

## 2. CONTENT OF THE EDUCATIONAL PROGRAM

№	Code and name of modules	Total credits by module	№	A Name of subject and code	Credits by subjects	Cycle/component
1	<b>GES -1</b>  <b>General educational subjects module</b>	<b>36</b>	1	<b>GES 101</b> History of Kazakhstan	5	GC/ CC
			2	<b>GES 102</b> Philosophy	5	GC/ CC
			3	<b>GES 103</b> Social and Political Knowledge Module (Sociology, Cultural Studies, Political Science, Psychology)	8	GC/ CC
			4	<b>GES 1(2)04</b> Physical Culture	8	GC/ CC
			5	<b>GES 205</b> Information and Communication Technologies	5	GC/ CC
			6	1. <b>GES 106/1</b> Fundamentals of Legal Literacy and Anti-Corruption culture / 2. <b>GES 106/2</b> Fundamentals of Ecology and Safe life / 3. <b>GES 106/3</b> Fundamentals of Economics and Entrepreneurship / 4. <b>GES 106/4</b> Fundamentals of Leadership and receptivity to innovation / 5. <b>GES 106/5</b> Emotional Intellect 6. <b>GES 106/6</b> Fundamentals of mathematical statistics	5	GC/ OC
2	<b>GLC -2</b>  <b>Language communication module</b>	<b>25</b>	1	<b>GLC 101</b> Kazakh (Russian) Language	10	GC/ CC
			2	<b>GLC 102</b> Foreign Language	10	GC/ CC
			3	<b>GLC 203</b> English for Academic Purposes	5	CC/ UC
3	<b>GER – 3</b>	<b>22</b>	1	<b>GER 201</b> Inclusive Education	6	CC/ UC

	<b>Global Ethics and Research module</b>		2	<b>GER 402/1</b> Fundamentals of Educational research	10	CC/ UC
			3	<b>GER 303</b> Professional ethics and identity	6	MC/ UC
4	<b>GPS – 4</b> <b>General pedagogical subjects module</b>	19	1	<b>GPS 201</b> Educational psychology	6	CC/ UC
			2	<b>GPS 202</b> Pedagogy and didactic	6	CC/ UC
			3	<b>GPS 303</b> Criteria Assessment Technology	5	CC/ UC
			4	<b>CT(I)P 104</b> Continuous training (introductory) practice	1	CC/ UC
			5	<b>C(PP)P 205</b> Continuous (psychology and pedagogical) practice	1	CC/ UC
	<b>FT-5</b> Fundamental Training	15	1	<b>FT 101</b> Higher mathematics	4	CC/ UC
			2	<b>FT 202/1</b> Physics	5	CC/ CC
				<b>FT 202/2</b> Bases of Electronics		
			3	<b>FT 203/1</b> Computer Architecture and Operating Systems	6	CC/ CC
				<b>FT 203/2</b> Computer Hardware		
	<b>TP-6</b> Programming Technologies	25	1	<b>TP 101</b> Fundamentals of Algorithmization nad Programming Modul (Theoretical foundations of computer science,)	3	CC/ UC
			2	<b>TP 102</b> Fundamentals of Algorithmization nad Programming Modul (Programming)	4	CC/ UC
			3	<b>TP 203/1</b> Programming Computer Games	5	CC/ CC
				<b>TP 203/2</b> Languages and Technologies of Programming		
			4	<b>TP 204</b> Object-Oriented Programming	5	CC/ UC
			5	<b>TP 205/1</b> Methods of Programming Robots	6	CC/ CC
				<b>TP 205/2</b> Arduino Programming		

		6	<b>CT(I)P 105</b> Training (programming) practice	1	CC/ UC
		7	<b>C(PP)P 206</b> Training (programming) practice	1	CC/ UC
<b>NTDP-7</b> Network Technologies and Data Processing	23	1	<b>NTDP 301/1</b> Computer Networks	6	CC/ CC
			<b>NTDP 301/2</b> Cloud Technologies		
		2	<b>NTDP 402/1</b> Web technologies	6	MC/ CC
			<b>NTDP 402/2</b> IoT Technologies		
		3	<b>NTDP 303/1</b> Working with databases in Python	5	CC/ CC
			<b>NTDP 303/2</b> Databases and information systems		
		4	<b>NTDP 404 /1</b> Information security	6	MC/ CC
			<b>NTDP 404/2</b> Software and Data Security		
<b>SE – 8</b> STEM-Education	27	1	<b>SE 301/1</b> Computer Graphics	6	CC/ CC
			<b>SE 301/2</b> Basics of computer modeling		
		2	<b>SE 302</b> Robotics in education	5	MC/ UC
		3	<b>SE 303</b> Virtual Robotics	6	MC/ UC
		4	<b>SE 304/1</b> Fundamentals of intelligent systems	5	CC/ CC
			<b>SE 304/2</b> Introduction to Artificial Intelligence		
		5	<b>SE 305/1</b> Circuitry	5	CC/ CC
			<b>SE 305/2</b> Integrated and microprocessor circuitry		
<b>SQSCSC – 9</b>	40	1	<b>SQSCSC 301</b> Methodology of Teaching Informatics	10	MC/ UC

Selected Questions in  
the School Computer  
Science Course

Final certification

**TOTAL:**

2	<b>SQSCSC 402/1</b> Programming Olympiad tasks	6	MC/ CC
	<b>SQSCSC 402/2</b> Scientific Bases of a School Course of computer science		
3	<b>PP 3**</b> Pedagogical Practice	6	CC/ UC
4	<b>P(P)P 4**</b> Production (pedagogical) practice	16	MC/ UC
5	<b>P(P)P 4**</b> Pre -diploma (pedagogical) practice	2	MC/ UC
8	1 <b>WDDP(P)PCE 4**</b> Writing and defending a diploma paper (project) or passing a comprehensive exam	8	FA
<b>240</b>		<b>240</b>	