



**Institute of Automation and Information Technologies  
Department of Higher Mathematics and Modeling**

## **EDUCATIONAL PROGRAM**

### **8D06104 Cybernetics and artificial intelligence**

Code and classification of the field of education: 8D06 Information and  
Communication Technologies

Code and classification of training directions: 8D061 Information and  
Communication Technologies

Group of educational programs: D094 Information Technologies

Level based on NQF:8

Level based on IQF:8

Study period: 3 years








Amount of credits:180

**Almaty 2025**

Educational program 8D06104 «Cybernetics and artificial intelligence» approved at the meeting of the Academic Council of KazNRTU named after K.I. Satpayev.  
Protocol No.10 of "06" March 2025 year.

Considered and recommended for approval at the meeting of the Educational-Methodical Council of KazNRTU named after K.I. Satpayev.  
Protocol No. 3 of "20" December 2024 year.

Educational program 8D06104 «Cybernetics and artificial intelligence» developed by the academic committee for the direction 8D061 "Information and communication technologies".

Name and surname.	Degree Academic title	Position	Place of work	Sign
Chairman of the Academic Committee:				
Tulesheva Gulnara Alipovna	Candidate of Physical and Mathematical Sciences, Associate Professor	Head of Department	KazNRTU named after. K.I. Satpayev	
Academic Committee members:				
Sakabekov Auzhan Sakabekovich	Doctor of Physical and Mathematical Sciences, Professor	Professor	KazNRTU named after. K.I. Satpayev	
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Azhibekova Aliya Saparbekovna		Senior Lecturer	KazNRTU named after. K.I. Satpayev	
Employers:				
Viktor Valerievich Verbovskiy	Doctor of Physical and Mathematical Sciences, Professor	Deputy General Director for Science	RSE "Institute of Mathematics and Mathematical Modeling"	
Students:				
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## General information

№	Field name	Comments
1	Code and classification of the field of education	8D06 Information and Communication Technologies
2	Code and classification of training directions	8D061 Information and Communication Technologies
3	Educational program group	D094 Information Technologies
4	Educational program name	8D06104 Cybernetics and artificial intelligence
5	Short description of educational program	<p>The educational program belongs to engineering specialization. It is aimed at providing basis and professional courses with due competence to students.</p> <p>The tasks and content of the program are described in Section 7 of the document: «Description of the courses».</p> <p>The specialization is created with the focus on training competitive professionals in computer science and information technologies, which will possess the valuable knowledge in such future technologies as artificial intelligence and hence will be distinguished on the international IT market.</p> <p>Students will study the main methods of artificial intelligence on simple handy problems and get the mathematical foundation of machine learning and artificial intelligence. The main idea of this program consists in modelling the intellectual activity by means of computers. Completing the program, students will have the knowledge of working machine learning algorithms and will be able to implement these skills in solution of various (theoretical or applied) problems. After successful completion of the program the students will be graduated the «bachelor» degree.</p> <p>The education process presumes an active research work, participation in research projects supervised by leading specialists in priority scientific areas, and internship in foreign high-profile scientific and educational institutions. Some classes will get lectures by invited professors from Germany, France, Slovenia, etc.</p> <p>For students to acquire competitive skills, the program includes innovative courses that cover all necessary areas from Mathematics, Data Science, Data Engineering and Quantitative Analysis (in Python and R languages).</p>
6	Purpose of EP	The curriculum program is created with the focus on training competitive professionals in computer science and information technologies, which will possess the valuable knowledge in such future technologies as artificial intelligence and hence will be distinguished on the international IT market.
7	Type of EP	New EP
8	The level based on NQF	8
9	The level based on IQF	8
10	Distinctive features of EP	no
11	Education form	Full-time
12	Period of training	3 years

13	Amount of credits	180
14	Languages of instruction	Kazakh, Russian, English
15	Academic degree awarded	Doctor of Philosophy PhD
16	Developer(s) and authors	Lukpanova L.H., Tulesheva G.A