

CONTENT OF THE EDUCATIONAL PROGRAM

No.	Code and name of modules	Total number of credits	No.	Code and name of the discipline	Academic credit of the discipline	Cycle/ component
1	GES-1 General education module	36	1	GES 101 History of Kazakhstan	5	CG/CC
			2	GES 202 Philosophy	5	CG/CC
			3	GES 103 Social and Political Knowledge Module (Sociology, Cultural Studies, Political Science, Psychology)	8	CG/CC
			4	GES 1(2)04 Physical Education	8	CG/CC
			5	GES 205 Information and Communication Technologies	5	CG/CC
			6	GES 106/1 Fundamentals of Legal Literacy and Anti-Corruption Culture GES 106/2 Fundamentals of Economics and Entrepreneurship GES 106/3 Foundations of Leadership and Receptivity to Innovation GES 106/4 Emotional Intelligence GES 106/5 Fundamentals of Mathematical Statistics GES 106/6 Ecology and Sustainable Development GES 106/7 Financial Literacy GES 106/8 Fundamentals of Ecology and Life Safety	5	CG/OC
2	GLC -2 Language communication	25	1	GLC 101 Kazakh (Russian) language	10	CG/CC
			2	GLC 102 Foreign Language	10	CG/CC
			3	GLC 203/1 English for Academic Purposes	5	CC/ OC
				GLC 203/2 Academic Writing		

3	GER-3 Inclusive education and research	14	1	GER 201 Inclusive Education	4	CC/UC
			2	GER 402 Fundamentals of Scientific Research	10	CC/UC
4	MFC-4 Mathematical foundations of computer science	14	1	MFC 101 Higher Mathematics	5	CC/UC
			2	MFC 201/1 Discrete Mathematics in programming MFC 201/2 Probability Theory and Mathematical Statistics	4	CC/OC
			3	MFC 301 Decision Theory	5	CC/UC
5	TP-5 Technologies programming	30	1	TP 101 Introduction to the specialty (Information systems software)	5	CC/UC
			2	TP 102 Algorithmization and programming languages	6	CC/UC
			3	TP 203 Programming Technology	5	CC/UC
			4	TP 304/1 Object-Oriented Programming TP 304/2 Visual programming	5	MC/OC
			5	TP 305/1 Java Programming TP 305/2 Programming in Python	5	MC/OC
			6	TP 106 Educational practice	2	CC/UC
			7	TP 207 Educational practice	2	CC/UC
6	DPT-6 Data processing technologies	23	1	DPT 201 Databases in Information Systems	4	CC/UC
			2	DPT 302/1 Development of corporate information systems using SQL DPT 302/2 Development of corporate information systems using Oracle	5	MC/OC
			3	DPT 303 Machine Learning	5	CC/UC
			4	DPT 304/1 BigData Technologies and Cloud Computing DPT 304/2 Analytics and data processing in BigData	5	CC/OC

			5	DPT 405 Data Management in Information Systems	4	CC/UC
7	SNS-7 Systems, Networks and Security	13	1	SNS 201/1 Operating systems	4	MC/OC
				SNS 201/2 Fundamentals of Organization operating systems		
			2	SNS 202 Computer Networks	5	CC/UC
			3	SNS 303 Information Security and Data Protection	4	MC/OC
8	DIA-8 Digital technologies and applications of IP	27	1	DIA 201/1 Computer Graphics	4	CC/OC
				DIA 201/2 3D modeling		
			2	DIA 301/1 Web technologies	6	CC/OC
				DIA 301/2 WEB Application Programming		
			3	DIA 302/1 Development of mobile applications for Android	6	MC/OC
				DIA 302/2 Development of mobile applications for IOS		
			4	DIA 303/1 Robotic systems	5	CC/UC
			5	DIA 305 Production practice	4	CC/UC
9	BPM-9 Business Process Modeling	35	6	P(P)P 406 Pre-graduation (industrial) practice	2	CC/UC
			1	BPM 201 IT infrastructure	5	CC/UC
			2	BPM 202 Software Development Tools	4	CC/UC
			3	BPM 303/1 Computer modeling of processes	5	MC/OC
				BPM 303/2 Modeling of technological processes		
			4	BPM 404 IT Project Management	5	MC/UC
			5	BPM 405 Industrial Internship	11	MC/UC
10	(M)AIN (Minor) Artificial Intelligence and Neural Networks	15		(M)AIN 401/1 Artificial neural networks	5	CC/OC
				(M)AIN 402/2 Artificial Intelligence System		
				(M)AIN 403/3 Programming of intelligent systems		
11	WDDP(P)PCE Final assessment module	8	1	WDDP(P)PCE 401 Writing and defending a thesis (project) or preparing and	8	FA

				passing a comprehensive exam		
TOTAL:		240			240	