



**CURRICULUM**  
of Educational Program on enrollment for 2023-2024 academic year  
Educational program 6B07130 - "Mechanical Engineering and Modeling"  
Group of educational programs in 064 - "Mechanics and metalworking"

APPROVED  
Chairman of the Board –  
K.I. Satbayev  
2023 g.

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

Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	classroom volume of lek/lab/pr	SIS (including TSIS) in hours	Form of control	Allocation of face-to-face training based on courses and semesters								
								I course		II course		III course		Iv course		
								1 term	2 term	3 term	4 term	5 term	6 term	7 term	8 term	
<b>CYCLE OF GENERAL EDUCATION DISCIPLINES (OOD)</b>																
<b>M-1. Language Training module</b>																
LNG 108	English language	GED, RC	10	300	0/0/6	210	E	5	5							
LNG 104	Kazakh (Russian) language	GED, RC	10	300	0/0/6	210	E	5	5							
<b>M-2. Physical training module</b>																
KFK 101-104	Physical Culture	GED, RC	8	240	0/0/8	120	Diferedit	2	2	2	2					
<b>M-3. Information Technology module</b>																
CSE 677	Information and communication technologies (in English)	GED, RC	5	150	2/1/0	105	E				5					
<b>M-4. Module of socio-cultural development</b>																
HUM 137	History of Kazakhstan	GED, RC	5	150	1/0/2	105	SE		5							
HUM 132	Philosophy	GED, RC	5	150	1/0/2	105	E				5					
HUM 120	Module of socio-political knowledge (sociology, political science)	GED, RC	3	90	1/0/1	60	E				3					
HUM 134	Module of socio-political knowledge (cultural studies, psychology)		5	150	2/0/1	105	E				5					
<b>M-5. Module fundamentals of anti-corruption culture, ecology and life safety</b>																
HUM 136	Fundamentals of Anti-Corruption Culture and Law	GED, CCH	5	150	2/0/1	105	E									
MNG 489	Fundamentals of Economics and Entrepreneurship															
MSM500	Scientific research methods															
CHE 656	Ecology and life safety															
<b>CYCLE OF BASIC DISCIPLINES (DB)</b>																
<b>M-6. Module of physical and mathematical training</b>																
MAT 169	Mathematical Analysis I	BD, UC	5	150	1/0/2	105	E	5								
PHY 469	Physics I: Molecular Physics. Thermodynamics	BD, UC	5	150	1/1/1	105	E	5								
MAT189	Linear algebra and analytic geometry	BD, UC	5	150	1/0/2	105	E	5								
MAT 170	Mathematical Analysis II	BD, UC	5	150	1/0/2	105	E		5							
PHY 471	Physics II: Electricity and Magnetism. Nuclear physics	BD, UC	5	150	1/1/1	105	E		5							
MAT171	Mathematical Analysis III	BD, UC	5	150	1/0/2	105	E				5					
MAT110	Ordinary differential equations	BD, UC	5	150	1/0/2	105	E				5					
MAT172	Mathematical Analysis IV	BD, UC	5	150	1/0/2	105	E					5				
MAT448	Equations of mathematical physics	BD, UC	5	150	1/0/2	105	E						5			
<b>M-7. Module of basic training in engineering mechanics and Modeling</b>																
GEN 177	Engineering and computer graphics	BD, UC	5	150	1/1/1	105	E	5								
GEN409	Statics and kinematics	BD, UC	5	150	1/0/2	105	E			5						
GEN198	Dynamics	BD, UC	5	150	1/0/2	105	E				5					
CHE495	General chemistry	BD, UC	5	150	1/1/1	105	E					5				
GEN413	Theory and design of mechanisms and machines	BD, UC	5	150	1/1/1	105	E						5			
GEN199	Engineering thermodynamics	BD, UC	5	150	1/0/2	105	E							5		
GEN414	Numerical methods and programming	BD, UC	5	150	1/1/1	105	E								5	
GEN404	Fluid and gas mechanics	BD, UC	5	150	1/1/1	105	E									5
GEN405	Solid state mechanics	BD, UC	5	150	1/0/2	105	E									5
GEN504	Computational hydromechanics and modeling	BD, UC	5	150	1/0/2	105	E									5
3221	ELECTIVE	BD, CCH	5	150	1/1/1	105	E							5		
GEN447	Modeling and design of mechanical systems	BD, UC	5	150	1/1/1	105	E									5
GEN448	Modeling and design of thermal systems	BD, UC	5	150	1/1/1	150	E									5
GEN100	Educational practice	BD, UC	2							2						

CYCLE OF PROFILE DISCIPLINES (PD)																		
M-8. Module of professional training in engineering mechanics and Modeling																		
GEN426	Strength of materials	PD, UC	5	150	1/1/1	105	E					5						
GEN505	Object oriented programming	PD, UC	5	150	1/1/1	105	E						5					
GEN419	Design of machine elements and parts	PD, UC	5	150	1/1/1	105	E						5					
4307	ELECTIVE	PD, UC	4	120	1/1/1	75	E						4					
3223	ELECTIVE	PD, CCH	4	120	1/2/0	75	E						4					
GEN510	Basics of heat transfer	PD, UC	5	150	1/0/2	105	E							5				
GEN421	Introduction to Robotics	PD, UC	5	150	1/1/1	105	E							5				
GEN160	The finite element method in engineering	PD, CCH	5	150	1/1/1	105	E							5				
4309	ELECTIVE	PD, CCH	5	150	1/1/1	105	E							5				
4310	ELECTIVE	PD, CCH	6	180	2/1/1	120	E							6				
4311	ELECTIVE	PD, CCH	6	180	2/1/1	120	E							6				
4308	ELECTIVE	PD, UC	4	120	0/3/0	75	E							4				
GEN500	Industrial practice I	PD, UC	2									2						
GEN501	Industrial practice II	PD, UC	3										3					
M-9. Module of final certification																		
ECA108	final examination	FA	8											8				
M-10. Module of additional types of training																		
AAP500	Military training	DVO	0															
<b>Total based on UNIVERSITY:</b>											32	29	27	32	30	31	30	29
											61		59		61		59	

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			Total
		required component (OK)	university component	component of choice (CCH)	
GED	Cycle of general education disciplines	51		5	56
BD	Cycle of basic disciplines		107	5	112
PD	Cycle of profile disciplines		34	30	64
	<i>Total for theoretical training:</i>	51	141	40	232
FA	Final certification	8			8
	<b>Total:</b>	59	141	40	240

Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 9 от " 25 " 01 2023 y.

Decision of the Educational and Methodological Council of Kazntu named after K.Satpayev. Protocol № 4 от " 10 " 01 2023 y.

Decision of the Academic Council of the Institute \_\_\_\_\_ . Protocol № 2 от " 11 " 10 2023 y.

Vice-Rector for Academic Affairs



B.A. Zhautikov

Director of the Institute of Energy and Mechanical Engineering



K.K. Yelemessov

Head of department "Mechanical Engineering"



A. Kaltayev

Representative of Specialty council

A.K. Tuleshov