy	G	5	150	1/0/2	105	S6		HUM126	Social & Political Knowledge	G	8	240	4/0/0	180	S6		
	MNG487	Fundamentals of entrepreneurship, leadership and anti-corruption culture	G	3	90	1/0/1	60			NSE121	Academic writing	B	5	150	0/0/3	105			
	NSE125	Introduction to economics: Microeconomics	B	5	150	2/0/2	90	P1-3		NSE129	Introduction to economics: Macroeconomics	B	5	150	2/0/2	90	P1-3		
	NSE120	Statistics 1	B	5	150	2/0/1	105	P1-3	NSE112	NSE126	Statistics 2	B	5	150	2/0/1	105	P1-3	NSE105	
	NSE123	Calculus 1	B	5	150	2/0/2	90	P1-3	NSE109	NSE127	Calculus 2	B	5	150	2/0/2	90	P1-3	NSE109	
NSE124	Algebra 1	B	5	150	2/0/1	105	P1-3	NSE109	NSE128	Algebra 2	B	5	150	2/0/1	105	P1-3	NSE109		
KFK103	Physical education III	G	2	60	0/0/2	30			KFK104	Physical education IV	G	2	60	0/0/2	30				
<b>Total:</b> 30 21																			
<b>3 semester (fall 2022)</b>																			
3	CHE451	Life safety	O	2	60	1/0/0	45			NSE142	Abstract Mathematics	B	5	150	2/0/1	105	NSE134		
	CHE452	Ecology and sustainable development	O	2	60	1/0/0	45			NSE141	Further linear algebra II	B	5	120	2/0/1	60	NSE404		
	NSE130	Microeconomics	B	5	150	2/0/1	105		NSE104	NSE139	Macroeconomics	B	5	150	2/0/1	105	NSE131		
	NSE135	Econometrics 1	B	5	150	2/0/1	105		NSE132	NSE140	Econometrics II	B	5	150	2/0/1	105	NSE104, NSE132		
	NSE136	Further Calculus	B	5	150	2/0/1	105		NSE133	NSE143	Industrial economics	S	5	150	2/0/1	105	NSE401		
NSE137	Further linear algebra 1	B	5	120	2/0/1	60		NSE134	3201	Elective discipline	S	5	150	2/0/1	105				
CSE678	Algorithms and data structures	S	5	150	1/1/1	105			<b>Total:</b> 30 21										
<b>4 semester (spring 2023)</b>																			
4	CSE667	Python language in scientific activity	S	5	150	1/1/1	105			<b>6 semester (spring 2024)</b>									
	4301	Elective discipline	S	5	150	2/0/1	105			NSE142	Abstract Mathematics	B	5	150	2/0/1	105	NSE134		
	4302	Elective discipline	S	5	150	2/0/1	105			NSE141	Further linear algebra II	B	5	120	2/0/1	60	NSE404		
	4303	Elective discipline	S	5	150	2/0/1	105			NSE139	Macroeconomics	B	5	150	2/0/1	105	NSE131		
	4304	Elective discipline	S	5	150	2/0/1	105			NSE140	Econometrics II	B	5	150	2/0/1	105	NSE104, NSE132		
<b>Total:</b> 25 15																			
<b>7 semester (fall 2024)</b>																			
<b>8 semester (spring 2025)</b>																			
<b>Total:</b> 12																			

Year of study	Code	Name of discipline	Credits	Semester
Обязательные виды обучения с выставлением оценки P/NP				
1	AAP101	Educational Internship (B)	B 1	2
2	AAP109	Industrial Internship I (S)	B 1	4
3	AAP158	Industrial Internship II (S)	S 3	6
Дополнительные виды обучения				
1	AAP107	Sports club sectional	G 0	5-7
2-3	AAP500	Military training	G 0	3-6

Cycle of disciplines	Credits		
	compulsory	elective	total
Cycle of general disciplines (G)	68	0	68
Cycle of basic disciplines (B)	117	2	119
Cycle of special disciplines (S)	40	3	44
<b>Total of theoretical study:</b> 225 5 231			
Final attestation (FA)	12	0	12
<b>Total:</b> 237 5 243			

Decision of the Academic Board of KazNRTU after K.I. Satpayev. Minutes # 3 of 25.06.2021.

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 # , dated " " 2021.

Vice-rector for academic affairs

B.A. Zhautikov

Deputy Director of the IPM

M. K. Abenova

Head of the Department of MME

A. J. Turegeldinova

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APPROVED

Deputy Director of the IPM

*M. Kh. Abenova* M. Kh. Abenova  
 28.06.2021 y.



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
<b>Major disciplines</b>			
NSE101	English (G1,G2,G3,G4)	12	0/0/6
NSE103	Introduction to differential and integral calculus I	8	2/0/2
NSE102	Introduction to Statistics 1	8	2/0/2
NSE111	English 2	12	0/0/6
NSE113	Introduction to differential and integral calculus II	8	2/0/2
NSE112	Introduction to Statistics 2	8	2/0/2
MNG487	Fundamentals of entrepreneurship, leadership and anti-corruption culture	3	1/0/1
NSE125	Introduction to economics: Microeconomics	5	2/0/2
NSE120	Statistics 1	5	2/0/1
NSE123	Calculus 1	5	2/0/2
NSE124	Algebra 1	5	2/0/1
NSE121	Academic writing	5	0/0/3
NSE129	Introduction to economics: Macroeconomics	5	2/0/2
NSE126	Statistics 2	5	2/0/1
NSE127	Calculus 2	5	2/0/2
NSE128	Algebra 2	5	2/0/1
NSE130	Microeconomics	5	2/0/1
NSE135	Econometrics 1	5	2/0/1
NSE136	Further Calculus	5	2/0/1
NSE137	Further linear algebra 1	5	2/0/1
NSE142	Abstract Mathematics	5	2/0/1
NSE141	Further linear algebra II	5	2/0/1
NSE139	Macroeconomics	5	2/0/1
NSE140	Econometrics II	5	2/0/1
NSE143	Industrial economics	5	2/0/1

Head of the Department of MME

*A. Zh. Turegeldinova*

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