

Non-commercial joint-stock company
«Kazakh National Agrarian Research University»

AGREED

Direktor LLP E.S.T «Gonstrution»

A.Tortbaev

2024



APPROVED

Chairman of the Board – Rector

A.Kurishbaev

2024





EDUCATIONAL PROGRAM

«7M07104 - Transport, Transport Technics and Technology»

Awarded degree: Master of Engineering under the educational programme
«7M07104 - Transport, Transport Technics and Technology»
(scientific-pedagogical direction)

ALMATY 2024

Approved at the meeting of the Department «Machine use» named after I.V. Sakharov
Protocol № 6 «15» 01 2024
Head of the department  M. Zhetpeisov

Considered at meetings Academic committee of the Faculty of «Engineering - technical»
Protocol № 6 «26» 01 2024
Chairman of the AC of the faculty  U. Ibishev

Reviewed by the Educational Methodological Council of the University and recommended
to the Academic Council
Protocol № 4 «01» 02 2024

Chairman of the EMS of the University  A. Abdyrov

The educational program was approved at the meeting of the Academic Council of
KazNARU
Protocol № 9, «01» 03 2024

Developers:

Dean of the Faculty
Head of department
Ass. professor, PhD
MTT-22-08II master student
Graduate of 2023



L. Aldibaeva
M. Zhetpeisov
K. Khazimov
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Employers:

Employer: Direktor LLP E.S.T «Gonstrution»



A. Tortbaev

Agreed:

Head of the Educational Program
Design Office



Zh. Kussainova

Application area

Designed for the implementation of the training of master students in the educational program «7M07104 - Transport, Transport Technics and Technology» in the NJSC «Kazakh National Agrarian Research University»

Regulatory documents

Law of the Republic of Kazakhstan On Education Astana, Akorda, July 27, 2007., No. 319-III ZRK (with changes and additions as of 01/01/2019)

State obligatory standard of higher and postgraduate education. Approved by the Resolution of the Government of the Republic of Kazakhstan dated October 31, 2018., No. 604

Classifier of areas of training with higher and postgraduate education No. 569 13.10.2018;

Model Rules for the Activities of Educational Organizations Implementing Educational Programs of Higher and (or) Postgraduate Education, MES RK of October 30, 2018., No. 595.

Rules of the organization of the educational process on the credit technology of education. Order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 12, 2018., No. 563

Professional standard «Control over the technical condition of road transport» Appendix No.3 to the order No. 239 of the Deputy of the Board of the National Chamber of Entrepreneur of the Republic of Kazakhstan «Atameken» September 6, 2018.

Professional standard "Forwarding services in road transport" Appendix No. 76 to the order of the Acting Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 01.09.2023 № 136.

Professional standard "Preparatory and final operations related to the operation of buses" Appendix No. 18 to the order of the Acting Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 01.09.2023 № 136.

Professional standard "Diagnostics, maintenance and repair of other motor vehicles" Appendix No. 9 to the order of the Acting Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 01.09.2023 № 136.

Website NCE Atameken <https://atameken.kz/>

1. Passport of the educational program
7M07104 – «Transport, transport technics and technology»

Code and classification of the field of education	7M07 – «Engineering, manufacturing and construction industrie»
Code and classification of training areas	7M071 – «Engineering»
Code and name of the educational program	«7M07104 - Transport, Transport Technics and Technology»
Type of educational programm	Current
The purpose of the educational program	Training of specialists who are competitive in the labor market, who have theoretical knowledge and practical skills in planning and organizing work in auto-transport enterprises, as well as in research institutes for the development of transport technics.
ISCED level	7
NQR level	7
SQF level	7
Application number to license for training direction	KZ42LAA00006720 №10, 05 July 2019
Accreditation of the EP Name of the accreditation agency Validity of accreditation	Certificate №0096/2 NAAR 12.12.2016 -10.12.2021
Degree awarded	Master of Engineering under the educational programme: 7M07104 – «Transport, transport technics and technology»
Learning outcomes	Table 2
List of qualifications and positions	A graduate can carry out professional activities in the following areas: - chief engineer; - director (general director, managing director); - chief mechanical engineer.
Field of professional activity	- education and science; - agriculture; - transport; - production of machinery and equipment; - motor industry; - service, services to the public.
Areas and object of professional activity	The areas of professional activity of the specialist are: - the sphere of material production, the objects of which are production enterprises of all industries, agricultural enterprises, motor transport, road and repair enterprises, mining enterprises for the extraction and processing of natural raw materials; - non-industrial sphere the objects of which are research institutes and educational organizations of any profile, laboratories of research institutes.

Functions of professional activity	<p>The educational program 7M07104-Transport, transport technics and technologies include two educational paths:</p> <p>Educational program №1. «Scientific research and problems in the use of transport equipment»</p> <p>The master's professional activity is aimed to:</p> <ul style="list-style-type: none"> - development, construction and operation of various types of transport; - testing of equipment and justification of the feasibility of its introduction into production; - control over the implementation of installation, commissioning, start - up, effective use and maintenance of motor transport; - analysis of equipment operating conditions and modes; - development and organization of technological processes for processing parts, Assembly of units and aggregates, machines and devices intended for various industries and ensuring the production of products with specified characteristics. <p>Educational program №2 «Research and problems in the use of agricultural transport»</p> <p>The master's professional activity is aimed to:</p> <ul style="list-style-type: none"> - development, construction and operation of various types of agricultural transport; - testing of equipment and justification of the feasibility of its introduction into production; - control over the implementation of installation, commissioning, start - up, effective use and maintenance of agricultural transport; - - analysis of conditions and operating modes of equipment in agricultural enterprises; - development and organization of technological processes for processing parts, Assembly of units and aggregates, machines and devices intended for agriculture <p>. Undergraduates of both educational trajectories can conduct teaching activities in educational organizations</p>
Types of professional activity	<p>Masters of 7M071 – «Engineering» can perform the following types of professional activities:</p> <ul style="list-style-type: none"> - pedagogical activity in professional training, professional education, additional professional education; - pedagogical activity in additional education of children and adults; - operation of tractors, combines and agricultural machines in agricultural production conditions;

	<ul style="list-style-type: none"> - repair of machinery and equipment for agriculture; - providing technical support for production processes in agriculture; - management, maintenance and transportation of goods and people by off-road motor vehicles and motor vehicles in various road and meteorological conditions; - development of design projects for the production of vehicles; - sales of vehicles and equipment; - research and analysis of the market for the implementation of product promotion programs in the production of vehicles; - supply management in the production of vehicles and equipment; - design and construction of motor vehicles (MV) and their components; - diagnostics, maintenance and repair of motor vehicles (MV) and their components; - testing and research of motor vehicles and their components; - technical diagnostics and monitoring of the technical condition of vehicles during periodic technical inspection.
To be competent:	<ul style="list-style-type: none"> - in the field of research methodology; - in matters of innovative technical and technological productions in all industries, including agriculture; - in the field of scientific and scientific-pedagogical activity in educational organizations; - in the implementation of scientific projects and research in the professional field.

2. Results of training on EP

Codes	Learning outcome
LO1	To demonstrate broad- mindedness in matters of philosophy of science, psychology and pedagogy, to use modern methods of teaching disciplines related to transport, transport technics and technologies, to find optimal options in various psychological situations and apply managerial decisions
LO2	To apply a professional conversation in an international environment in English language, ability to maintain a conversation on a wide range of scientific, technical and pedagogical issues
LO3	To develop plans, programs and methods for conducting research in the field of transport technology; analyze, synthesize and optimize quality assurance processes for testing and certification of automotive technology; take samples for testing of representatives of types of vehicles, equipment items; analysis of research results with the development and implementation of a set of operations to restore the resources of products and their components.
LO4	To analyze and systematize the performance properties of the car in a wider interdisciplinary context that ensure movement: traction, speed and braking properties, fuel efficiency, handling, stability, maneuverability, smoothness and cross-country ability
LO5	To apply the theory of road freight transport and mathematical model of calculation of production cars, especially the organization of transportation of various agricultural goods, cost of services, fares and vehicle choice, and be able to solve the multidimensional problem using at the professional level the basics of linear programming
LO6	To predict an increase and performance of conformity assessment works for improvement in the structure of production of cars that fully meet modern requirements and tasks of fuel economy, as well as know what set of properties the car must have in order to best perform the production functions for which it is intended taking into account social and scientific considerations.
LO7	To collect the methodology for calculating the main parameters of the engine and transmission, taking into account the requirements for traction and speed properties, and refine the parameters obtained by this method taking into account scientific considerations.
LO8	To collect the traction calculation and traction characteristics of tractors , the basics of the theory of rotation of tracked tractors , testing of tractors , patterns of changes in the technical condition of automotive electrical equipment, i.e., to clearly the causes, mechanisms of their occurrence and manifestation to prevent malfunctions and failures.
LO9	To apply the main guidance document at the professional level that regulating international requirements for the technical condition of vehicles and their components in terms related to traffic safety
LO10	To apply at the professional level the main stages of the methodology of technological design of motor transport enterprises: calculation of the production program; calculation of the number of employees in the areas of maintenance, repair and diagnostics; technological calculation of production divisions of zones ; development of planning solutions; analysis of design results as well analysis of pre-design stage documentation and results of additional examination.
LO11	To clearly and unambiguously know the general process of technical diagnostics: test impact on the object, capture and conversion using sensors of signals that express the values of diagnostic parameters, their measurement; diagnosis based on logical pro-

	cessing of the received information by comparing the current values of parameters with the standards including on repair technologies for transport equipment, its systems, assemblies and components.
LO12	To demonstrate the technology of installation and connection area of pipelines made of thermoplastics (polyethylene) in pipeline transport

3. Content of the educational programme
«7M07104 - Transport, transport technics and technology» (2 year)

III	VK / KV	Code of Discipline	Name of the discipline that forms the competence	in academic credits	Volume in hours						Distribution of credits by course and semester				Department 1	form of control	
					in academic hours	Classroom				Extracurricular		1 course		2 course			
						Lectures	Workshops	Laboratory classes	Other (practice)	SRTP	SRO	1	2	3			4
1	TT	Theoretical training		88	2640	225	480	0	110	450	1375						
CBD: UC/CC		Cycle of basic disciplines: University component / Component of choice		35	1050	105	195		20	210	520						
	CBC	Cycle of basic disciplines															
	UC	University component		20	600	60	105	0	20	120	295						
including:		Module 1 Scientific communication and organization of the study process in higher education															
1	UC	HPS 60201	History and philosophy of science	5	150	15	30	0	0	30	75	5			29	exam	
2	UC	FL 60202	Foreign language (professional)	5	150	15	30	0	0	30	75	5			14	exam	
3	UC	HSP 60203	Higher School Pedagogy	5	150	15	30	0	0	30	75	5			6	exam	
4	UC	PM 60204	Psychology of management	3	90	15	15	0	0	30	30		3		6	exam	
5	UC	TP 600200	Teaching practice	2	60				20		40		2		6	report	
	CC	Component of choice		15	450	45	90	0	0	90	225						

		Module 2 Theoretical calculations for transport															
1	CC	TMTT 60205	Theory of movement of transport technics	5	150	15	30	0	0	30	75	5				5	exam
		TTOAT 60208	The theory of operation of agricultural transport	5	150	15	30	0	0	30	75	5				5	
2	CC	FEATTT 60206	Forecasting and expert assessment of transport and transport technics	5	150	15	30	0	0	30	75	5				5	
		IRCD 60207	International requirements for car design	5	150	15	30	0	0	30	75	5				5	
3		TTPS 60303	Theory of transport processes and systems	5	150	15	30	0	0	30	75	5				5	exam
		TCMCAT 60207	Theory of calculating the main components and assemblies of the tractor	5	150	15	30	0	0	30	75	5				5	
CBD: UC/CC		Cycle of basic disciplines: University component / Component of choice															
	CSD	Cycle of specialized disciplines		53	1590	120	285	0	100	240	845						
	UC	University component		20	600	60	120	0	0	120	300						
		Module 3 Scientific communication and organization of the learning process in higher education															
1	UC	EPM 60301	Project management in the field of entrepreneurship	5	150	15	30	0	0	30	75		5			2	exam
2	UC	MFEATTT 60302	Methodology for forecasting and expert assessment of transport and transport techniques	5	150	15	30	0	0	30	75		5			5	exam
3	UC	BSM 70301	Business decision modeling	5	150	15	30	0	0	30	75			5		2	exam
4	UC	Con60301	Conflictology	5	150	15	30	0	0	30	75			5		6	exam
		Component of choice		23	690	60	165	0	0	120	345						
		Module 4 Operation of vehicles															
1	CC	DMTE 70306	Design of the motor transport enterprise	6	180	15	45	0	0	30	90		6			5	Exam
		TCT 70313	Testing of car and tractor	6	180	15	45	0	0	30	90			6		5	
2	CC	OMV 70307	Operation and maintenance of vehicles	6	180	15	45	0	0	30	90			6		5	

		OMAV 70311	Operation and maintenance of agricultural vehicles	6	180	15	45	0	0	30	90			6		5	
		Модуль 5 Calculations and tests for transport															
1	CC	MREET 70308	Maintenance and repair of electrical equipment of cars and tractors	6	180	15	45	0	0	30	90			6		5	Exam
		MDMCT 70310	Modern diagnosis methods of cars and tractors	6	180	15	45	0	0	30	90			6		5	
2	KB	ICTPMPTA 70309	Installation and connection of thermoplastic polymer materials in pipeline transport and agriculture	5	150	15	30	0	0	30	75			6		5	
		TCMCAC 70312	Theory of calculating the main components and assemblies of the car	5	150	15	30	0	0	30	75			6		8	
1	UC	RP 60300	Research practice	10	300				100		200		5		5	5	report
2	UC	SRWM 603001	Scientific-Research work of a master	24	720				120		600		4	3	17		report
3		ATT	Additional types of training														
3.1	UC	FE	final examination	8	240				80		160				8		
1			Preparation and defense of a master's thesis														
		Total for MEP:		120	3600	225	480		320	450	2125	30	30	30	30		

**4.Competence of scientific and pedagogical magistracy
directions 7M071 – «Engineering»**

Description of competence, rus.	Type competence	№ competences
Knowledge of the history and philosophy of science development	CC	1
Ability to conduct a reasoned conversation on a wide range of scientific issues	CC	2
Ability to demonstrate broad-mindedness in matters of philosophy of science, psychology and pedagogy	CC	3
Ability to conduct a professional conversation in an international environment in English	CC	4
Be able to form and transform information flows during the formation of stages of transportation organization and operation of transport as a science	CC	5
Formation of students ' ability to work according to modern teaching methods	CC	6
The ability of undergraduates to use special computer products, quickly master modern computer programs.	CC	7
Ability to apply mathematical methods in professional activity in unity with information technologies	CC	8
Knowledge of techniques and methods for planning an experiment to establish reliable values	CC	9
Ability to use instrumental techniques, methods of planning and conducting scientific research	CC	10
Knowledge of the basics of scientific research, management of scientific projects, business solutions	CC	11
Ability to control the psychological climate in the production team	CC	12
Ability to select personnel based on professional suitability	CC	13
Ability to set and solve research tasks in the field of transport services	CC	14
Ability to work with scientific and special literature in search of solutions to scientific problems of transport services	CC	15
Capacity for professional growth and professional mobility	CC	16

5. Summary table showing the volume of disbursed loans in the context educational program:

Course of Study	Semester	Number of disciplines studied				Number of academic credits					Total	Total in academic hours	Amount	
		CS		MS		Theoretical classes	Teaching practice	Research scientific training	RWMDS	The final assessment			Exam	Report
		UC	OC	UC	OC									
I	1	3	3			30					30	900	6	
	2	1		2	1	19	2	5	4		30	900	4	2
II	3			2	3	27			3		30	900	5	1
	4							5	17	8	30	900		2
Total		4	3	4	4	76	2	10	24	8	120	3600	15	5

Information about disciplines

№	Name of the discipline	Brief description of the discipline	Amount of credit	Semester	Emerging competencies
1	Theoretical classes		88		
	Core Subjects Cycle: University component / Optional Component				
1.1	Core Subjects Cycle		35		
1)	University component (UC BD):		20		
	including:				
1.1.1	History and Philosophy of science	The course «History and philosophy of science» is compulsory for all specialties of the magistracy. It forms undergraduates' culture of scientific thinking, develops analytical skills and research activities, gives theoretical and practical knowledge necessary for the future scientist. The study of the discipline is important in an era of increasing urgent need for science and scientists. «History and philosophy of science» introduces the problem of the phenomenon of science as a subject of special philosophical analysis, forms knowledge about the history and theory of science; on the laws of science and the structure of scientific knowledge; on science as a profession and social Institute; on the methods of scientific research; on the role of science in the development of society.	5	1	<i>To be competent:</i> - organization and functioning of science; - in the production of knowledge, patterns of formation and development of scientific disciplines; - in the formulation and solution of problems arising in the course of research activities; - in the application of methodological and methodical knowledge, scientific research, pedagogical and educational work; - in writing scientific articles, abstracts, presentations at conferences, symposia.
1.1.2	Foreign Language (for specific purpose)	The main goal of the discipline is the systematic deepening of communicative competence in the framework of international standards of foreign language education based on the further development of the skills and abilities	5	1	<i>To be competent:</i> - work with lexicographic sources in a foreign language (traditional and on-line).

		<p>of active proficiency in English in the professional activities of the future master of sciences. Development of a master student skills:</p> <ul style="list-style-type: none"> - reading literature in English in the specialty for the receipt and transmission of scientific information; - registration of the extracted information in the form of translations, annotations, abstracts; - conducting conversations in English on topics related to the specialty and scientific work of the master's program student. 			
1.1.3	Tertiary Teaching	<p>The course "Pedagogy of Higher Education" is obligatory for all specialties of the magistracy. This course examines pedagogical science and its place in the system of human sciences, the modern paradigm of education, the system of higher education in Kazakhstan, education and the formation of the personality of a specialist, and management in education. An idea of the methodology of pedagogical science, methods and forms of education is given. The study of the discipline contributes to the disclosure of professional and communicative competence of the teacher. Discipline builds knowledge about the theory of learning, the content of education, the organization of the learning process, the organization of the Independent student work. It also forms ideas about new educational technologies, technology for compiling teaching materials. Discipline develops ideas about the theory of scientific activity, self-study student under the guidance of a teacher.</p>	5	1	<p><i>To be competent:</i></p> <ul style="list-style-type: none"> - solving problems of higher pedagogical education and prospects for its further development; - questions of the use of effective university technology education; - the main types of pedagogical communicative interaction; - solving actual psychological and pedagogical problems, evaluating the achieved results; - organization and management of students.
1.1.4	Managerial Psychology	Discipline examines the subject, nature, tasks and	3	2	<i>To be competent:</i>

		structure of management psychology, methods of psychological research and basic approaches to its study. Examines the psychology of the subject of management, the psychology of cognitive activity, perceptual, mnemonic, thought processes in management. The course forms ideas about etiquette in the activity of a modern business person, communicative competence of a manager, emotional and volitional states in management activities and ability to manage activities.			<ul style="list-style-type: none"> - formation of students' need for knowledge and skills of a managerial nature and professionally important qualities of future specialists; - formation of students' understanding of the basics of management; - the development of independence in the search for information; - the use of adequate methods of personality research; - practical use of the obtained psychological knowledge in various conditions of management.
1.1.5	Teaching practice	Pedagogical practice is conducted in order to form practical skills of teaching and learning methods. At the same time, undergraduates are involved in conducting classes in the bachelor's degree	2	2	<i>To be competent:</i> <ul style="list-style-type: none"> - in current problems of modern higher education and pedagogical science; - In the socio-psychological nature of educational activities;
2)	Optional Component		15		
	Module 2 Theoretical calculations for transport				
1.1.6	Theory of movement of transport technics	The subject “ Theory of movement of transport technics” examines the analysis of the operating conditions of vehicles, the influence of design parameters on the properties of the car related to its movement and safety, and considers the model of rectilinear and curvilinear movement of vehicles in various road conditions. Kinematics and dynamics of the interaction of individual components and assemblies of transport equipment, as well as the interaction of the latter with the environment, provide knowledge about the influence of these processes and their characteristics on the functional (operational) properties - technologi-	5	1	<i>To be competent:</i> <ul style="list-style-type: none"> - in analyzing the theory of motion of transport equipment; - controlling the movement of transport equipment and the influence of the parameter of transport equipment on the movement process; - in studying the physical properties of vehicles and systems; - characteristics of its interaction with the external environment, movement processes and motion control.

		cal, technical-economic and general technical qualities of a vehicle.			
1.1.7	The theory of operation of agricultural transport	The discipline is aimed at studying issues related to the characteristics of the transportation of agricultural goods by automobile, tractor and horse-drawn vehicles, as well as trains composed on their basis, technical, operational and technical and economic indicators of agricultural transport	5	1	<i>To be competent:</i> - in the modes of operation and determination of indicators of autonomous devices when performing loading and unloading work; - assembly and distribution operations, fertilizer application, distribution of feed, toxic chemicals, etc.
1.1.8	Forecasting and expert assessment of transport and transport technics	Content and structure of analysis and forecasting of transport systems. Requirements for the analysis of transport systems and technology. The essence of the analysis. Features of the use of system analysis. Methodological basis for the prediction of mechanisms and technology of vehicles (automobiles, pneumatic-wheeled tractors, locomotives, cars).	5	1	<i>To be competent:</i> - in the analysis of freight and commercial work; - in matters of international transportation on roads; - in transport planning of cities, environmental safety in transport; - in traffic management; - in carrying out methods for solving problems of forecasting and evaluating the technical level.
1.1.9	International requirements for car design	The discipline is aimed at studying issues related to the characteristics of the transportation of agricultural goods by automobile, tractor and horse-drawn vehicles, as well as trains composed on their basis, technical, operational and technical and economic indicators of agricultural transport	5	1	<i>To be competent:</i> - in matters of modern state and the development of the design of automobiles of the world; - production, operational, consumer requirements and safety and environmental requirements for the designs of cars in the world
1.1.10	Theory of transport processes and systems	The discipline is aimed at studying basic information from the theory of transport processes and systems, characterizing the main types of transport systems, features of their structure and	5	1	<i>To be competent:</i> - in the analysis of the theory of motion of transport equipment, traffic control of transport equipment and the in-

		functioning, methods of knowledge and research of transport systems, as well as practical examples.			fluence of the parameter of transport equipment on the process of movement; - in the analysis of freight and commercial work, in matters of international transport
1.1.11	Theory of calculating the main components and assemblies of the tractor	The theory of calculating the main components and assemblies of a tractor is a subject that studies the development stages of the main components and assemblies of a tractor, directions for improving the main components and assemblies of a tractor, calculating the main components and assemblies of a tractor taking into account economic and environmental requirements.	5	1	<i>To be competent:</i> - in calculating the parameters of the main components and assemblies of the tractor and their load and regulatory characteristics; - in ways of calculating the main components and assemblies of the tractor.
	Major Subjects Cycle: University component/ Optional component				
1.2	Major Subjects Cycle		53		
1)	University component		20		
1.2.1	Conflictology	Discipline examines the main categories of conflictology, the typology of conflict technology conflict management. The course studies theories of the behavior of an individual in a conflict, the technologies of effective communication and rational behavior in a conflict. Forms an understanding of the psychology of the negotiation process on conflict resolution, mediation as a technology for conflict resolution. Also considers conflicts in society, conflicts in organizations, conflicts and stress.	5	3	<i>To be competent:</i> - diagnosing and preventing conflicts. - the use of basic methods and technologies for the prevention and resolution of conflicts; - using the principles of analysis and management of organizational conflicts; - possession of various ways of resolving conflict situations on the basis of modern personnel management technologies.
1.2.2	Project management in the field of entrepreneurship	The discipline "Project management in the field of entrepreneurship" acquaints students with a history of the development of project management methods; studies methodical approaches to	5	2	<i>To be competent:</i> - the ability to independently acquire new information using modern technologies, ability to work in a team, lead

		decision-making on the development of a project concept, its structuring and evaluation; helps undergraduates to master the role and functions of a project manager at various stages of the project life cycle; introduces them to the organizational forms of project management and methods for their development and optimization. The discipline "Project Management" studies the tools for planning and monitoring project progress; assists undergraduates in acquiring and developing skills of research and creative work, economic modeling of projects using software tools.			people and obey, ability to negotiate; - to find and process information, use information tools and technologies, the ability to make calculations and draw conclusions; - possession of terminology, basic norms and standards regulating the activities of organizations in the field of project planning and management.
1.2.3	Methodology for forecasting and expert assessment of transport and transport techniques	Introduction to the methodology of experimental research planning, preparation and conduct of experiments. The tasks of processing experimental data, finding functional relationships, analyzing experimental data, expressing experimental laws with formulas, determining the degree of interconnection between phenomena, other methods of processing experimental data.	5	2	<i>To be competent:</i> - in the issues of experimental research methods and experimental data processing experimental research methods and experimental data processing; - identification of functional relationships and analysis of experimental results; - expression of experimental patterns through establishing formulas, as well as other experimental data processing methods
1.2.4	Modeling of business solutions	Acquaintance with the decision-making process, starting from formalization of the initial problem, through building and solving a mathematical model on a computer to analyzing the decision and forming a management decision. Formation of skills in the construction and solution of mathematical models and analysis of these solutions on a computer. Consideration of production, transport and financial models of	5	3	<i>To be competent:</i> able to independently conduct research using modern methods of mathematical modeling and analysis of the results of a scientific experiment

		tasks for the choice of management decisions.			
2)	Optional component		23		
Module 4 Operation of vehicles					
1.2.5	Design of the motor transport enterprise	The subject “Design of the motor transport enterprise” consists of students studying the state and prospects for the development of the production and technical base of vehicle enterprises, acquiring knowledge on the methods of technological design of motor transport enterprises. Types and functions of road vehicle enterprises (VE). The state and ways of development of the production and technical base (PTB) of AE enterprises. Methodology and features of designing vehicle enterprises (VE). Selection and analysis of source data. Calculation of the annual maintenance program, annual volume of maintenance and repair work and distribution by type and location of accumulation. Calculation of the number of production workers and employees.	6	2	<i>To be competent:</i> - in providing enterprises with technological processes and technical equipment; - in reconstruction of motor transportation enterprises and transition to a new form of organization.
1.2.6	Testing of car and tractor	Discipline studies the basic provisions and principles of testing agricultural machinery in the development, production and modernization of agricultural equipment. The content of types of assessments, functional indicators by types of assessments, methods for determining the values of functional indicators, methods of processing the obtained data and their analysis.	6	3	<i>To be competent:</i> - in the formation of test programs, the procedure for organizing a particular type of test; - settings and adjustments the devices, instruments and equipment to determine the criteria; - based functional indicators are studied.
1.2.7	Operation and maintenance of vehicles	The subject that studies the technology of maintenance and maintenance of transport equipment; methods of organizing an engineering and technical service for maintenance and	6	3	<i>To be competent:</i> - in the use of knowledge to solve the problems of technical operation of transport equipment;

		current repair of transport equipment; features of the technical operation of transport equipment in special climatic, industrial and road conditions.			- in analyzing the possibilities and limitations of service enterprises;
1.2.8	Operation and maintenance of agricultural transport	The subject that studies the technology of maintenance and maintenance of transport equipment in agriculture; methods of organizing an engine-ring and technical service for maintenance and current repair of transport equipment; features of the technical operation of transport equipment in special climatic, industrial and road conditions.	6	3	<i>To be competent:</i> - in the use of knowledge to solve the problems of technical operation of transport equipment in agriculture; - in analyzing the possibilities and limitations of service enterprises;
Module 5 Calculations and tests for transport					
1.2.8	Maintenance and repair of electrical equipment of cars and tractors	The subject examines materials on the operating conditions and methods of ensuring the operability of products and electrical equipment systems that are responsible for traffic safety, as well as consideration of the laws governing the recovery of products in the repair process, issues of ensuring environmental safety and the formation of a system of maintenance of products in extreme conditions, types of maintenance.	6	3	<i>To be competent:</i> - in operation and repair of electrical equipment for automobiles of tractors for main operational indicators of electrical equipment for automobiles of tractors in enterprises; - in organizational structure and work in energy farms and enterprises.
1.2.9	Modern diagnosis methods of cars and tractors	Discipline is aimed at future specialists acquiring theoretical knowledge of modern diagnosis methods of cars and tractors, as well as practical skills in conducting and organizing the structure and work in energy farms and enterprises, through the use of modern technical tools for diagnostics.	6	3	<i>To be competent:</i> - in solving technical problems of determining the economic efficiency of the adopted technical solutions. In matters of organization; - planning the conduct of all types of professional activities.
1.2.10	Installation and connection of thermoplastic polymer materials in pipeline transport and agricu-	The subject is governed for future specialists acquiring theoretical knowledge of modern methods of installation and connection of polymer materials, as well as practical skills in conducting the	5	3	<i>To be competent:</i> - in the design and laying of the pipeline route; - in performance of installation and

	Iture	connection of polymer pipelines and flat plate from thermoplastic, using modern technical means for welding and connecting (non-heated methods) of polymeric materials and to control it's jointing suture (obtained by thermal and non-heated methods).			welding works of pipelines from thermoplastics, assessment of quality of the performed works of the pipeline; - in the organization, planning, conduct of all types of professional activities.
1.2.11	Theory of calculating the main components and assemblies of the car	The theory of calculating the main components and assemblies of a vehicle is a subject that studies the stages of development of the main components and assemblies of a vehicle, directions for improving the main components and assemblies of a vehicle, calculating the main components and assemblies of a vehicle taking into account economic and environmental requirements.	5	3	To be competent: - in calculating the parameters of the main components and assemblies of the vehicle and their load and regulatory characteristics; - in ways of calculating the basic components and assemblies of the vehicle.
Educational program №2 «Research and problems in the use of agricultural transport»					
3)	Research scientific training	The research scientific training is conducted in order to get acquainted with the latest theoretical, methodological and technological achievements of domestic and foreign science, modern methods of scientific research, processing and interpretation of experimental data.	10	2,3	To be competent: - the ability to use skills in the organization of research and scientific work; - the ability to independently learn new research methods, to use the methods of science in their professional activities
2	Research work by a Master's Degree student		24		
1)	Research work of a master's student ,	The purpose of Research work of a master's student is to provide undergraduates with primary	24	1, 2, 3, 4	To be competent: - the ability to organize their work on a

	including an internship and the completion of a master 's thesis (RWM)	professional skills and skills for organizing, conducting and presenting the results of research work.			scientific basis, independently evaluate the results of their activities, possess the skills of independent work in the field of scientific research - ability to generalize, analyze, critically comprehend, systematize, predict when setting goals in the field of professional activity
4	Final assessment		8		
1)	Preparation and defense of the Master's thesis(PDMT)	The purpose of the Final assessment is to establish the level of competence formation of a graduate of a higher educational institution and his readiness to perform professional tasks	8	4	<i>To be competent:</i> - application of the obtained theoretical knowledge; - the ability to conduct research, systematize the results obtained and formalize them correctly
	TOTAL:		120		

¹Note:

Department number	Abbreviated	Name of the Department
1	AAF	Accounting, audit and Finance
2	MOA	Management and organization of agribusiness
3	Law	Law
4	WRR	Water resources and reclamation
5	MI	"Machine use" named after I. V. Sakharov
6	VT	Vocational training
7	MCAM	Mechanics and construction of agricultural machinery
8	AMT	Agrarian machinery and technology
9	ITMPH	Information technology, mathematics and physics
10	ESA	Energy saving and automation
11	LRI	Land resources and inventory
12	FRH	Forest Resources and Hunting
13	PPQ	Plant protection and quarantine
14	FL	Foreign languages
15	KRL	Kazakh and Russian languages
16	SSA	Soil science and agrochemistry
17	Ecol	Ecology
18	FVGNF	Fruit and vegetable growing and nut farming
19	Agr	Agronomy
20	BS	Biological safety
21	CVM	Clinical Veterinary Medicine
22	OSRB	Obstetrics, Surgery and Reproduction Biotechnology
23	MV	Microbiology and virology
24	VSEH	Veterinary and sanitary expertise and hygiene
25	FTS	Food technology and safety
26	BPFF	Beekeeping, poultry farming and fisheries
27	LPT	Livestock production technology
28	PhMB	"Physiology, Morphology and Biochemistry by N.O. Bazanova
29	HKCPK	History of Kazakhstan and culture of the peoples of Kazakhstan
30	PhES	Physical education and sport
31	MD	Military Department

Base of practice

№	Name of companies, enterprises, organizations	Contacts Тел, e-mail
1	LLP «E.C.T. Construction»	8-701-555-32-63
2	LLP «HIGER QUAZAR»	87022629219 info@higerquazar.kz
3	LLP «Almaty city bus fleet №2»	87273940561 avtopark2@list.ru
4	LLP «Railway transportation» Almaty city	87272799366
5	LLP «Almaz-Trans»	87272766112