



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

Educational program 6B07218 - "Technology of foundry production"
Group of educational programs B069 - "Production of materials (glass, paper, plastic, wood)"

Form of study: full-time		Duration of study: 4 years			Academic degree: Bachelor of Engineering and Technology										
Discipline code	Name of disciplines	Cycle	Total amount in credits	Total hours	classroom volume of lek/lab/p	SIS (including TESIS) in hours	Form of control	Allocation of face-to-face training based on courses and semesters							
								I course		II course		III course		IV course	
								1 semester	2 semester	3 semester	4 semester	5 semester	6 semester	7 semester	8 semester
CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)															
M-1. Module of language training															
LNG 108	English language	GED, RC	10	300	0/0/6	210	E	5	5						
LNG 104	Kazakh (Russian) language	GED, RC	10	300	0/0/6	210	E	5	5						
M-2. Module of physical training															
KFK 101-104	Physical Culture	GED, RC	8	240	0/0/8	120	Diferedit	2	2	2	2				
M-3. Module of information technology															
CSE 677	Information and communication technologies (in English)	GED, RC	5	150	2/1/0	105	E				5				
M-4. Module of socio-cultural development															
HUM 137	History of Kazakhstan	GED, RC	5	150	1/0/2	105	SE		5						
HUM 132	Philosophy	GED, RC	5	150	1/0/2	105	E				5				
HUM 120	Socio-political knowledge module (sociology, politology)	GED, RC	3	90	1/0/1	60	E				3				
HUM 134	Socio-political knowledge module (culturology, psychology)		5	150	2/0/1	150	E			5					
M-5. Module of anti-corruption culture, ecology and life safety base															
HUM 136	Fundamentals of anti-corruption culture	GED, CCH	5	150	2/0/1	150	E								
MNG 489	Fundamentals of economics and entrepreneurship														
HPP128	Scientific research methods														
CHE 656	Ecology and life safety														
CYCLE OF BASIC DISCIPLINES (BD)															
M-6. Module of physical and mathematical training															
MAT 101	Mathematics I	BD, UC	5	150	1/0/2	105	E	5							
PHY 468	Physics	BD, UC	5	150	1/1/1	105	E	5							
MAT 102	Mathematics II	BD, UC	5	150	1/0/2	105	E		5						
M-7. Basic general technical training module															
GEN 429	Engineering and computer	BD, UC	5	150	1/0/2	105	E	5							
PHY533	Fundamentals of materials science	BD, UC	4	120	2/1/0*	75	E	4							
CHE127	Physical chemistry	BD, UC	5	150	1/1/1*	105	E			5					
GEN 408	Strength of materials	BD, UC	5	150	1/1/1*	105	E				5				
M - 8. Materials Science Module															
PHY561	Mechanical properties of materials	BD, UC	6	180	2/1/1*	120	E				6				
PHY544	Application by chemical methods and study of the properties of the obtained thin films	BD, CCH	5	150	2/0/1/	105	E				5				
PHY495	Physics of Strength and Plasticity				1/1/1/										
PHY538	Metallography	BD, UC	5	150	2/1/0*	105	E				5				
PHY476	Mechanics of Materials	BD, UC	5	150	1/0/2*	105	E				5				
PHY545	Fundamentals of space materials	BD, CCH	5	150	2/0/1/	105	E				5				
PHY501	Defects in the Crystal Structure of Materials				1/1/1/										
PHY485	Fundamentals of Heat Treatment and Surface Hardening	PD, UC	5	150	1/1/1*	105	E							5	
PHY541	Functional materials	PD, UC	5	150	2/1/0*	105	E							5	
PHY542	Non Metallic Materials and Technologies	PD, UC	6	180	2/1/1*	120	E							6	
PHY543	Physics of semiconductor materials	PD, UC	4	120	2/1/0*	75	E						4		
PHY548	Physicochemical principles of coating	PD, CCH	4	120	2/0/1/	75	E						4		
PHY550	Fundamentals of laser ablation				1/1/1/										
PHY569	Fundamentals of designing foundries and factories	BD, CCH	6	180	2/1/1/	120	E							6	
PHY552	Dielectric materials				2/1/1/										
PHY553	Reactor Materials Science				2/1/1/										

PHY554	Physics of Low-Dimensional					2/1/1/												
PHY526	Methods for studying powder and	PD, CCH	5	150		1/1/1/	105	E					5					
PHY527	Methods for producing powder					1/1/1/												
PHY557	selection					1/1/1/												
PHY558	Methods for calculating phase diagrams	PD, CCH	5	150		1/1/1/	105	E								5		
M - 9. Foundry module																		
PHY562	Foundry technology	BD, UC	5	150		2/1/0*	105	E			5							
PHY563	Foundry basics	BD, UC	5	150		2/1/0*	105	E				5						
PHY564	Foundry production of ferrous and	BD, UC	5	150		2/1/0*	105	E				5						
PHY565	Design and production of cast parts	BD, UC	5	150		2/1/0*	105	E					5					
PHY496	Corrosion and anti-corrosion treatment	BD, CCH	5	150		2/0/1/	105	E				5						
PHY567	Calculation and design of foundry equipment					1/1/1/												
PHY571	Advanced casting methods	BD, UC	4	120		1/1/1*	75	E				4						
PHY566	Foundry equipment and machines	BD, UC	5	150		2/1/0*	105	E					5					
PHY568	Special types of casting	BD, CCH	5	150		2/0/1/	105	E					5					
PHY511	Computer Modeling in Materials Science (thermocalc)					1/1/1/												
PHY507	Fundamentals of Technology Processes of Manufacturing Materials	PD, CCH	5	150		1/1/1/	105	E					5					
PHY570	Automatic and complex mechanized lines for foundry production					2/0/1/												
PHY555	Probing methods on materials research	PD, CCH	6	180		2/1/1/	120	E					6					
PHY572	Injection molding equipment and technology					2/1/1/												
M - 10. Nanotechnology module																		
PHY502	Methods of structural analysis and Quality control methods	BD, CCH	5	150		1/1/1/	105	E					5					
PHY503	Methods of obtaining and research of nanostructured materials					1/0/2/												
PHY505	Methods of obtaining and research of nanostructured materials					2/0/1/												
PHY573	Equipment and technology of casting on gasified patterns	PD, CCH	5	150		1/1/1/	105	E					5					
PHY480	Technologies of obtaining nanomaterials and nanosystems					1/1/1/												
PHY587	Nanomaterials and nanotechnologies in construction	PD, UC	4	120		2/0/1*	75	E									4	
M - 11. R&D module																		
4006	Elective	PD, CCH	5	150		2/1/0*	105	E									5	
M - 12. Practice-oriented module																		
AAP179	Training Practice	BD, UC	2								2							
AAP143	Production practice I	PD, UC	2									2						
PET506	Production practice II	PD, UC	3										3					
M - 13. Module of final attestation																		
ECA108	Final attestation	FA	8														8	
M - 14. Module of additional types of training																		
AAP500	Military affairs	ATT	0															
Total based on UNIVERSITY:											31	29	28	32	29	31	33	27
											60	60	60	60	60	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	51		5	56
BD	Cycle of basic disciplines		81	31	176
PD	Cycle of profile disciplines		25	39	
<i>Total for theoretical training:</i>		51	106	75	232
FA	Final attestation	8			8
TOTAL:					240

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

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