



APPROVED  
Chairman of the Management Board-  
Rector of KazNTU named after K.Satbayev  
M. Begentaev  
2022 y.

CURRICULUM  
of Educational Program on enrollment for 2022-2023 academic

Educational program 7M07136 - "Аддитивное производство"  
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
<b>CYCLE OF BASIC DISCIPLINES (BD)</b>											
<b>M-1. Engineering training module (university component)</b>											
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			
<b>component of choice</b>											
MSM200	Lean digital manufacturing	BD CCH	5	150	2/0/1	105	E	5			
MSM222	Advanced additive manufacturing materials										
MCH203	Computer technologies of analysis and calculation	BD CCH	5	150	2/0/1	105	E	5			
MCH206	Methodology of creation and management of a single information space of an industrial enterprise										
ISO241	Advanced technologies in mechanical engineering	BD CCH	5	150	2/0/1	105	E			5	
IND202	Photonics and advanced laser systems and technologies										
<b>CYCLE OF PROFILE DISCIPLINES (PD)</b>											
<b>M-2. Additive manufacturing module (university component, component of choice)</b>											
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	CAE/PLM of machine-building production	PD, CCH	5	150	2/0/1	105	E			5	
MSM217	CAD/CAM/CAE/PLM additive manufacturing										
MSM209	Digital technologies of machine-building production	PD, CCH	5	150	2/0/1	105	E		5		
ISO246	Flexible production systems and complexes in mechanical engineering										
IND209	Multipurpose equipment in digital production	PD, CCH	5	150	2/0/1	105	E		5		
MCH264	Technological methods for improving the efficiency and reliability of technological support for automated production										
MSM208	Advanced additive manufacturing ergonomics	PD, CCH	5	150	2/0/1	105	E			5	
IND210	Risk management in digital production										
MSM207	Occupational health and safety of additive manufacturing	PD, CCH	5	150	2/0/1	105	E			5	
IND229	Production planning and control										
<b>M-3. Practice-oriented module</b>											
AAP229	Pedagogical practice	BD UC	6						6		
AAP256	Research practice	PD, CCH	4							4	
<b>M-4. Experimental research module</b>											
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		
<b>M-5. Module of final attestation</b>												
ECA205	Preparation and defense of a master's thesis	FA	12							12		
<b>Total based on UNIVERSITY:</b>									30	30	30	30

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		25	24	49
	<i>Total for theoretical training:</i>	<i>0</i>	<i>45</i>	<i>39</i>	<i>84</i>
	RWMS				24
FA	Final attestation	12			12
	<b>TOTAL:</b>	<b>12</b>	<b>45</b>	<b>39</b>	<b>120</b>


Decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 13 от "28" 04 2022г.

Decision of the Educational and Methodological Council of Kazntu named after K.Satpayev. Protocol № 7 от "21" 04 2022г.

Decision of the Academic Council of the Institute E&ME. Protocol № 5 от "20" 01 2022г.

Vice-Rector for Academic Affairs  B. A. Zhautikov

E&ME Institute Director  K. Yelemessov

ME, SC & M Department Head  M. Issametova

Representative of the Council for EP from Employers  I. Dyusebaev