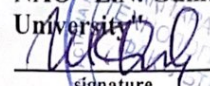
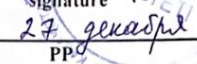


I approve the Dean of the Faculty
of Information Technologies of the
NAO "L.N. Gumilev Eurasian National
University"


signature Seilov Sh. Zh.


27.06.2022 г.
PP

ENU Graduate Model

according to OP 8D06306 (doctoral program)
«Information security systems»
(L.N. Gumilyov Eurasian National University)

Astana, 2022 g.

The model of the graduate of the ENU L.N. Gumilyov

The ENU graduate model according to **OP 7M06306 "Information security systems"** is the competencies, knowledge, skills and abilities of a graduate, the result of training at the bachelor's degree level, obtained as a result of studying theoretical and practical aspects of information security, including information security methods, information security systems, cryptography, inter-network security, information security audit, management risks , etc.

As a result of studying under this program, graduates should acquire knowledge and skills to solve problems in the field of information security, be ready to work in the field of IT technologies, taking into account the requirements and standards of information security.

The graduate model for OP 8D06306 "Information Security Systems" is defined taking into account the mission, vision and values of the University. The graduate model is used to develop educational programs (hereinafter referred to as EP) and is a framework characteristic of the graduate's abilities in the direction of training and levels of education, guaranteeing the success of the graduate's professional activities.

The competencies adopted by the university, which graduates should have their goals are set out in Table 1.

Table 1-Types of competencies

Types of competencies	Objective
Universal	<ul style="list-style-type: none"> - Contribute to the advancement in the academic and professional context of the technological, social, or cultural development of a knowledge-based society; - Demonstrate a systematic understanding of the field of information protection, mastery of research methods and skills, and justification for the choice of information protection decision-making methodology.
General vocational	<ul style="list-style-type: none"> - Critically analyze, evaluate, and synthesize new and complex ideas applied to information control and protection, and develop a proposal for improving them and making them more effective; - Demonstrate the ability to think, design, implement, and adapt a substantial research process with a scientific approach to find solutions to models and methods of data mining, machine learning, computational complexity theories, and optimization. - Communicate their knowledge and accomplishments to colleagues, the scientific community, and the general public; - Formulate innovative scientific problems and in the design and development of systems information security systems design; - Conduct research on information security management models and methods; Apply modern technology in solving information security problems and use the results in their professional activities; - Justify obtained scientific results in the field of information security before the general scientific community, convincing opponents and observing scientific ethics of a researcher. Communicate their knowledge and achievements to colleagues, the scientific community, and the general public.

Professional	<ul style="list-style-type: none"> - Evaluate their own and known research and prepare analyses to develop strategic decisions in the field of IS; - Develop information security management systems, software to implement original innovative projects using the latest technological solutions; - Critically analyze, evaluate and improve technological processes, develop new solutions, specifications and design of information security systems, as well as apply methods Systematically analyze scientific results in science and education; - Analyze, evaluate, and improve technological processes, develop special Analyze, evaluate, and improve technological processes, develop specifications, and design information security systems; - Analyze scientific problems and prepare publications based on the results of completed research, Analyze research problems, prepare national and international newsworthy publications, scientific and technical reports, and patents; - Evaluate the security organization of computer networks, cryptographic strength of ciphers, cipher synthesis, encryption systems, and test the security of systems and applications.
--------------	---

- These competencies must be implemented in the EP so that graduates can:
- use modern communication tools and technologies;
 - demonstrate the skills required for independent analysis of scientific problems and processes, critically rethink accumulated experience and knowledge;
 - identify and formulate problems, plan and use appropriate methods to conduct
 - conduct critical, scientific analysis and synthesis, review and evaluation of complex new phenomena, problems and situations;
 - Demonstrate the skills necessary to conduct scientific research independently;
 - form research skills in a particular scientific field, analyze existing methods and tools used to control and protect information, develop suggestions for their improvement, apply methods of objective analysis of scientific results in the field of science and education. Observe the norms of scientific ethics, legal norms, to counteract corruption;
 - Evaluate the organization of computer network security, crypto stability of block ciphers, cipher synthesis, encryption systems with public keys, test secure systems;
 - analyze and evaluate, improve technological processes, develop specifications and design information security systems, and apply methods of objective analysis of scientific results in science and education;
 - develop information security management systems, software for the implementation of innovative projects using the latest technological solutions;
 - analyze scientific problems and prepare publications worthy of national and international coverage, scientific and technical reports, reviews based on the results of the research performed.

Professional competencies of a graduate are defined in accordance with professional standards and requirements of employers on EP aimed at results, as well as take into account the specific content of the educational program.

Model of a graduate of the L.N. Gumilyov ENU on EP 8D06306 "Information security systems" (doctoral studies) approved at the meeting of the department "Information security" from "21" October 2022, Minutes № 20

Head of the Department



D.Zh. Satybalдина