«Mukhamedzhan Tynyshpayev ALT University» JSC

Department of Automation and control

APPROVED
Chairman of the AC ALT University
_____ S. Amirgaliyeva

Decision of the Academic Council of ALT University
dated «30» 05 2024 (protocol No. 9)

ADMISSION EXAM PROGRAM (INTERVIEW) FORAPPLYING TO POST-GRADUATE EDUCATION PROGRAMS

Educational program
7M07143 – Management of technological complexes, profile direction

Almaty, 2024

Interview questions was discussed and received a positive decision at the meeting of the Department of «Automation and control», Protocol No. 8 of April 18, 2024.

Head of the Department
«Automation and control» _____ **K. Sansyzbay**

Interview questions was reviewed and recommended at the meeting of the Council of the Institute of «Automation and telecommunications», Protocol No. 5 of April 26, 2024.

Chairman of the CI «AT» _____ **A. Toigozhinova**

CONTENT

1. The purpose of the entrance exam for a group of educational programs

Admission of foreign citizens to study in to JSC «ALT University named after Mukhamedzhan Tynyshpayev» on paid basis is carried out based on the results of an interview conducted by the admissions committee during the calendar year.

Goals entrance exam (interview) for the Educational program «7M07143 – Management of technological complexes», is the definition of theoretical and practical preparedness of an applicant for a master's degree, level of compliance with knowledge, skills and skills to the requirements of master's studies in the field of preparation.

2. Regulations for conducting an entrance exam (interview) for a master's program in a group of educational programs

The duration of the entrance exam (interview) is 30 minutes, during which the applicant is interviewed and answers questions from a commission approved by the President-Rector, consisting of 3 members.

At the applicant's choice, entrance The exam (interview) is taken in Kazakh, Russian or English.

Persons who did not appear at the entrance exam (interview) for a valid reason (illness or other circumstances, confirmed by documents), are allowed to participate on other days in accordance with the approved interview schedule.

The interview is conducted in person/remotely with the mandatory use of video communication. The video recording is stored in the archive for no more than three years.

During the interview process, to clarify the knowledge of the candidate/applicant, additional questions may be asked both on the content of the interview question and on any sections of the subject within the program.

The interview protocols are submitted to the executive secretary of the admissions committee immediately after the completion of the interview.

All controversial issues related to the interview are resolved in accordance with the established legislative procedure of the Republic of Kazakhstan.

3. Interview assessment criteria

The interview procedure is documented in a protocol of the established form, in the form according to Appendix No. in which are fixed questions to incoming and interview results.

Evaluation of candidates/applicants is carried out according to the system adopted by the University according to Table 1. Passing the point is the commission's decision on the sufficient level of candidates/applicants for further training master's degree Each interview decision is signed by the committee members.

Protocol interviews enrolled in the university is kept in their personal files.

Table 1 – Interview assessment criteria

Criteria	Descriptors	Level
Motivation	Argumentation of motives for doctoral studies in the chosen EP and admission to a specific university. Vision of prospects for professional and personal growth upon completion of training	sufficient/not sufficient
Research competence	Possession of the research skills and experience necessary for research activities in a specific subject area	sufficient/not sufficient
Creativity	Non-standard thinking, creative and alternative approaches to solving problems and situational tasks	sufficient/not sufficient
Communication skills	The ability to briefly, representatively, logically, and reasonably express one's point of view, make generalizations and conclusions. Language skills	sufficient/not sufficient
Commission decision		**sufficient/not sufficient**

4. Interview questions

1. Purpose and classification of electrical centralization systems
2. Types of relay-processor centralization and their element base
3. Microprocessor centralization systems, their features, equipment
4. Purpose, characteristics of auto-locking devices
5. Classification, structure and principles of management of fencing devices at crossings
6. Purpose and principle of constructing schemes for changing the direction of trains
7. Dispatch centralization systems. Purpose and requirements of the rules of technical operation to them
8. Microprocessor systems of dispatching centralization operated on the railway network of Kazakhstan, development prospects
9. Assignment of remote control, telesignalization and cyclic synchronization signals
10. Purpose and features of block-hill automatic centralization
11. Features of centralized auto-locks
12. Types of typical and dynamic links
13. Frequency characteristics of dynamic links
14. Time characteristics of dynamic links

15. The concept of automatic control and regulation

5. Recommended reading

5.1 Main literature

1. Glazunov L.P., Grabotsevtskiy V.P., Fundamentals of the theory of reliability of automatic control systems: Moscow, Route, 2005 – 255 p.

2. Dudnikov E.G. Automatic control in industry / Textbook for universities of railway transport. – 3rd ed., reprint. and additional – M.: Transport, 2004. – 168 p.

3. Stefani E.P., Fundamentals of building automated control systems, M.: Energia, 2006. – 352 p.

4. Cirlin A.M., Optimal control of technological processes, M.: Energoizdat 2006- 400 p.

5. Vasilkov Yu.V., Vasilkova N.N., Computer computing technologies in mathematical modeling: Moscow: Finance and Statistics, 2002 - 265 p.

6. Olson G., Piani D., Digital automation and control systems, St. Petersburg: Nevsky dialect, 2001- 557 p.

7. Kochetkov A.A. Remote control systems in railway transport, Moscow, Route, 2005 – 304 p.

8. Satyrev F.E., Golik V.K., Dispatch centralization "Neman", RB, Gomel, 2003 – 106 p.

9. Dolgiy I.D., Kulkin A.G., Dispatching control system and train traffic management DC – South with RCP, Rostov on Don, RGUPS, 2010 – 468 p.

10. Vinogradova V.Yu., Voronin V.A., Kazakov E.A., Shvalov D.V., Shukhina E.E. Distillation automation systems. Moscow, Route, 2005. – 292 p.

11. Fedorov N.E. Modern auto-locking systems with tonal rail circuits. Samara, SamGAPS, 2004. – 132 p.

12. Fedorov N.E. Relay and microelectronic systems of interval control of train movement. Samara, SamGAPS, 2006. – 163 p.

5.2 Additional literature

1. Longbotov R.I., Reliability of computing systems: Moscow, Energia, 2001 – 216 p.

2. Shultz V.A., Methodological guidelines for the implementation of practical exercises. Almaty, KazATK 2010- 32s.

3. Shultz V.A., Textbook "Dispatch centralization". Almaty, KazATK 2010- 86c.

4. Technical operation of devices and systems of railway automation and telemechanics: a textbook / Edited by Doctor of Technical Sciences V.V. Sapozhnikov. - M: Route, 2003.- 335s.

5. Mankwein V.T., Frolov S.V., Shekhtman M.B., Application of Scada systems for automation of technological processes. Moscow: Tambov: Mechanical Engineering, 2000.- 176 p

6. Aristova N.I., Korneva A.A., Industrial software and hardware on the market of automated process control systems, M.: Nauktehizdat 2001.- 400 p .

7. Denisov A.A., Kolesnikov D.N., Theory of large control systems, L.: Energoizdat 2000- 228 p.

8. Vedernikov B.M. Automation and telemechanics on stages. A study guide. KazATK, Almaty, 2009. – 109 p.

9. Vedernikov B.M. Automatic and semi-automatic locking. A study guide. KazATK, Almaty, 2009. – 132 p.

10. Vedernikov B.M. Travel sensors. A study guide. KazATK, Almaty, 2011. – 122 p.

11. Vedernikov B.M. Signal auto-regulation. Almaty, KazATK, 2009. – 92 p.

12. Vedernikov B.M. Automatic fencing devices on stages. Almaty, KazATK, 2008. – 100 p.

13. Vedernikov B.M. Methodological guidelines for practical classes in the discipline "Systems of interval control of train movement" (for undergraduates of the specialty 6M070200 – Automation and control). Almaty, KazATK, 2010. – 44 p.

14. Vedernikov B.M. Methodological guidelines for the independent work of a graduate student under the guidance of a teacher in the discipline "Systems of interval regulation of train traffic". Almaty, KazATK, 2010. – 40 p.