NON-PROFIT JOINT STOCK COMPANY
"KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY NAMED AFTER K.I. SATBAYEV"

SATBAYEV UNIVERSITY

«APPROVED»
Decision of the Academic Council
NPJSC«KazNRTU
named after K.Satbayev»
dated 06.03.2025 Minutes № 10

WORKING CURRICULUM

Academic year	**2025-2026 (Autumn, Spring)**
Group of educational programs	**B069 - "Production of materials (glass, paper, plastic, tree)"**
Educational program	**6B07220 - "Machines and technologies for processing new materials"**
The awarded academic degree	**Bachelor of engineering and technology**
Form and duration of study	**full time - 4 years**

Discipline code	Name of disciplines	Block	Cycle	Total ECTS credits	Total hours	lek/lab/pr Contact hours	in hours SIS (including TSIS)	Form of control	Allocation of face-to-face training based on courses and semesters								Prerequisites
									1 course		2 course		3 course		4 course		
									1 sem	2 sem	3 sem	4 sem	5 sem	6 sem	7 sem	8 sem	
CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)																	
M1 Module of language training																	
LNG108	Foreign language		GED, RC	5	150	0/0/45	105	E	5								
LNG104	Kazakh (russian) language		GED, RC	5	150	0/0/45	105	E	5								
LNG108	Foreign language		GED, RC	5	150	0/0/45	105	E		5							
LNG104	Kazakh (russian) language		GED, RC	5	150	0/0/45	105	E		5							
M2 Module of physical training																	
KFK101	Physical culture I		GED, RC	2	60	0/0/30	30	E	2								
KFK102	Physical culture II		GED, RC	2	60	0/0/30	30	E		2							
KFK103	Physical culture III		GED, RC	2	60	0/0/30	30	E			2						
KFK104	Physical culture IV		GED, RC	2	60	0/0/30	30	E				2					
M3 Module of information technology																	
CSE677	Information and communication technology		GED, RC	5	150	30/15/0	105	E				5					
M4 Module of socio-cultural development																	
HUM137	History of Kazakhstan		GED, RC	5	150	15/0/30	105	GE	5								
HUM132	Philosophy		GED, RC	5	150	15/0/30	105	E			5						
HUM120	Module of socio-political knowledge (sociology, political science)		GED, RC	3	90	15/0/15	60	E			3						
HUM134	Module of socio-political knowledge (cultural studies, psychology)		GED, RC	5	150	30/0/15	105	E				5					
M5 Module fundamentals of anti-corruption culture, ecology and life safety																	
MSM500	Fundamentals of scientific research methods	1	GED, CCH	5	150	30/0/15	105	E			5						
MNG489	Fundamentals of economics and entrepreneurship	1	GED, CCH	5	150	30/0/15	105	E			5						
HUM136	Fundamentals of anti-corruption culture and law	1	GED, CCH	5	150	30/0/15	105	E			5						
CHE656	Ecology and life safety	1	GED, CCH	5	150	30/0/15	105	E			5						
MNG564	Basics of Financial Literacy	1	GED, CCH	5	150	30/0/15	105	E			5						
CYCLE OF BASIC DISCIPLINES (BD)																	
M6 Module of physical and mathematical training																	
MAT101	Mathematics I		BD, UC	5	150	15/0/30	105	E	5								
PHY111	Physics I		BD, UC	5	150	15/15/15	105	E	5								

MAT102	Mathematics II		BD, UC	5	150	15/0/30	105	E		5							MAT101
PHY112	Physics II		BD, UC	5	150	15/15/15	105	E		5							PHY111
M7 General technical training module																	
MSM132	Introduction to engineering design		BD, UC	5	150	15/30/0	105	E	5								
AAP419	Educational practice		BD, UC	1				R		1							
ISO111	Production workshops		BD, UC	5	150	0/0/45	105	E		5							
MCH532	Standardization, interchangeability and technical measurements		BD, UC	5	150	15/15/15	105	E			5						
MAT402	Classic mechanics		BD, UC	5	150	15/0/30	105	E			5						
ELC101	Electrical and Electronic Engineering		BD, UC	5	150	15/15/15	105	E			5						
MCH157	Materials Science and Structural materials		BD, UC	5	150	30/15/0	105	E				5					
GEN408	Strength of materials		BD, UC	5	150	15/15/15	105	E				5					
MSM420	Heating and heating devices		BD, UC	4	120	15/0/30	75	E				4					
MSM108	Test and Measurement, Measurements and Statistics		BD, UC	5	150	15/0/30	105	E					5				
GEN125	Bases of designing and details of cars		BD, UC	5	150	15/15/15	105	E					5				
MSM121	Equipment for machine-building production		BD, UC	5	150	15/15/15	105	E					5				
MCH416	Forging and hot stamping technology		BD, UC	5	150	15/30/0	105	E					5				
MCH509	Machine-building equipment drives		BD, UC	5	150	15/0/30	105	E					5				
MCH516	3D Scanning techniques and technologies		BD, UC	5	150	15/30/0	105	E						5			
MSM163	Theory of materials processing by pressure	1	BD, CCH	5	150	15/0/30	105	E						5			
CSE831	Fundamentals of Artificial Intelligence	1	BD, CCH	5	150	15/0/30	105	E						5			
MSM167	Forging and stamping equipment	2	BD, CCH	5	150	30/0/15	105	E						5			
MNG563	Fundamentals of sustainable development and ESG projects in Kazakhstan	2	BD, CCH	5	150	30/0/15	105	E						5			
MSM461	Design of forging and stamping equipment	3	BD, CCH	5	150	30/15/0	105	E						5			
MNG562	Legal regulation of intellectual property	3	BD, CCH	5	150	30/0/15	105	E						5			
MSM414	Automated design of PMP processes		BD, UC	6	180	30/0/30	120	E							6		
M8 The module of production and technological training																	
HYD482	Occupational health and industrial safety (by industry)		BD, UC	5	150	30/0/15	105	E							5		
CYCLE OF PROFILE DISCIPLINES (PD)																	
M8 The module of production and technological training																	
AAP197	Industrial practice I		PD, UC	4				R				4					
MSM412	Composite materials processing technology		PD, UC	5	150	15/30/0	105	E					5				
IND129	Lean manufacturing		PD, UC	5	150	30/15/0	105	E						5			
AAP421	Industrial practice II		PD, UC	5				R						5			
MCH158	Cold stamping technology		PD, UC	5	150	15/15/15	105	E							5		
MSM455	Organization and planning of forging and stamping production		PD, UC	6	180	30/0/30	120	E							6		
MSM467	Engineering Product Lifecycle Management		PD, UC	5	150	15/0/30	105	E							5		
MCH149	CAM(Solidworks, Inventor)	1	PD, CCH	5	150	15/30/0	105	E							5		
MSM119	Additive Manufacturing	1	PD, CCH	5	150	30/0/15	105	E							5		
MSM411	Computer-aided design systems of machine structures		PD, UC	4	120	15/30/0	75	E								4	
MSM453	Tool and mold design	1	PD, CCH	6	180	30/0/30	120	E								6	
MSM413	Advanced materials processing technologies	1	PD, CCH	6	180	30/0/30	120	E								6	
MCH159	Basics of designing machines for pressure processing	2	PD, CCH	5	150	30/0/15	105	E								5	
MSM416	Welding equipment and tools	2	PD, CCH	5	150	30/0/15	105	E								5	
M9 «R&D»Management training Module																	
MSM418	Capstone Project	1	PD, CCH	5	150	15/30/0	105	E								5	
MSM417	Project management in mechanical engineering	1	PD, CCH	5	150	15/0/30	105	E								5	
M10 The module of final certification																	
ECA103	Final examination		FA	8												8	

Additional type of training (ATT)																	
AAP500	Military training																
Total based on UNIVERSITY:									32	28	30	30	30	30	32	28	
									60		**60**		**60**		**60**		

Number of credits for the entire period of study

Cycle code	Cycles of disciplines	Credits			
		Required component (RC)	University component (UC)	Component of choice (CCH)	Total
GED	Cycle of general education disciplines	51	0	5	56
BD	Cycle of basic disciplines	0	101	15	116
PD	Cycle of profile disciplines	0	39	21	60
Total for theoretical training:		**51**	**140**	**41**	**232**
FA	Final attestation				8
TOTAL:					**240**

Decision of the Educational and Methodological Council of KazNRTU named after K.Satpayev. Minutes № 3 dated 20.12.2024

Decision of the Academic Council of the Institute. Minutes № 3 dated 19.12.2024

Signed:

Governing Board member - Vice-Rector for Academic Affairs	Uskenbayeva R. K.
Approved:	
Vice Provost on academic development	Kalpeyeva Z. Б.
Head of Department - Department of Educational Program Management and Academic-Methodological Work	Zhumagaliyeva A. S.
Director of the Institute - A.Burkitbaev Institute of Energy and Mechanical Engineering	Yelemesov K. .
Department Chair - Mechanical Engineering	Nugman E. .
Representative of the Academic Committee from Employers ____Acknowledged____	Andreev V. I.