

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



APPROVE

Chairman of the Management Board
Rector of KazNU named after K.Satpayev
M.M. Begentaev
06 2021 г.

WORKING CURRICULUM for 2019-2020 academic year Admission
Educational program 6B07106 - "Mechanical Engineering"
Group of Educational programs B064 - "Mechanics and metalworking"

Form of study: full-time Duration of study: 4 years Academic degree: Bachelor of Engineering and Technology

Year of study	Discipline code	Name of disciplines	semester	Cycle	Credits	Total hours	classroom volume of lect/lab/pr	SRS (including SRS/P) in hours	Form of control	Competencies
Language Training module										
Required component										
	LNG 1051	Beginner (A1)	1	O	6	180	0/0/3	135	Э	
	LNG 1052	Elementary English (A1)								
	LNG 1053	General English 1 (A2)								
	LNG 1054	General English 2 (A2)								
	LNG 1055	Academic English (B1)								
	LNG1056	Business English (B2)								
	LNG 1052	Elementary English (A1)	2	O	6	180	0/0/3	135	Э	
	LNG 1053	General English 1 (A2)								
	LNG 1054	General English 2 (A2)								
	LNG 1055	Academic English (B1)								
	LNG1056	Business English (B2)								
	LNG 1057	Professional English (B2+)								
	LNG1012	Kazakh (Russian) language (A2)	1	O	4	120	0/0/2		Э	
	LNG1012.1	Academic Kazakh (Russian) language (B1)								
	LNG1012.2	Business Kazakh (Russian) language (B2)								
	LNG1102.1	Academic Kazakh (Russian) language (B1)	2	O	4	120	0/0/2		Э	
	LNG1102.2	Business Kazakh (Russian) language (B2)								
	LNG1012	Kazakh (Russian) language (A2)								
	LNG 1053	General English 1 (A2)	3						Э	
	LNG 1054	General English 2 (A2)								
	LNG 1055	Academic English (B1)		O	6	180	0/0/3	135		
	LNG1056	Business English (B2)								
	LNG 1057	Professional English (B2+)								
	LNG 1054	General English 1 (A2)	4						Э	
	LNG 1055	General English 2 (A2)								
	LNG1056	Academic English (B1)		O	6	180	0/0/3	135		
	LNG 1057	Business English (B2)								
	2109	Professional English (B2+)								
Module of social disciplines										
Required component										
	AAP106	Physical education I	1	O	4	60	0/0/2	30	Э	
	AAP118	Physical education II	2	O	4	60	0/0/2	30	Э	
	HUM100	Modern History of Kazakhstan (state exam) (video tutorial)	1	O	6	180	1/0/2	135	Э	
	HUM124	Philosophy	4	O	6	150	1/0/2	105	Э	
Socio-political knowledge module										
Required component										
	HUM126	Socio-political knowledge	6	O	8	150	4/0/0	90	Э	
Module of physical and mathematical training, computer science and chemistry										
University component										
	MAT00110	Algebra and Introduction to Matanalysis	1	Б	6	180	1/0/2	135	Э	
	MAT101	Mathematics I								
	MAT101	Mathematics I	2	Б	6	180	1/0/2	180	Э	
	MAT102	Mathematics II								
	PHY00110	Introduction to Physics	1	Б	6	180	1/1/1	135	Э	
	PHY413	Physics I: Mechanics. Molecular physics and thermodynamics				180				
	PHY413	Physics I: Mechanics. Molecular physics and thermodynamics	2	Б	6	180	1/1/1	135	Э	
	PHY414	Physics II: Electricity and Magnetism				180				
	MAT124	Linear algebra and analytic geometry	2	Б	6	180	1/0/2	135	Э	
	MAT102	Mathematics II				180				
	CHE199	Physical chemistry	3	Б	6	180	1/0/2	135	Э	
	MAT103	Mathematics III				180				
	MAT190	Ordinary differential equations. MatLab	3	Б	6	180	1/0/2	135	Э	
	PHY415	Physics III: Optics. Atomic physics				180				
	PHY421	Physics of materials	4	Б	6	180	2/1/0	135	Э	
	PHY414	Physics II: Electricity and Magnetism				180				
	PHY415	Physics III: Optics. Atomic physics	3	Б	6	180	1/1/1	135	Э	
	CSE677	Information and communication technologies	3	O	6	180	2/1/0	135	Э	
Module of basic general technical training										

University component									
GEN111	Engineering graphics	1	Б	6	180	1/1/1	135	Э	
GEN171	Statics and kinematics	4	Б	6	180	1/0/2	135	Э	
GEN198	Dynamics	5	Б	5	150	1/0/2	105	Э	
MAT127	Partial differential equations. MatLab	4	Б	6	180	1/0/2	135	Э	
GEN154	Numerical methods and programming	4	Б	6	180	1/1/1	135	Э	
GEN199	Engineering thermodynamics	5	Б	5	150	1/0/2	105	Э	
GEN413	Theory and design of mechanisms and machines	6	Б	5	150	1/1/1	105	Э	
ROB529	Introduction to electronic measuring systems	5	Б	5	150	2/1/0	105	Э	
GEN186	Fundamentals of mechatronics	7	Б	5	150	1/1/1	105	Э	
GEN185	Statistical mechanics	5	Б	5	150	1/1/1	105	Э	
GEN178	Computational mechanics				150	1/1/1	105	Э	
GEN404	Fluid and gas mechanics	5	Б	5	150	1/1/1	105	Э	
GEN405	Solid state mechanics	6	Б	5	150	1/0/2	105	Э	
GEN420	Design of mechanical systems	6	Б	5	150	1/1/1	105	Э	
Professional activity module									
University component									
GEN421	Introduction to Robotics	7	С	5	150	1/1/1	105	Э	
GEN410	Strength of materials	5	С	5	150	1/1/1	105	Э	
GEN402	Engineering Materials	6	С	5	150	1/1/1	105	Э	
GEN418	Basics of heat transfer	7	С	5	150	1/0/2	105	Э	
GEN419	Design of machine elements	6	С	5	150	1/1/1	105	Э	
Component of choice									
GEN415	Numerical methods for solving engineering problems	6	С	5	150	1/0/2	105	Э	
GEN188	Computational hydromechanics		С		150	1/1/1	105	Э	
GEN422	Laboratory course: Fluid Flows	8	С	4	60	0/2/0	30	Э	
GEN423	Laboratory course: Heat Transfer		С			0/2/0		Э	
GEN191	Design of thermal and ventilation systems	7	С	5	150	1/2/0	105	Э	
GEN192	Renewable energy systems		С			2/1/0	105	Э	
GEN159	Dynamics of machines and its computer analysis	7	С	5	150	2/1/0	105	Э	
GEN189	Dynamic systems management		С			2/0/1		Э	
GEN193	3D printing of machine parts and elements	8	С	5	150	2/1/0	105	Э	
GEN194	Mechanics of biofluids		С		150	2/1/0	105	Э	
Practice-oriented module									
Required component									
AAP101	Educational practice	2	Б	2					
AAP109	Production practice I	4	П	2					
AAP181	Production practice II	6	П	4					
Module of final certification									
Required component									
ECA003	Preparation and writing of a thesis (project)*	8	FC	6					
ECA103	Defense of the thesis (project)*	8	FC	6					
Module of additional types of training									
Component of choice									
AAP107	Sports club sectional	5-7		0					
AAP500	Military affairs	3-6		0					
Number of credits for the entire period of study									
Cycles of disciplines		Credits							
		mandatory	elective	Total					
Cycle of general education disciplines		66		66					
Cycle of basic disciplines		135	2	137					
Cycle of profile disciplines		49	6	55					
Total for theoretical training:		250	8	258					
Final certification		12	0	12					
total:		262	8	270					

The decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 3 "25" 06 20 r.

Decision of the Academic Council of the Institute ИЭМ. Protocol № 12 "07" 06 2021 r.

Vice-Rector for Academic Affairs

Director of the Institute of Energy and Mechanical Engineering

Head of department "Mechanical Engineering and modelling"

Representative of Specialty council

B.A. Zhautikov

K.K. Yelemessov

A. Kaltayev

A.K. Tuleshov