



MAJOR CURRICULUM for 2021-2022 academic year admission

Educational program 6B06102 - "Computer Science"

Group of Educational programs B057- "Information technology"

TRAJECTORY OF LEARNING: SE-Software Engineering, AI-Artificial Intelligence, IS-Information Systems

Full-time study

Study duration : 4 years

Academic degree: Bachelor in Information and Communication Technologies on the educational program "6B06102 Computer Science"

Year of study	Code	Trajectory	Name of discipline	cycle	Academic credits	total hours	lec/ lab/ pr	ISW (including ISWT), in hours	prerequisites
1st semester (autumn 2021)									
1	LNG108		English language	G	5	150	0/0/3	105	Diagnos.test
	LNG104		Kazakh (Russian) language	G	5	150	0/0/3	105	Diagnos.test
	HUM100		Contemporary history of Kazakhstan (state exam)	G	5	150	1/0/2	105	
	PHY111		Physics I	B	5	150	1/1/1	105	
	MAT101		Mathematics I	B	5	150	1/0/2	105	
	CSE624		Introduction to the Specialty - Computer Science	B	5	150	1/1/1	105	
	HUM128		Political science	G	2	60	1/0/0	45	
	KFK101		Physical education I	G	2	60	0/0/2	30	
Total:					34		21		
2nd semester (spring 2022)									
1	LNG108		English language	G	5	150	0/0/3	105	
	LNG104		Kazakh (Russian) language	G	5	150	0/0/3	105	
	GEN177		Engineering and computer graphics	B	5	150	1/1/1	105	
	PHY112		Physics II	B	5	150	1/1/1	105	PHY111
	MAT102		Mathematics II	B	5	150	1/0/2	105	MAT101
	HUM129		Culturology	G	2	60	1/0/0	45	
	CSE155		Algorithmization and Programming	B	5	150	1/1/1	105	CSE624
	KFK102		Physical education II	G	2	60	0/0/2	30	
Total:					34		21		
3rd semester (autumn 2022)									
2	CSE677		Information and Communication Technologies (eng)	G	5	150	2/1/0	105	
	MAT103		Mathematics III	B	5	150	1/0/2	105	MAT102
	HUM127		Sociology	G	2	60	1/0/0	45	
	CHE452		Ecology and Sustainable Development	G	2	60	1/0/0	45	
	CSE500	IS	Information System Infrastructure	B	5	150	1/1/1	105	
	CSE662	SE	Introduction to Web programming						CSE155
	CSE678		Algorithms and Data Structures	B	5	150	1/1/1	105	
	CSE679		Databases	B	5	150	1/1/1	105	CSE155
KFK103		Physical education III	G	2	60	0/0/2	30		
Total:					31		19		
4th semester (spring 2023)									
2	HUM132		Philosophy	G	5	150	1/0/2	105	
	HUM122		Psychology	G	2	60	1/0/0	45	
	MNG487		Fundamentals of Entrepreneurship, Leadership and Anti-corruption culture	G	3	90	1/0/1	60	
	CHE451		Life safety	G	2	60	1/0/0	45	
	CSE680		Algorithms	B	5	150	1/1/1	105	CSE164
	ELC500		Microelectronics	B	5	150	2/1/0	105	
	CSE122		Computer Networks	B	5	150	2/1/0	105	CSE616
	CSE676		Computer Architecture and Concurrency	B	5	150	1/1/1	105	CSE195
CSE127		Object oriented programming	B	5	150	1/1/1	105	CSE164, MA101	
KFK104		Physical education IV	G	2	60	0/0/2	30		
Total:					39		24		
5th semester (autumn 2023)									
3	1010		Elective	B	5	150	2/1/0	105	
	1011		Elective	B	5	150	2/1/0	105	
	1012		Elective	B	5	150	2/1/0	105	
	1013		Elective	B	5	150	2/1/0	105	
	1014		Elective	P	5	150	2/1/0	105	
	1015		Elective	P	5	150	2/1/0	105	
	Total:					30		18	
6th semester (spring 2024)									
3	CSE636		Mobile Programming	B	5	150	1/1/1	105	CSE127
	CSE458		Computer vision	B	5	150	1/1/1	105	
	1016		Elective	P	5	150	2/1/0	105	
	1017		Elective	P	5	150	2/1/0	105	
	1018		Elective	P	5	150	2/1/0	105	
	Total:					25		15	
7th semester (autumn 2024)									
4	1019		Elective	P	5	150	2/1/0	105	
	1020		Elective	P	5	150	2/1/0	105	
	1021		Elective	P	5	150	2/1/0	105	
	1022		Elective	P	5	150	2/1/0	105	
	Total:					20		12	
8th semester (spring 2025)									
4	1023		Elective	P	5	150	2/1/0	105	
	1024		Elective	P	5	150	2/1/0	105	
	ECA003		Preparation and writing of the thesis (project)	FA	6				
ECA103		Graduate thesis (project) defense	FA	6					
Total:					22		6		

Year of study	Code	Names	Cycle	Credits	Semester
Compulsory training with P / NP grading					
1	AAP101	Educational practice	B	2	2
2	AAP109	Industrial internship I	P	2	4
3	AAP114	Industrial internship II	P	3	6
Additional types of training					
1	AAP107	Sports club sectional	G	0	5-7
2-3	AAP500	Military training	G	0	3-6

Cycle of disciplines	Credits		
	compulsory	elective	Total
Cycle of general disciplines (G)	58	0	58
Cycle of basic disciplines (B)	2	110	112
Cycle of special disciplines (S)	5	55	60
Total for theoretical training:			65 165 230
Final certification (FA)	12	0	12
Total:			77 165 242
TOTAL:			242

Decision of the Academic Council of KazNRTU named after K. Satpayev. Minutes № 3, dated "25.06.2021"

Decision of the Academic Council of the Institute of Cybernetics and information technologies. Minutes № 6, dated "14.06.2021"

Vice-Rector for Academic Affairs

B.A. Zhautilov

Director of the Institute C&IT

Head of the Department SE

M. Turdalyuly

Representative of the Specialty Council from employers

A.A. Pak