



**«APPROVED»**

**Member of the Board – Vice Rector  
for Academic Affairs**

**NJC «Al-Farabi KazNU»**

**Kazmagambetov A.G.**

**2025**

**The program of  
the entrance exam for the group of educational programs of the Faculty of  
Physics and Technology Bachelor's degree  
for foreign citizens to study on a paid basis**

**1. General Provisions**

1.1 The program was drawn up in accordance with the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018, No. 600 «On approval of the Model Regulations for admission to studies in educational organization, implementing educational programs of technical and vocational education» (hereinafter – the Standard Rules).

1.2 Entrance exams for bachelor's degree programs consist of two stages:

- ✓ At the first stage, foreign applicants take a test on general education subjects on the respective platform.
- ✓ At the second stage, they undergo testing to determine their proficiency level in the language of instruction.

1.3 The entrance exams are conducted in the form of testing for the following groups of educational programs:

- ✓ 6B05304 – Physics
- ✓ 6B05306 – Physics and Astronomy
- ✓ 6B05305 – Physics and nanotechnology
- ✓ 6B05303 – Technical physics
- ✓ 6B05302 – Cyberphysics
- ✓ 6B06201 – Radio engineering, electronics, and telecommunications
- ✓ 6B07105 – Materials science and technology of new materials
- ✓ 6B07109 – Industrial electronics and control systems
- ✓ 6B07107 – Electric Power Engineering
- ✓ 6B07112 – Thermal power engineering
- ✓ 6B07501 – Standardization and certification (by industry)
- ✓ 6B07114 – Nuclear Engineering

1.4 In case an international applicant is unable to come to the University to take the entrance exam in the form of testing, they have the opportunity to take it online.

1.5 Selection for admission of international applicants to bachelor's degree programs through testing is assessed on a 100-point scale.

1.6 Following the entrance exam for bachelor's degree programs, a test results sheet is compiled in the established format, which is signed by the management of the Office of

Internationalization and Recruitment of Foreign Students.

1.7 Appeals regarding the results of the testing are allowed within 24 hours.

1.8 By the order of the rector of the Al-Farabi KazNU, an appeal commission is created for the period of examinations. The appeal commission for the admission of a foreign applicant to KazNU includes employees of the Department of Internationalization and Recruitment (hereinafter referred to as DIR) and the teaching staff of KazNU.

1.9. The decision on admission is reviewed by the competition commission for the enrollment of international applicants and is documented by a protocol through the "Salem office" system.

1.10. Retaking the entrance exam is not allowed.

## **2. Conducting the entrance exam in 2025**

2.1 Testing is conducted in Russian, Kazakh and English, with the inclusion of questions on the relevant core subjects (physics/mathematics) within the framework of the comprehensive school program (bachelor's degree programs on the website <https://welcome.kaznu.kz/ru/26848/page>).

2.2 An indicative list of topics for entrance exams in the format of testing:

1. Mechanical motion.
2. Relativity of motion.
3. Speed and acceleration.
4. Circular motion.
5. Fundamentals of dynamics.
6. Mass. Forces. Gravitational forces.
7. Galileo's principle of relativity.
8. Laws of conservation in mechanics.
9. Mechanical work. Power.
10. Pressure.
11. Pascal's law for liquids and gases.
12. Electrification. Electrical charge.
13. Potential and potential difference.
14. Electric field.
15. Electric capacitance. Capacitors.
16. Laws of direct current.
17. Electromotive force.
18. Work and power of current.
19. Magnetic field. Electromagnetic induction.
20. Magnetic characteristics of substances.
21. Light waves.
22. Interference.
23. Laws of geometric optics.
24. Lenses
25. Photon and its properties
26. External photoelectric effect
27. Atomic nucleus

- 28. Radioactivity. Law of Radioactive Decay
- 29. Nuclear reactions

### 2.3 List of recommended literature for preparation:

1. Bondarev, B. V. Course of general physics. Book 1: mechanics: A textbook for bachelors / B. V. Bondarev, N. P. Kalashnikov, G. G. Spirin. - Lyubertsy: Yurayt, 2016. - 353 p.
2. Erofeeva, G. V. Practical classes in the general course of physics: A textbook for undergraduate and graduate studies / G. V. Erofeeva, Yu. Yu. Kryuchkov, E. A. Sklyarova, etc. - Lyubertsy: Yurayt, 2016. - 492 p.
3. Zisman, G. A. Course of general physics: A textbook. In 3 tt. Vol. 1. Mechanics.
4. Kalashnikov, N. P. Practical training on solving problems of the general course of physics. Mechanics: A textbook / N. P. Kalashnikov, T. V. Kotyrlo et al. - St. Petersburg: Lan, 2018. - 292 p.
5. Lucich, S. I. Tasks for the general course of physics in questions and answers: Mechanics / S. I. Lucich, N. I. Shiryayeva. - M.: KD Librocom, 2016. - 184 p.
6. Savelyev, I. V. Course of general physics. In 3 t. t. 1. Mechanics. Molecular Physics / I. V. Savelyev. - St. Petersburg: Lan, 2016. - 432 p.
7. Sivukhin, D. V. General course of physics: Textbook: for universities in 5 volumes. Volume 1 of Mechanics / D. V. Sivukhin. - M.: Fizmatlit, 2017. - 560 p.
8. Trofimova, T. I. Course of physics: Textbook / T. I. Trofimova. - M.: Academy, 2016. - 192 p.
9. Tuganbayev, A. A. Course of physics. Volume 1 of Mechanics. Molecular physics: Textbook / A. A. 10 Tuganbayev, V. G. Krupin. - St. Petersburg: Lan, 2016. - 352 p.
10. Volkenstein, V. S. Collection of problems on the general course of physics / V. S. Volkenstein. - M.: Nauka, 2018. -265 p.
11. Hartman, Z. Entertaining physics, or Physics during a walk / Z. Hartman. - Moscow: LIBROCOM, 2017. - 120 p.
12. Course of general physics, vol. t. 1-2. Mechanics / ed. Gershenzon. - M.: Academy, 2018. - 123 p.

### **3. Criteria for evaluating the entrance exam for admission to the bachelor's program for foreign citizens on a fee-paying basis:**

3.1 Selection for admission of foreign applicants to bachelor's degree programs through testing is assessed on a 100-point scale. A minimum of 65 points is required for admission on a fee-paying basis to the bachelor's program.

3.2 At the first stage of preliminary selection for bachelor's degree programs, applicants take a test covering materials on general education disciplines related to the chosen specialty. The test consists of 100 questions (20 questions per test, with 5 points awarded for each correct answer).

3.3 To pass the test successfully, a foreign applicant must correctly answer at least 13 out of 20 questions, which is equivalent to 65%, regardless of the language chosen for testing.

3.4 At the second stage of selection for bachelor's degree programs, applicants take a language proficiency test:

- ✓ For programs with English as the language of instruction, applicants must correctly answer at least 21 out of 30 questions, which is equivalent to 70%.

✓ For programs with Russian or Kazakh as the language of instruction, applicants must correctly answer at least 15 out of 30 questions, which is equivalent to 50%.