



APPROVED
 Chairman of the Management Board-
 Rector of Kazntu named after K.Satpayev
 M.M. Begentaev
 2023 y.

CURRICULUM
 of Educational Program on enrollment for 2023-2024 academic year
 Educational program 8D07113 - "Additive manufacturing"
 Group of Educational programs D103 - "Mechanics and metalworking"

Form of study: full-time Duration of study: 3 year Academic degree: Doctor of Philosophy (PhD)

Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	Classroom amount lec/lab/pr	SIS (including TESIS) 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	5 semester	6 semester	
CYCLE OF BASIC DISCIPLINES (BD)														
M-1. Technical training module (university component)														
MET322	Scientific research methods	BD UC	5	150	2/0/1	105	E	5						
LNG305	Academic writing	BD UC	5	150	0/0/3	105	E	5						
component of choice														
MSM307	Virtual production	BD CCH	5	150	2/0/1	105	E	5						
MSM306	Advanced Digital factory													
CYCLE OF PROFILE DISCIPLINES (PD)														
M-2. Additive manufacturing module (component of choice)														
MSM303	Advanced 3D nanoprinting technologies	PD CCH	5	150	2/0/1	105	E	5						
IND311	Advanced production systems	PD CCH	5	150	2/0/1	105	E	5						
IND313	Development of advanced control systems													
IND300	Digital production													
M-3. Practice-oriented module														
AAP350	Pedagogical practice	BD UC	10							10				
AAP355	Research practice	PD UC	10								10			
M-4. Experimental research module														
AAP336	Research work of a doctoral candidate, including internships and completion of a doctoral dissertation	RWDS UC	5					5						
AAP347	Research work of a doctoral candidate, including internships and completion of a doctoral dissertation	RWDS UC	40						20	20				
AAP356	Research work of a doctoral candidate, including internships and completion of a doctoral dissertation	RWDS UC	60								30	30		
AAP348	Research work of a doctoral candidate, including internships and completion of a doctoral dissertation	RWDS UC	18											18
M-5. Module of final attestation														
ECA303	Writing and defending a doctoral dissertation	FA	12											12
Total based on UNIVERSITY:								30	30	30	30	30	30	
								60	60	60	60	60		

Number of credits for the entire period of study					
Cycle code	Cycles of disciplines	Credits			Total
		university component (UC)	component of choice (CCH)		
BD	Cycle of basic disciplines	20	5		25
PD	Cycle of profile disciplines	10	10		20
	Total for theoretical training:	0	30	15	45
	RWDS				123
FA	Final attestation	12			12
	TOTAL:	12	30	15	180

Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 3 от "24" 10 2022 y.

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

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

Vice-Rector for Academic Affairs [Signature] B. A. Zhautikov

E&ME Institute Director [Signature] K. Yelemessov

ME Department Head [Signature] E. Nugman

Representative of the Council for EP from Employers [Signature] M. Azimbekov