



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

Educational program 7M06102 - "Machine Learning & Data Science"  
Group of educational programs M094 - "Information technologies"

Form of study: full-time		Duration of study: 2 year				Academic degree:					
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. Module of basic training (university component)</b>											
LNG210	English (professional)	BD UC	5	150	0/0/3	105	E	5			
<b>M-2. Humanities module (university component)</b>											
HUM214	Psychology of management	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>M-3. Software module</b>											
CSE737	Fundamentals of Neural Networks	BD CU	5	150	2/0/1	105	E	5			
CSE754	Computer Architecture & Concurrency										
CSE243	Virtual Reality Systems	BD CU	5	150	1/0/2	105	E	5			
CSE752	Computer vision										
CSE239	Multiagent Systems	BD CU	5	150	2/0/1	105	E			5	
CSE755	Theory of Complexity & Computations										
<b>CYCLE OF PROFILE DISCIPLINES (PD)</b>											
<b>M-4. Research activity module</b>											
CSE770	Methodology of scientific research and innovation	PD CU	5	150	2/0/1	105	E	5			
<b>M-5. Module of specialized training in computer systems</b>											
CSE706	Ecosystem Modeling	PD CU	5	150	2/0/1	105	E	5			
CSE227	BigData Processing applications	PD CU	5	150	2/0/1	105	E	5			
CSE256	Applied Word Processing	PD CU	5	150	2/0/1	105	E			5	
CSE761	Natural language processing	PD CU	5	150	2/0/1	105	E			5	
CSE762	Digital Image Processing										
CSE756	QA/QC and Continuous Integration	PD CU	5	150	2/0/1	105	E		5		
CSE757	Big Data Storage Systems and Computations										
<b>M-6. Machine Learning Core Training Module</b>											
CSE758	Machine Learning & Deep Learning	PD CU	5	150	2/0/1	105	E		5		
CSE213	Cloud technologies				1/1/1						
CSE265	Advanced Python	PD CU	5	150	2/0/1	105	E			5	
CSE702	Python for Genomic Data Science										
CSE263	Fundamentals of Artificial Intelligence	PD CU	5	150	2/0/1	105	E			5	
CSE284	Applied Machine Learning and Deep Learning										
<b>M-7. Practice-oriented module</b>											
AAP229	Pedagogical practice	BD UC	6						6		
AAP269	Research practice	PD, CCH	8								8
<b>M-8. Experimental research module</b>											
AAP251	Research work of a master's	RWMS	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	RWMS	14								14
<b>M-5. Module of final attestation</b>											
ECA205	Preparation and defense of a master's thesis	FA	8								8
<b>Total based on UNIVERSITY:</b>								30	30	30	30
								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	15	35
PD	Cycle of profile disciplines		24	25	49
	<i>Total for theoretical training:</i>	<i>0</i>	<i>44</i>	<i>40</i>	<i>84</i>
	RWMS				24
FA	Final attestation	12			8
	<b>TOTAL:</b>	<b>12</b>	<b>44</b>	<b>40</b>	<b>116</b>

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

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

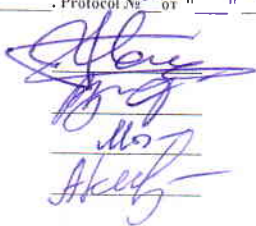
Decision of the Academic Council of the Institute \_\_\_\_\_ . Protocol № 2 от "09" 09 2022 y.

Vice-Rector for Academic Affairs

Director of the Institute AaIT

Department head SE

Employers Council Representative



B.A. Zhaulikov

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