



CURRICULUM
of Educational Program on enrollment for 2023-2024 academic year
Educational program 8D07114 - "Nanomaterials and Nanotechnology"
Group of educational programs D108 - "Nanomaterials and Nanotechnology"

Form of study: full-time

Duration of study: 3 year

Academic degree: Philosophy Doctor (PhD)

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	5 semester	6 semester				
CYCLE OF BASIC DISCIPLINES (BD)																	
M-1. Module of basic training (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																	
PHY316	Advanced structural technology hardening	BD CCH	5	150	2/0/1	105	E	5									
PHY319	Physics and technique of saving and renewable energy				2/0/1												
CYCLE OF PROFILE DISCIPLINES (PD)																	
M-2. Module of professional activity (component of choice)																	
PHY302	Physicochemical methods of materials research	PD CCH	5	150	2/0/1	105	E	5									
PHY320	Semiconductor heterostructures and devices based on them				2/0/1												
PHY318	Software for structuring materials	PD CCH	5	150	2/0/1	105	E	5									
PHY321	Computer simulation of engineering tasks				2/0/1												
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	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	5	25
PD	Cycle of profile disciplines		10	10	20
	<i>Total for theoretical training:</i>	<i>0</i>	<i>30</i>	<i>15</i>	<i>45</i>
	RWDS				<i>123</i>
FA	Final attestation	12			12
	TOTAL:	12	30	15	180

Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 5 "24" 11 2022 y.

Decision of the Educational and Methodological Council of Kazntu named after K.Satpayev. Protocol № 3 "17" 11 2022 y.

Decision of the Academic Council of the Institute M&M. Protocol № 2 "17" 10 2022 y.

Vice-Rector for Academic Affairs

Zhautikov B.A.

Director of M&M Institute

Rysbekov K.B.

Head of the MN&EP Department

Kudaibergenov K.K.

Specialty Council representative from employers

Serikkanov A.S.