



WORKING CURRICULUM

Academic year	2025-2026 (Spring, Autumn)
Group of educational programs	MI13 - "Technology for materials pressure processing"
Educational program	7M07228 - "Advanced technologies of materials processing"
The awarded academic degree	Master of Technical Sciences
Form and duration of study	full time (scientific and pedagogical track) - 2 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		
									1 sem	2 sem	3 sem	4 sem	
CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)													
CYCLE OF BASIC DISCIPLINES (BD)													
M1 Engineering training module													
HUM212	History and philosophy of science		BD, UC	3	90	15/0/15	60	E	3				
HUM213	Higher school pedagogy		BD, UC	3	90	15/0/15	60	E	3				
LNG213	Foreign language (professional)		BD, UC	3	90	0/0/30	60	E		3			
HUM214	Psychology of management		BD, UC	3	90	15/0/15	60	E		3			
MSM227	Equipment and technology of rolling production	1	BD, CCH	5	150	30/0/15	105	E		5			
MSM228	Technologies of pressing and drawing of materials	1	BD, CCH	5	150	30/0/15	105	E		5			
MSM220	Technological processes of additive manufacturing	2	BD, CCH	5	150	30/0/15	105	E		5			
MNG782	Sustainable development strategies	2	BD, CCH	5	150	30/0/15	105	E		5			
ISO241	Advanced technologies in mechanical engineering	1	BD, CCH	5	150	30/0/15	105	E			5		
MNG781	Intellectual property and research	1	BD, CCH	5	150	30/0/15	105	E			5		
M3 Practice-oriented module													
AAP273	Pedagogical practice		BD, UC	8				R			8		
CYCLE OF PROFILE DISCIPLINES (PD)													
M2 The module of digitalization of materials processing by pressure													
IND228	Design of Industrial Experiments		PD, UC	5	150	30/0/15	105	E	5				
MCH208	Reliability and diagnostics of technological systems		PD, UC	5	150	30/0/15	105	E	5				
MCH255	Integrated CAD / CAM systems	1	PD, CCH	5	150	30/0/15	105	E	5				
IND209	Multipurpose equipment in digital manufacturing	1	PD, CCH	5	150	30/0/15	105	E	5				
MCH284	Technological fundamentals of powder metalurgy	2	PD, CCH	5	150	30/0/15	105	E	5				
MCH279	Nanomaterials for processes of processing	2	PD, CCH	5	150	30/0/15	105	E	5				
MSM202	Advanced Digital Manufacturing Monitoring		PD, UC	5	150	30/0/15	105	E		5			
IND229	Production Planning and Control		PD, UC	5	150	30/0/15	105	E		5			
MSM217	CAD/CAM/CAE/PLM of Additive Manufacturing	1	PD, CCH	5	150	30/0/15	105	E			5		

MCH244	PLM / PDM processes	1	PD, CCH	5	150	30/0/15	105	E			5		
MCH215	Design and operation of machines and equipment for gas and plasma atomization	2	PD, CCH	5	150	30/15/0	105	E			5		
MSM208	Advanced Additive Manufacturing Ergonomics	2	PD, CCH	5	150	30/0/15	105	E			5		
MCH217	Design and operation of machines and equipment for filament production systems	3	PD, CCH	5	150	30/0/15	105	E			5		
MCH252	Blanks processing technology on the automatic machines and lines	3	PD, CCH	5	150	30/0/15	105	E			5		
MSM229	Pipe production technologies	1	PD, CCH	4	120	30/0/15	75	E				4	
MSM230	Tribology in pressure treatment	1	PD, CCH	4	120	30/0/15	75	E				4	
M3 Practice-oriented module													
AAP256	Research practice		PD, UC	4				R				4	
M4 Experimental research module													
AAP268	Research work of a master's student, including internship and completion of a master's thesis		RWMS	4				R	4				
AAP268	Research work of a master's student, including internship and completion of a master's thesis		RWMS	4				R		4			
AAP251	Research work of a master's student, including internship and completion of a master's thesis		RWMS	2				R			2		
AAP255	Research work of a master's student, including internship and completion of a master's thesis		RWMS	14				R				14	
M5 Module of final attestation													
ECA212	Registration and protection of the master 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			
		Required component (RC)	University component (UC)	Component of choice (CCH)	Total
GED	Cycle of general education disciplines	0	0	0	0
BD	Cycle of basic disciplines	0	20	15	35
PD	Cycle of profile disciplines	0	24	29	53
Total for theoretical training:		0	44	44	88
RWMS	Research Work of Master's Student				24
ERWMS	Experimental Research Work of Master's Student				0
FA	Final attestation				8
TOTAL:					120

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. B.

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

Andreev V. I.

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