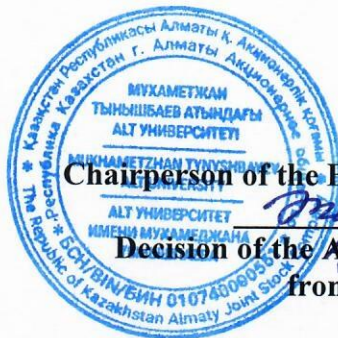


**JSC «ALT University named after Mukhamedzhan Tynyshpaev»**



**APPROVED**

**Chairperson of the Board of Trustees of «ALT University»**

**M.S. Zharmagambetova**

**Decision of the Academic Council of «ALT University»**

from «30» 05 2025 year (protocol №10)


**Interview Program for Applicants to the Specialized Master's Program**

Educational Program


**7M06237 – "Radio Engineering, Electronics and Telecommunications" (1 year)**

**Almaty. 2025**

The entrance examination program was discussed and approved at the meeting of the Department of Information and Communication Technologies (ICT), Minutes No. 8 dated April 17, 2025.

**Head of the ICT Department:**  **D. Kassymova**

The entrance examination program was reviewed and recommended at the meeting of the Council of the Institute of Energy and Digital Technologies, Minutes No. 5 dated April 25, 2025.

**Chairperson of the Council of the Institute "E&DT":**  **A.Zh. Toigozhinova**

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## **1. Purpose of the Interview**

Admission to the master's program "7M06237 – "Radio Engineering, Electronics and Telecommunications" (1 year)" at JSC "ALT University named after Mukhamedzhan Tynyshpaev" on a tuition basis is conducted based on the results of an interview. Candidates eligible to participate in the interview must have at least 5 years of experience in a managerial position related to the educational program in government or civil service, or at least 10 years of professional experience relevant to the educational program.

The interview is conducted to assess the applicant's level of theoretical and practical knowledge, professional competencies, and motivation for pursuing studies in the master's program.

## **2. Interview Procedure.**

The interview for applicants to the master's program is conducted within 30 minutes. During this time, the applicant answers questions from the admissions committee approved by the President-Rector of the university.

At the applicant's choice, the interview may be conducted in Kazakh, Russian, or English. The interview is held either in-person or remotely, with mandatory use of video communication. The video recording is archived by the university for up to three years.

Candidates may be asked additional questions related both to the content of the interview and to other sections relevant to the program profile.

Applicants who do not attend the interview for valid reasons (illness or other documented circumstances) are allowed to take the interview on another day according to the approved schedule.

Interview protocols are submitted to the responsible secretary of the admissions committee immediately after the procedure is completed. All disputed issues related to the interview process are resolved in accordance with the legislation of the Republic of Kazakhstan.

## **3. Interview Evaluation Criteria**

The interview is conducted based on an approved standardized protocol, which records the questions asked, the applicant's answers, and the final evaluation.

Candidates are assessed according to the University's internal system based on several criteria reflecting the applicant's level of preparation, professional experience, and motivation. The final decision of the committee is made collectively and documented in a protocol signed by all committee members.

No numerical passing score is established — the committee's decision determines whether the candidate meets the requirements for admission to the master's program.

Interview protocols of admitted applicants are kept in their personal files.

**Table 1 – Interview Evaluation Criteria**

Criteria	Descriptors	Scores
<b>Motivation</b>	Justification of reasons for applying to the program, choice of university, understanding of goals and prospects for professional and personal growth.	Sufficient / Insufficient
<b>Research Competence</b>	Proficiency in basic research skills necessary for scientific and analytical activities related to the educational program.	Sufficient / Insufficient
<b>Creativity</b>	Ability to propose unconventional solutions and demonstrate a creative approach to analyzing tasks and problems.	Sufficient / Insufficient
<b>Communication Skills</b>	Ability to clearly and logically express thoughts, justify one's point of view, and draw conclusions.	Sufficient / Insufficient
Committee Decision		Sufficient / Insufficient

#### **4. Interview Questions**

1. Principles of design and operation of radio engineering systems
2. Characteristics and parameters of modern antennas and feeder devices
3. Modulation and demodulation methods in analog and digital radio communication
4. Features of radio wave propagation in various media
5. Elements and circuits of analog and digital electronics
6. Architecture and principles of telecommunication network design
7. Methods for improving noise immunity in radio systems
8. Principles of fiber-optic communication line construction
9. Application of microcontrollers and FPGAs in telecommunication devices
10. Standards and protocols of digital communication
11. Methods of analysis and synthesis of RF and microwave circuits
12. Radio monitoring and radio control in communication systems
13. Modern wireless communication technologies (5G, IoT, LoRaWAN, etc.)
14. Fundamentals of digital signal processing in communication systems
15. Promising trends in the development of radio electronics and telecommunications

## **5. Recommended Literature**

### **5.1 Main Literature**

1. Ivanov A.A., Ospanova N.A. Digital Transmission Systems. — Almaty: KazATC, 2012.
2. Dmitriyev S.A., Slepov N.N. Fiber-Optic Technology: Current State and Prospects. — Moscow: VOT Publishing, 2015.
3. Sklyarov O.K. Fiber-Optic Networks and Communication Systems. — St. Petersburg: Lan, 2010.
4. Andre Girard. WDM Technology and Testing Manual. — Moscow: EXPO, 2011.
5. Alekseev E.B., Gordienko V.N., Krukhmalev V.V., et al. Design and Technical Operation of Digital Telecommunication Systems and Networks: University Textbook / Edited by V.N. Gordienko and M.S. Tveretsky. — Moscow: Goryachaya Liniya – Telecom, 2012. — 392 pages.
6. Ryzhikov Yu.I. Simulation Modeling: Theory and Technology. — St. Petersburg: KORONA Print; Moscow: Altex-A, 2014. — 384 pages.
7. Sovetov B.Ya., Yakovlev S.A. Systems Modeling. — Moscow: Vysshaya Shkola, 2015. — 271 pages.
8. Kuzmichev D.A., Radkevich I.A., Smirnov A.D. Automation of Experimental Research. — Moscow, 2013.
9. Stupin Yu.V. Methods of Automating Physical Experiments and Installations Using Computers. — Moscow, 2013.

### **5.2. Additional Literature**

1. Lipskaya M.A., Mamilov B.E., Zaltsman Yu.M. Guidelines for Practical Classes prepared in accordance with the working curriculum of the discipline "Digital Transmission Systems" for master's students of the specialty 6M071900 – Radio Engineering, Electronics and Telecommunications. — Almaty, KazATC, 2017.
2. Lipskaya M.A., Zaltsman Yu.M. Guidelines for Independent Work under the Supervision of a Teacher prepared in accordance with the working curriculum of the discipline "Digital Transmission Systems" for master's students of the specialty 6M071900 – Radio Engineering, Electronics and Telecommunications. — Almaty, KazATC, 2017.
3. Breni S. Synchronization of Digital Communication Networks. — Moscow: Mir, 2013.
4. Biryukov N.L., Triska N.R. Synchronization Networks: Interaction Scenarios. — Networks and Telecommunications, No. 08–09, 2015.