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

EDUCATIONAL PROGRAM

6B06103 Mathematical and computer modeling

Code and classification of the field of education: 6B06 Information and Communication Technologies
Code and classification of training directions: 6B061 Information and Communication Technologies
Group of educational programs: B057 Information technologies
Level based on NQF: 6
Level based on IQF: 6
Study period: 4 years
Amount of credits: 240

Almaty 2025

Educational program 6B06103 «Mathematical and computer modeling» was approved at the meeting of K.I. Satbayev KazNRTU Academic Council Protocol No. 10 of 06.03.2025 year.

Was reviewed and recommended for approval at the meeting of K.I. Satbayev KazNRTU Educational and Methodological Council Protocol No. 3 of 20.12.2024 year.

Educational program 6B06103 «Mathematical and computer modeling» was developed by Academic committee based on direction «Information technologies».

Full name	Academic degree/ academic title	Position	Workplace	Signature
Chairman of the Academic Committee:				
Tulesheva Gulnara Alipovna	Candidate of Physical and Mathematical Sciences/Assistant professor	Head of Department of «Higher Mathematics and Modeling»	NCJS «KazNRTU named after K.I. Satbayev»	
Teaching staff:				
Auzhan Sakabekov	Doctor of Physics and Mathematics / Professor	Professor	NCJS «KazNRTU named after K.I. Satbayev»	
Yergazina Ryskul Amirtaevna		Senior Lecturer	NCJS «KazNRTU named after K.I. Satbayev»	
Employers:				
Verbovsky Victor Valerievich	Doctor of Physics and Mathematics / Professor	Deputy Director General	RSE" Institute of mathematics and mathematical modeling"	
Students:				
Bulekpayev Zhunisbek		2rd year student of EP 6B06103 "Mathematical and computer modeling"	NCJS «KazNRTU named after K.I. Satbayev»	
Arkenov Ruslan		2rd year student of EP 6B06103 "Mathematical and computer modeling"	NCJS «KazNRTU named after K.I. Satbayev»	

General information

№	Field name	Comments
1	Code and classification of the field of education	6B06 Information and communication technologies
2	Code and classification of training directions	6B061 Information and communication technologies
3	Educational program group	B057 Information technologies
4	Educational program name	6B06103 Mathematical and computer modeling
5	Short description of educational program	6B06103 Mathematical and computer modeling is aimed at teaching students general education, basic and specialized disciplines with the achievement of appropriate competencies. The OP is based on the state educational standard for higher professional education; on the professional standard. The educational program is designed to train specialists in the field of mathematical and computer modeling of various processes and complex systems, to master competitive knowledge and the opportunity to apply it to create new methods and knowledge in mathematical and computer modeling of three-dimensional objects, and to solve applied problems arising in physics, chemistry, biology, economics, etc. Specialists will also be able to simulate various tasks arising in theoretical computer science. The content of the disciplines of the educational program has been developed taking into account the relevant educational programs of the world's leading universities, the international classifier of professional activity in the field of information and communication technologies. Graduates of the educational program 6B06103 "Mathematical and computer modeling" are focused on the formulation of a mathematical problem, model construction and implementation through computer technology, as well as the application of acquired knowledge in the analysis of various problems arising in the field of physics, economics, finance, biology, computer science and engineering. The educational program ensures the application of an individual approach to students, the transformation of professional competencies from professional standards and qualification standards into learning outcomes. Student–centered learning is provided - the principle of education, which assumes a shift in emphasis in the educational process from teaching (as the main role of the teaching staff in the "translation" of knowledge) to teaching (as an active educational activity of the student).
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	6
9	The level based on IQF	6
10	Distinctive features of EP	No
11	Education form	Full-time
12	Period of training	4 years
13	Amount of credits	240
14	Languages of instruction	Kazakh, Russian, English
15	Academic degree awarded	Bachelor's Degree in Information and Communication Technology
16	Developer(s) and authors	Candidate of Physical and Mathematical Sciences Tulesheva G.A., Doctor of Physical and Mathematical Sciences Sakabekov A., senior lecturer Ergazina R.A.