



APPROVED

Chairman of the Management Board-
Rector of KazNRTU named after K.Satpayev

M.M. Begentaev
2024 y.

CURRICULUM
of Educational Program on enrollment for 2024-2025 academic year
Educational program 7M07145 - "Mechanical Engineering and Modeling"
Group of educational programs M103- "Mechanics and metalworking"

Form of study: full-time Duration of study: 2 year Academic degree: Master of Technical Sciences

Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	Classroom amount lec/lab/pr	SIS (including TSIS) in hours	Form of control	Allocation of face-to-face training based on courses and semesters			
								1 course		2 course	
								1 semester	2 semester	3 semester	4 semester
CYCLE OF BASIC DISCIPLINES (BD)											
M-1. Module of basic training (university component)											
LNG213	Foreign language (professional)	BD UC	3	90	0/0/2	60	E	3			
HUM214	Management Psychology	BD UC	3	90	1/0/1	60	E	3			
HUM212	History and philosophy of science	BD UC	3	90	1/0/1	60	E		3		
HUM213	Higher school pedagogy	BD UC	3	90	1/0/1	60	E		3		
component of choice											
GEN202	Fundamentals of continuum mechanics	BD CCH	5	150	1/0/2	105	E	5			
GEN220	The phenomenon of mass transfer and transfer in a continuous medium										
MNG781	Intellectual property and research	BD CCH	5	150	2/0/1	105	E	5			
GEN209	Dynamics of mechanical systems										
GEN221	Contact mechanics and friction										
MNG782	Sustainable development strategies	BD CCH	5	150	2/0/1	105	E			5	
GEN210	Turbulent currents										
GEN222	Methods for calculating turbulent flow										
CYCLE OF PROFILE DISCIPLINES (PD)											
M-2. Module of professional activity (university component, component of choice)											
GEN211	Computational fluid dynamics	PD UC	5	150	1/2/0	105	E	5			
GEN212	Object-oriented programming	PD UC	5	150	1/1/1	105	E	5			
GEN213	Computational Mechanics - CAD&CAE	PD UC	5	150	1/2/0	105	E		5		
GEN214	Machine learning and data analysis	PD UC	5	150	1/1/1	105	E		5		
GEN215	Filtration theory and applied problems	PD UC	5	150	1/1/1	105	E		5		
GEN216	Dynamic systems: vibration and control	PD UC	5	150	1/1/1	105	E		5		
GEN217	Robotics	PD UC	5	150	1/1/1	105	E			5	
GEN218	Applications of thermodynamics	PD UC	5	150	1/1/1	105	E			5	
GEN219	Renewable energy systems	PD UC	5	150	1/0/2	105	E			5	
GEN223	Artificial intelligence in engineering	PD UC	4	120	2/0/1	75	E				4
M-3. Practice-oriented module											
AAP273	Pedagogical practice	BD CCH	8							8	
AAP256	Research practice	PD, UC	4								4
M-4. Experimental research module											
AAP268	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	4					4			
AAP268	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	4						4		
AAP251	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	2							2	
AAP255	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	14								14
M-5. Module of final attestation											

ECA212	Preparation and defense of a master's thesis	FA	8							8
Total based on UNIVERSITY:							30	30	30	30
							60		60	

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			
			university component (UC)	component of choice (CCH)	Total
BD	Cycle of basic disciplines		20	15	35
PD	Cycle of profile disciplines		53	0	53
	<i>Total for theoretical training:</i>	<i>0</i>	<i>73</i>	<i>15</i>	<i>88</i>
	RWMS				24
FA	Final attestation	8			8
	TOTAL:	8	73	15	120

Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 12 or "22" 04 2024 y.

Decision of the Educational and Methodological Council of Kazntu named after K.Satpayev. Protocol № 5 or "19" 04 2024 y.

Decision of the Academic Council of the Institute IEPM. Protocol № 4 or "19" 01 2024 y.

Vice-Rector for Academic Affairs

Director of the Institute of Energy and Mechanical Engineering

Head of department "Mechanical Engineering"

Representative of Specialty council

R.K. Uskenbayeva

K.K. Yelemessov

A. Kaltayev

A.K. Tuleshov