



**SATBAYEV
UNIVERSITY**



APPROVED

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

M.M. Begentaev
2023 г.

CURRICULUM
of Educational Program on enrollment for 2023-2024 academic year

Educational program 7M07112 - "Digitalization of machine-building production"
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. Engineering training module (university component)											
LNG210	English (professional)	BD UC	5	150	0/0/3	105	E	5			
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											
MSM200	Lean digital manufacturing	BD CCH	5	150	2/0/1	105	E	5			
MSM222	Advanced additive manufacturing materials										
IND236	Organization and planning of scientific research	BD CCH	5	150	2/0/1	105	E	5			
IND251	Fundamentals of research activity										
MSM205	Digitization of machine-building production	BD CCH	5	150	2/0/1	105	E			5	
IND213	3D scanning and digitization										
CYCLE OF PROFILE DISCIPLINES (PD)											
M-2. Production digitalization module (university component, component of choice)											
MSM201	Virtual factory and Augmented reality production	PD UC	5	150	2/0/1	105	E	5			
MSM218	Digital design and modeling	PD UC	5	150	2/0/1	105	E	5			
MSM204	Technological processes of additive manufacturing	PD UC	5	150	2/0/1	105	E		5		
MSM206	Innovative processes of digitalization of machine-building production	PD UC	5	150	2/0/1	105	E			5	
MSM210 MCH244	CAE/PLM of machine-building production PLM/PDM processes	PD CCH	5	150	2/0/1	105	E			5	
MSM219 ISO246	Computer-integrated production Flexible production systems and complexes in mechanical engineering	PD CCH	5	150	2/0/1	105	E		5		
IND249 IND210	Actual problems of advanced scientific research Risk management in digital production	PD CCH	5	150	2/0/1	105	E		5		
MSM211 MSM216	Digital systems of machine-building production Additive Manufacturing operating systems	PD CCH	5	150	2/0/1	105	E			5	
MSM224 MSM223	Wear-resistant and hardening coatings Corrosion in mechanical engineering	PD CCH	4	120	2/0/1	75	Э			4	
UND225 IND229	Occupational health and safety of digital engineering production Production planning and control	PD CCH	5	150	2/0/1	105	E			5	

M-3. Practice-oriented module											
AAP229	Pedagogical practice	BD UC	6						6		
AAP256	Research practice	PD UC	4							4	
M-4. Experimental research module											
AAP251	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	2					2			
AAP241	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	3					3			
AAP254	Research work of a master's student, including internship and completion of a master's thesis	RWMS UC	5						5		
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	34	26

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		24	29	53
	Total for theoretical training:	0	44	44	88
	RWMS				24
FA	Final attestation	12			8
	TOTAL:	12	44	44	120

Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 3 or "27" 10 2022 y.

Decision of the Educational and Methodological Council of Kazntu named after K.Satpayev. Protocol № 2 or "21" 10 2022 y.

Decision of the Academic Council of the Institute E&ME. Protocol № 2 or "11" 10 2022 y.

Vice-Rector for Academic Affairs  B. A. Zhautikov

E&ME Institute Director  K. Yelemessov

ME Department Head  E. Nugman

Representative of the Council for EP from Employers  I. Dyusebaev