JSC ALT University named after Mukhamedzhan Tynyshpaev

APPROVE
By the decision of the Academic Council of ALT
dated March 27, 2025 (Protocol No. 8)
President-Rector
Zharmagambetova M.S.

EDUCATIONAL PROGRAM

Name: 8D11367 ORGANIZATION OF TRANSPORTATION, TRAFFIC AND OPERATION OF TRANSPORT

Level of training: Doctoral (PhD)

Code and classification of areas of study: 8D11 Transport services

Code and group of educational programs: D147 Transport services

Date of registration in the register: 04.07.2025

Registration number: 8D11300016

Almaty, 2025

CONTENT

1. INFORMATION ON THE REVIEW, COORDINATION AND APPROVAL OF THE PROGRAM, DEVELOPERS AND EXPERTS

1 DEVELOPED BY:

ALT University named after M. Tynyshpayev, Associate Professor of the Department of TUB, Doctor of Technical Sciences — (signature) — Musabaev B.K.

ALT University named after M. Tynyshpayev, Associate Professor of the Department of TUB, Ph.D — (signature) — Bitileuova Z.K.

ALT University named after M. Tynyshpayev, Associate Professor of the Department of TUB, Ph.D — (signature) — Vakhitova L.V.

ALT University named after M. Tynyshpayev, Associate Professor of the Department of TUB, Ph.D — (signature) — Bekmagambetova L.K.

2 Experts:

Almaty-1 Station Manager. KTZ Freight Transportation Branch Almaty Freight Transportation Branch — (signature) — Sadykov B.A.

TransCom LLC, PhD, Transportation Analyst — (signature) — Aikumbekov M.N.

3 REVIEWER:

Deputy Director for Station Facilities Almaty Branch of the Main Line Network — (signature) — Zhaksylykova A.A.

4 CONSIDERED AND RECOMMENDED:

Meeting of the Academic Committee of the Department of Transport Services and Business (submit) Minutes No. 1, February 17, 2025 — (signature) — Musalieva R.D.

Meeting of the KOK-UMB Institute "Logistics and Business" (signature) Minutes No. 7, February 20, 2025 — (signature) — Musaeva G.S.

Meeting of the UMS No. 4, March 20, 2025 — (signature) — Kodzhabergenova A.K.Minutes

5 APPROVED by the decision of the Academic Council dated March 27, 2025 No. 8

6 UPDATED new

2. NORMATIVE REFERENCES

The educational program is developed on the basis of the following legal acts and professional standards:

1. Law of the Republic of Kazakhstan “On Education” dated July 27, 2007 No. 319-III (as amended and supplemented as of March 27, 2023).

2. National qualifications framework, approved by the protocol of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.

3. Industry qualifications framework for the field of Education, approved by the Minutes of the meeting of the industry commission of the Ministry of Education and Science of the Republic of Kazakhstan on social partnership and regulation of social and labor relations in the field of education and science dated November 27, 2019 No. 3.

4. State compulsory standard of higher education (Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated February 20, 2023 No. 66).

5. Qualification reference book for positions of managers, specialists and other employees, approved by order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated August 12, 2022 No. 309.

6. Rules for organizing the educational process on credit technology of education in organizations of higher and (or) postgraduate education, approved by Order of the Minister of the Ministry of Education and Science of the Republic of Kazakhstan No. 152 dated April 20, 2011 (with additions and changes dated April 4, 2023 No. 145).

7. Classifier of areas of training for personnel with higher and postgraduate education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No. 569 (with amendments and additions as of June 5, 2020).

8. Algorithm for inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education, approved by Order of the Minister of Education and Science of the Republic of Kazakhstan dated December 4, 2018 No. 665 (with additions and changes as of December 23, 2020 No. 536).

9. RI-ALT-33 Regulations on the procedure for developing an educational program for higher and postgraduate education.

3. PASSPORT OF THE EDUCATIONAL PROGRAM

№	Field name	Note
1	Registration number	8D11300016
2	Code and classification of the field of education	8D11 Services
3	Code and classification of areas of study	8D113 Transport services
4	Code and group of educational programs	D147 Transport services
5	Name of the educational program	8D11367 Organization of transportation, traffic and operation of transport
6	EP type	New EP
7	EP purpose	Training of highly qualified scientific, pedagogical and managerial personnel with innovative professional competencies and skills to generate ideas, predict the results of innovative activities, manage complex production and scientific processes, provide methodological knowledge in the field of organization and management of the transportation process in transport
8	ISCED level	8
9	Level on NQF	8
10	Level on SQF	8
11	EP distinctive features	-
	Partner Higher education institution (joint educational program)	-
	Partner higher education institution (two-degree educational program)	-
12	Form of training	full-time
13	Language of education	russian, kazakh, english
14	Volume of the credits	180
15	Awarded Academic Degree	Doctor
16	Availability of an appendix to the license for the direction of training	№ KZ87LAA00036465 from June 28, 2024
17	EP accreditation existence	Available
	Name of the accreditation body	ND "Independent Agency of Accreditation and Rating"(HAAP/IAAR)
18	Validity period of accreditation	28.05.2022-27.05.2027 гг.

4. COMPETENCE MODEL OF A GRADUATE

Objectives of the educational program:

1. Promoting the development of graduates' abilities:

1) demonstrate developing knowledge and understanding, acquired at undergraduate and postgraduate levels, which provides the basis for or opportunity for original development or application of ideas, often in the context of scientific research;

2) apply knowledge, understanding, and problem-solving abilities to new or unfamiliar situations in the contexts and frameworks of broader or interdisciplinary areas related to the area of study;

3) integrate knowledge, cope with complexity, and make judgments based on incomplete or limited information, taking into account ethical and social responsibility for the application of this judgment and knowledge;

4) clearly and concisely communicate one's conclusions and knowledge and their rationale to specialists and non-specialists;

5) continue learning independently.

6) plan, develop, implement, and adjust the comprehensive scientific research process;

7) demonstrate a systematic understanding of the field of study and mastery of the skills and research methods used in that field;

8) critically analyze, evaluate, and synthesize new and complex ideas;

9) conduct independent scientific research and communicate their knowledge and achievements to colleagues, the scientific community, and the general public.

2. Promoting the formation of graduates' readiness to:

1) independently develop professional and research competencies;

2) independently complete both research and professional tasks in accordance with the requirements of the professional standard and educational program.

Learning outcomes:

ON1 - Conduct scientific research and experiments, analyze and describe their results, apply methods of dissemination and popularization of professional knowledge, theory of engineering decision-making and research methodology.

ON2 - To apply the basic methods of scientific research, including various levels of scientific knowledge and stages of experimental research, to demonstrate the skills of writing academic and scientific texts in various formats for publication in publications of different levels.

ON3 - Demonstrate the organization of outsourcing activities in the mainline railway transport, including outsourcing methods and tasks, types of outsourcing in freight transportation, as well as the preparation of tender documentation and tenders to attract outsourcers serving cargo owners and terminal and warehouse facilities.

ON4 - Analyze modern theoretical, methodological and technological achievements in domestic and foreign science, as well as consolidate practical skills in applying relevant research methods, processing and interpreting experimental data within the framework of dissertation research.

ON5 - To predict cargo flows and the technical development of a unified transport system, optimize the theoretical prerequisites for improving the transportation process in transport systems, as well as optimize the capacity of permanent devices and their throughput.

Professional field: Branches of science and technology that study the connections and patterns in the theory, calculation, design, testing, and operation of land transport, with the aim of solving tasks related to creating new and improving existing models of technology; higher and secondary vocational education.

Objects of professional activity: State and educational institution authorities, national and industry-specific academies of sciences, scientific organizations, research institutes, research universities, scientific laboratories of higher education institutions, experimental design bureaus, shared-use laboratories, research and development divisions of organizations for which scientific and (or) scientific-technical activity is not the main type of activity; transport, transport equipment, and enterprises of the transport and communication complex.

Types of professional activity:
- specialized;
- experimental;
- production and technological;
- design and technological.

Functions of professional activity:
- planning of research and experimental research work;
- execution of research and experimental research work;
- teaching: transmits educational information, teaches how to acquire knowledge independently;
- educational: introduces students to the system of social values;
- social and communicative: interacts with the professional community and all stakeholders in education.

List of specialist positions:
- research associate;
- professor, associate professor, docent, senior lecturer;
- education manager;
- researcher;
- designer, manager of enterprises for the repair and operation of transport and transport equipment.

Professional certificates obtained upon completion of training: not provided.

Requirements for the previous level of education: Master's degree in a research and pedagogical field.

The doctoral program includes industrial practice: The aim of the doctoral student's industrial practice is to consolidate, deepen, and systematize theoretical knowledge, as well as to acquire advanced professional competencies through direct participation in solving complex research, experimental design, and technological tasks in the real sector of the economy, a scientific organization, or a high-tech enterprise, aimed at collecting empirical material, testing the results of the dissertation research, and implementing them.

Tasks of the Doctoral Student's Industrial Practice
The tasks are structured according to key activity areas:
1. Research Tasks:

- conduct an analysis of modern technological processes, equipment, management methods, or materials used at the host organization to identify current problems and potential applications for one's own scientific developments.

- collect and systematize unique empirical material (experimental data, observation results, samples, statistics, archival documents, etc.) necessary to confirm the hypotheses of the dissertation research.

- test, in real or simulated conditions, the methodologies, algorithms, software, laboratory setups, material compositions, etc., developed during the dissertation research.

- conduct a comparative analysis of the effectiveness of the proposed solutions against existing analogues or baseline levels.

2. Experimental-Implementation and Technological Tasks:

- take direct part in the R&D (research and development) cycle: from design and modeling to the creation of a prototype, mock-up, or experimental sample.

- refine the technological regimes, parameters, and regulations proposed in the dissertation using the production or laboratory equipment of the host organization.

- prepare a draft of technical documentation (specifications, technological instructions, test programs, certificates) for the developed product or process.

- assess the economic, social, or environmental impact of implementing the research results.

3. Professional and Personal Development Tasks:

- develop skills for working in a professional team, including interaction with engineers, technologists, economists, and managers to solve interdisciplinary tasks.

- master advanced equipment, specialized software, standards, and regulations (e.g., GOST, ISO, GxP) used in the specific industry.

- form competencies in presenting and defending one's scientific and technical solutions before an expert audience (scientific and technical councils, engineering groups).

- gain skills in preparing applications for intellectual property objects (patents, utility models) based on the results obtained during the practice.

4. Analytical and Reporting Tasks:

- analyze the organizational structure and business processes of the host enterprise from the perspective of innovation potential.

- summarize and critically evaluate the results obtained during the practice period, correlating them with the goals and objectives of the dissertation research.

- document the practice results in the form of a comprehensive report, including proposals and recommendations for the host organization, as well as a plan for further scientific research.

Results of Completing the Industrial Practice:

- relevant empirical material for the dissertation has been obtained.

- the scientific hypothesis has been confirmed (or adjusted) in practice.

- key solutions of the dissertation have been tested and refined.

- documents for potential implementation have been prepared (report, terms of reference, technical documentation).

- implementation or a trial operation act has been achieved (desired high-level outcome).

- a patent application has been filed (desired high-level outcome).

- the practice report has been written and formatted; a presentation for a scientific and technical seminar has been prepared.

Doctoral Student's Experimental Research Work (ERW).

Goal - the development and creation (of a new material, method, model, technology, algorithm) with specified properties to solve a current scientific or applied problem.

Tasks of the Doctoral Student's Experimental Research Work:

Task 1: Analytical-Theoretical (Exploratory-Preparatory).

Conduct a comprehensive analysis of the state of the problem. Study scientific literature, patents, existing methods, analogues. Identify "white spots," contradictions, shortcomings. Formulate a working hypothesis and define the direction of one's own research.

Result: A detailed analytical review, a formulated scientific hypothesis, a justified methodology for further research.

Task 2: Methodological-Modeling (Design).

Develop a theoretical or mathematical model of the object/process. Select or develop new methods and methodologies for the experiment. Plan the experiment, define variables, evaluation criteria.

Result: A created model, a developed plan and methodology for experimental research.

Task 3: Experimental (Main, Empirical).

Conduct a series of experiments (laboratory, field, computational) in accordance with the developed plan. Obtain primary data.

Result: An array of experimental data, their primary systematization (tables, graphs, protocols).

Task 4: Analytical-Generalizing.

Process, analyze, and interpret the obtained experimental data. Test the hypothesis. Identify statistically significant patterns, dependencies, cause-and-effect relationships. Draw conclusions from the experiment.

Result: Identified patterns, generalized results in the form of graphs, diagrams, formulas, a confirmed/refuted hypothesis.

Task 5: Implementation-Approval (Verification).

Approve the obtained results: publish articles in Q1-Q2/WoS/Scopus journals, present at international conferences, obtain a patent or certificate. Carry out trial implementation (if possible) or conduct a comparative analysis with existing analogues.

Result: Publications, presentations, patents, implementation acts, positive feedback from the scientific community.

International Research Internship

An international research internship is one of the most important components in the preparation of PhD doctors and is implemented in accordance with the Individual Plan of Research Work within the timeframe determined by the academic calendar and the doctoral student's individual work plan.

The timing of the international research internship is determined independently by the University. Completion of the international research internship is typically planned for the second year of doctoral studies.

The doctoral student's international research internship is conducted based on contracts concluded with enterprises/institutions, universities, and scientific organizations and leading scientists of foreign countries within the framework of Agreements and Memoranda of Cooperation in the field of education and science, as well as on the basis of personal invitations from educational and scientific organizations.

Completion of exchange programs, including double-degree programs, joint educational programs with universities and organizations, is equated to completing an international research internship.

The international internship for doctoral students is carried out within the framework of the dissertation research at a university and/or a major research center in a near or far abroad country at the workplace of the foreign consultant, within the timeframes agreed with them.

In case of not completing the international research internship, the doctoral student is not admitted to the final certification.

Final Certification of the Doctoral Student

The final certification of the doctoral student is conducted in the form of writing and defending a doctoral dissertation.

The purpose of the final certification of the doctoral student is to assess the scientific-theoretical and research-analytical level of the doctoral student, the former professional and managerial competencies, readiness for independent performance of professional tasks, and the compliance of their training with the requirements of the doctoral educational program.

Students who have completed the educational process in accordance with the requirements of the educational program, the working curriculum, and the working syllabi, and who have passed a preliminary defense (extended meeting) based on the results of the dissertation research, are admitted to the final certification.