

Joint Stock Company "Academy of Logistics and Transport"



APPROVE  
US ALT decision dated  
" 30 " 2023 (Protocol № 10)  
President-Rector  
Amirgaliyeva S.N.

**EDUCATIONAL PROGRAM**

**Name: "6B07116 Wagons"**

**Level of training: bachelor's degree**

**Code and classification of areas of study: 6B071 Engineering and Engineering trades**

**Code and group of educational programs: B 065-Transport equipment and technologies**

**Date of registration in the register: 25.02.2021 y.**

**Registration number: 6B07100344**

Almaty, 2023

## CONTENT

1. Information about the review, approval and approval of the program, developers, experts and reviewers	3
2. Normative references	5
3. Passport of the educational program	6
4. Competence model of a graduate	7
5. Matrix for correlating learning outcomes in an educational program with academic disciplines/modules	11
6. The structure of the educational program of the bachelor's degree	14
7. Working curriculum for the entire period of study	15
8. Catalog of disciplines of the university component	17
9. Catalog of elective component disciplines	23
10. Expert opinions	30
11. Reviewer's Conclusion	32
12. Letters of recommendation	33
13. Review and approval protocols	34
14. Approval sheet	40
15. Change registration sheet	41

# 1. INFORMATION ABOUT CONSIDERATION, APPROVAL AND APPROVAL OF THE PROGRAM, DEVELOPERS, EXPERTS AND REVIEWERS

## 1 РАЗРАБОТАНО:

Ассистент-профессор, к.т.н.  
(координатор)

Кибитова Р.К.

Заведующий кафедрой «ПС», к.т.н.

Аширбаев Г.К.

Профессор, д.т.н.

Солоненко В.Г.

Профессор АЛит, д.т.н.

Мусаев Ж.С.

Ассоциированный профессор, к.т.н.

Ивановцева Н.В.

Ассоц. профессор АЛит, к.т.н.

Сүлеева Н.З.

Директор филиала «Вагоноколесные мастерские станции Алматы-1» ТОО «Камкор Вагон»

Жасокбай Р.Г.

Студент 3-го курса, гр. В-20-1к

Имангазина С.А.

## 2 ЭКСПЕРТЫ:

Генеральный директор Казахской Ассоциации перевозчиков и операторов вагонов (контейнеров)



Адамбаева С.М.

Генеральный директор ТОО «Ремвагон»



Кадырсизов С.У.

## 3 РЕЦЕНЗЕНТ:

Главный инженер эксплуатационного вагонного депо филиала ТОО «КТЖ-Грузовые перевозки» «Алматинское отделение ГП»



Абубакиров Р.Е.

## 4 РАССМОТРЕНО И РЕКОМЕНДОВАНО:

Заседание АК (кафедры) «Подвижной состав»  
Протокол № 1 от «14» 05 2023 г.

Аширбаев Г.К.

Заседание КОК-УМБ «Транспортная инженерия»  
Протокол № 7 от «15» 05 2023 г.

Чигамбаев Т.О.

Заседание УМС  
Протокол № 40 от «29» 05 2023 г.

Жармагамбетова М.С.

**5 APPROVED** by the decision of the Academic Council dated  
«30» March 2023y. №13

**6 UPDATED 28.04.2023.ж.**

## 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 (with amendments and additions as of March 27, 2023).

2. The National Qualifications Framework, approved by the protocol dated March 16, 2016, by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.

3. The sectoral qualifications framework of the field of "Education", approved by the Minutes of the meeting of the sectoral 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 № 3.

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

5. Qualification directory of 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 №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 04, 2023 No. 145).

7. Classifier of areas for training 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 №569 (as amended and supplemented as of June 05, 2020).

8. Algorithm for inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education, approved by the 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 №536).

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

10.

Professional standard: "Technical operation, maintenance and repair of freight cars (station level)", NCE RK "Atameken", approved by Order No. 256 dated 20.12.2019.

11. Professional standard: "Management and control of traffic safety in railway transport", NCE RK "Atameken", approved by Order No. 256 dated 20.12.2019.

12. Professional standard: "Operation with wagons (containers)" NCE RK "Atameken", approved by Order No. 256 dated 20.12.2019.

### 3. PASSPORT OF THE EDUCATIONAL PROGRAM

<b>№</b>	<b>Field name</b>	<b>Примечание</b>
1	Registration number	6B07100344
2	Code and classification of the field of education	6B07 Engineering, manufacturing and construction industries
3	Code and classification of areas of study	6B071 Engineering and Engineering trades
4	Code and group of educational programs	B 065-Transport equipment and technologies
5	Name of the educational program	6B07116 Wagons
6	Type of educational program	Current
7	The purpose of the educational program	Training of qualified and competitive specialists who possess the theoretical and practical skills necessary for the implementation of professional activities based on advanced technologies of design, production, operation, maintenance and repair of wagons.
8	ISCED level	6
9	NQF level	6
10	IQF level	6
11	Distinctive features of the EP	There is not
	Partner university (JEP)	-
	Partner university (TDEP)	-
12	Form of study	Full-time, full-time with transfer to DO
13	Language of instruction	Kazakh, Russian
14	Volume of loans	241
15	Awarded Academic Degree	Bachelor of Engineering and Technology in the educational program «6B07116 – Wagons»
16	Availability of an application to the license for the direction of personnel training	KZ12LAA00025205 (005)
17	Availability of EP accreditation	Available
	Name of the accreditation body	Independent agency for accreditation and rating
	Validity of accreditation	27.05.2021 - 26.05.2026

## 4. COMPETENCE MODEL OF A GRADUATE

### Objectives of the educational program:

1. Formation of a person capable of self-improvement and professional growth with diverse humanitarian and natural science knowledge and interests.
2. Formation of the ability to critically rethink the accumulated experience, change, if necessary, the profile of their professional activities, awareness of the social significance of their future profession, having a high motivation to perform professional activities.
3. Formation of the ability to find a compromise between various requirements (cost, quality, safety and deadlines) in long-term and short-term planning and make optimal decisions in the field of operation and repair of wagons, their aggregates, systems and elements; possess a culture of thinking.
4. Formation of the ability to generalize, analyze, perceive information, set goals and choose ways to achieve it.
5. Assistance in the formation of the graduate's readiness to: develop design documentation for the creation and modernization of wagons; perform design work on the creation and modernization of wagons; develop technical documentation and methodological materials, proposals and measures for the creation and modernization of wagons.
6. Formation of graduates' readiness to conduct technical and economic analysis, comprehensive justification of decisions taken and implemented in the field of operation and repair of wagons, their aggregates, systems and elements; application of the results in practice, striving for self-development, improving their qualifications and skills.
7. Assistance in the formation of graduates' readiness for the economical and safe use of natural resources, energy and materials during the operation and repair of wagons.

### Learning outcomes:

- ON1 - To correlate socio-ethical norms and the role of spiritual processes in modern society, interpersonal and legal interests of the parties in the implementation of professional activities.
- ON2 - Interpret processes and models of transport equipment objects based on knowledge of natural science disciplines.
- ON3 - Formulate arguments and solve problems of the studied area, using professional vocabulary and basic grammar in oral and written forms in the state and foreign languages.
- ON4 - Integrate the achievements of modern computer technology, software and IT technologies in all areas of the transport industry.
- ON5 - Develop a set of measures to ensure the safety of life, environmental protection and labor protection, based on the analysis of harmful and dangerous factors at the enterprises of the wagon industry.
- ON6 - To make managerial decisions of an organizational and economic nature based on the analysis of supply and demand, the dynamics of the transport and logistics market.
- ON7 - Solve technical problems of strength, reliability and stability based on the theorems of the principles and methods of engineering disciplines.
- ON8 - To determine the practical application of electrical equipment and electronics on rolling stock based on the analysis of promising technologies.
- ON9 - To predict reliability indicators of parts and components of rolling stock using modern methods and diagnostic tools based on regulatory and technical documentation and technical standards.
- ON10 - Evaluate the technical condition and parameters of the rolling stock elements in order to optimize their design, technical characteristics and usage indicators.
- ON11 - Develop the technological process of maintenance, repair and diagnostics of parts and components of cars with the use of means of mechanization, diagnostics and automation.

ON12 - Analyze the indicators of the use of rolling stock in order to ensure its safe operation when interacting with railway transport infrastructure facilities.

**Area of professional activity:** Railway transport, transport equipment and technologies.

**Objects of professional activity:**

- Local executive authorities in the field of railway transport and their regional structures;
- Organizations and enterprises of the transport industry in the field of management, operation, maintenance, repair of wagons, urban rail transport and subways, as well as industrial transport;
- Organizations and enterprises of the transport industry in the field of technologies of material processing production in the maintenance, repair of wagons, rail urban transport, subways and industrial transport.

**Types of professional activity:**

- production and technological;
- organizational and managerial;
- service and operational;
- project.

**Functions of professional activity:**

- 1) Organization of operation, repair, diagnostics of wagons, control over safe operation;
- 2) Development and implementation of technological processes of maintenance and repair, the use of standard methods for calculating the reliability of elements of wagons.
- 3) Management of production processes, analysis of the results of production activities;
- 4) Management of work on the inspection and repair of wagons;
- 5) Quality control of all types of repair of wagons, control of the availability, condition and use of control and measuring instruments;
- 6) Analysis and evaluation of production and non-production costs or resources for high-quality maintenance and planned types of repairs.
- 7) Development of new technologies, development of design and technological documentation using computer technologies;
- 8) Calculation of strength and stability under various types of loading, development of machine designs using design methods and fundamentals, selection of materials for the manufacture of machine parts, justification of technical solutions;
- 9) Development of technical specifications and technical specifications for projects of wagons or their components, technological processes, automation tools using information technologies and computer programs;
- 10) Design of new samples of the car, its components, aggregates, equipment, technological processes corresponding to the latest achievements of science and technology, safety requirements.

**List of positions of a specialist:** master of the section (shop) of the wagon depot; engineer; repair engineer; engineer of the technical department; specialist in non-destructive testing, specialist in operational management of the team for the repair and maintenance of wagons; mechanic of a refrigerated wagon; specialist in electrical installations; train electrician.

And also according to the approved Professional Standards:

- Head of the operational car depot;
- Deputy Head of the operational car depot;
- Chief engineer of the operational car depot;
- Leading engineer of the operational car depot;
- Instructor of industrial training of the point of maintenance of wagons;
- Engineer technologist of the first category of the production department;



- Car receiver;
- Manager for providing customers with wagons (containers);
- Manager for the management of wagons (containers);
- Railway Rolling Stock Engineer;
- Regional Traffic Safety Auditor;
- Head of the Railway Traffic Safety Service;
- Traffic Inspector (by levels);
- Chief Traffic Safety Engineer (by levels).

**Professional certificates received at the end of training:** A locksmith for the repair of cars, a conductor of a passenger wagon.

**Requirements for the previous level of education:** general secondary, technical and vocational, post-secondary, higher education (bachelor's degree).

In the process of training, students undergo various types of professional practice:

- educational;
- production;
- undergraduate.

### **Educational practice.**

During the internship, students should get an idea of the role of transport equipment in the country's economy, the variety of vehicles, the importance of mechanization and automation in increasing labor productivity, as well as an idea of the main technological processes of operation, maintenance and repair of transport equipment and technology of transport enterprises.

### **Industrial practice 1.**

During the period of industrial practice, the student receives certain practical knowledge, skills and abilities according to the chosen educational program.

The objectives of the internship are; deepening and consolidation of theoretical knowledge gained in the course of training; obtaining skills for the practical use of professional knowledge gained during theoretical training; training in skills for solving practical and managerial tasks; familiarity with the specifics of a bachelor's professional activity in a particular production; formation of a professional position of a specialist, style of behavior, mastering professional ethics.

The tasks of industrial practice are to consolidate, deepen and systematize the knowledge gained in the study of theoretical basic and major disciplines at a particular enterprise or organization and to acquire initial practical experience.

### **Undergraduate practice 2.**

The content of undergraduate practice is determined by the theme of the thesis (project). During the period of pre-diploma practice, the student collects factual material on the production (professional) activities of the enterprise (organization) and uses it in the development of the graduation project (work). The practice provides for the development of a given problem (the topic of the thesis) on the materials of the activities of a particular enterprise (organization) with the student's independent formulation of conclusions, proposals, recommendations, etc. In the process of practice, the student must demonstrate his knowledge and skills of a specialist, organizational skills, decision-making skills, performance discipline, responsibility, initiative.

The final certification is carried out in the form of writing and defending a thesis (project) or preparing and passing a comprehensive exam. The purpose of the final certification is to evaluate the learning outcomes and mastered competencies achieved upon completion of the study of the educational program of higher education.

The thesis (project) aims to identify and evaluate the analytical and research abilities of the graduate and is a summary of the results of the student's independent study of an actual problem in the field of the chosen specialty. The comprehensive exam program reflects the integrated knowledge and key competencies that meet the requirements of the labor market in accordance with the educational program of higher education.

**5. MATRIX OF CORRELATION OF LEARNING OUTCOMES IN THE EDUCATIONAL PROGRAM WITH EDUCATIONAL DISCIPLINES / MODULES**

№	Name of the discipline	Amount of credits	Matrix for correlating learning outcomes in an educational program with academic disciplines											
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	History of Kazakhstan	5	+											
2	Philosophy	5	+											
3	Foreign language	10			+									
4	Kazakh (Russian) language	10			+									
5	Information and communication technologies	5				+								
Socio-Political Knowledge Module		8												
6	Sociology	2	+											
7	Cultural studies	2	+											
8	Political Science	2	+											
9	Psychology	2	+											
10	Physical Culture	8	+											
	Module of the component of choice													
11	Ecology and life safety	5					+							
12	Scientific research methods	5		+	+									
13	Basics of economics and entrepreneurship	5						+						
14	Basics of law and anti-corruption culture	5	+											
University component														
15	Engineering Mathematics	9		+										
16	Applied Physics	9		+										
17	Labor protection	6					+							
18	Electrical engineering and the basics of electronics	6		+						+				
19	Fundamentals of computer modeling	6				+								
20	Structural materials in transport engineering	6		+							+			
21	Theoretical mechanics	6							+					

№	Name of the discipline	Amount of credits	Matrix for correlating learning outcomes in an educational program with academic disciplines											
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
22	Machine parts and design basics	6							+					
23	Educational practice	2		+		+			+					
	Component of choice													
24	Fundamentals of calculating the strength of machines and mechanisms	6							+					
25	Applied Mechanics	6							+					
26	Heat engineering	6		+										
27	Fluid and gas mechanics, hydroand pneumatic drive	6		+										
28	Methods of nondestructive control of the rolling stock	9									+		+	
29	Theory of automatic control	9		+									+	
30	Dynamics of wagons	6				+						+		+
31	IT technologies in transport	6				+								+
32	Ensuring traffic safety on transport	6						+						+
33	Organization of operational work of the railway section	6						+						+
34	Rolling stock and railway infrastructure	9										+		+
35	Transport equipment and means of mechanization	9										+		+
University component														
36	Energy installations of transport equipment	6		+								+		+
37	Bases of reliability of the rolling stock	6							+		+			
38	Technology repair wagons	9									+		+	
39	Automation and mechanization of repair of wagons	9									+		+	
40	Design of wagons	6							+			+		

№	Name of the discipline	Amount of credits	Matrix for correlating learning outcomes in an educational program with academic disciplines											
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
41	Of the automatic wagons and the safety of train movement	6										+		+
42	Industrial practice 1	3									+		+	+
43	Industrial practice 2	4	+	+	+	+	+	+	+	+	+	+	+	+
Component of choice														
44	Equipment and technology of welding and surfacing works	6									+		+	
45	Inclusive transport infrastructure	6	+									+		+
46	Management of wagon operation processes	9						+					+	+
47	Principles of computer-aided design of wagons	9				+			+			+		
48	Life support systems for passenger cars	7									+	+	+	+
49	Automation of technological processes	7				+							+	
50	Managerial Economics	3						+						
51	Transport logistics	3		+				+						
52	Resource saving in transport	3											+	+
53	Time -management	3						+						
54	Fundamentals of rolling stock design	3				+						+		
55	PowerBI Business Analytics	3				+		+						
56	Final examination	8	+	+	+	+	+	+	+	+	+	+	+	+

## 6. STRUCTURE OF THE BACHELOR'S EDUCATIONAL PROGRAM

№ p/n	Name of cycles of disciplines	General labor intensity	
		in academic hours	in academic credits
1	Cycle of general education disciplines (GED)	1680	56
1)	<b>Required Component</b>	<b>1530</b>	<b>51</b>
	History of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
	Kazakh (Russian) language	300	10
	Information and Communication Technologies	150	5
	Module of socio-political knowledge (sociology, political science, cultural studies, psychology)	240	8
	Physical Culture	240	8
2)	<b>University component and (or) elective component</b>	<b>150</b>	<b>5</b>
2	Cycle of basic disciplines (BD)	at least 5280	at least 176
1)	University component and (or) optional component		
2)	Professional practice		
3	Additional types of training (ADT)		
1)	<b>Component of choice</b>		
4	Final examination	at least 240	at least 8
	Total	<b>at least 7200</b>	<b>at least 240</b>

# 7. WORKING CURRICULUM FOR THE WHOLE TERM OF TRAINING

Form of study: full-time

JSC "Academy of Logistics and Transport"  
Educational Plan

Field of study: 6B071 Engineering and Engineering trades



Duration of study: 4 years

Group of educational programs: B065 Transport equipment and technologies

Name of the educational program: 6B07116 -Wagons

Degree: Bachelor of Engineering and Technology

Admission: 2023 год

№	Discipline code	Name of cycles and disciplines	Total labor intensity		Form of control, semester		The amount of study load, contact hours						Distribution by semester								Securing the chair								
			in academic hours	in academic credits	Exam	CP (CW)	Total hours	Classroom			IWS			1 course		2 course		3 course		4 course									
								lectures	practical	laboratory	IWSGT	IWS	15 week sem.	15 week sem.	15 week sem.	15 week sem.	15 week sem.	15 week sem.	15 week sem.	7 week sem.		8 week sem.							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23							
<b>1</b>																													
<b>CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)</b>																													
Required Component			1530	51			1530	120	358	15	120	917	21	16	7	7	0	0	0	0	0	0							
1.1.1.	23-0-B-OK-İK	History of Kazakhstan	150	5	3		150	30	15		8	97			5								SHD&PE						
1.1.2.	23-0-B-OK-Fil	Philosophy	150	5	4		150	30	15		8	97				5							SHD&PE						
1.1.3.	23-0-B-OK-IYa	Foreign language	300	10	1,2		300		90		16	194	5	5									LT						
1.1.4.	23-0-B-OK-K(R)Ya	Kazakh (Russian) language	300	10	1,2		300		90		16	194	5	5									LT						
1.1.5.	23-0-B-OK-İKT	Information and Communication Technologies	150	5	1		150	30		15	8	97	5										ICT						
1.1.6.	Module of socio-political knowledge		240	8	1,2		240								4									SHD&PE					
	23-0-B-OK-Sotz	Sociology						7	15		8	30																	
	23-0-B-OK-Kul	Cultural studies						8	15		8	29																	
	23-0-B-OK-Pol	Political Science						7	15		8	30						4											
1.1.7.	23-0-B-OK-FK	Physical Culture	240	8	1,2,3,4		240		88		32	120	2	2	2	2							SHD&PE						
1.2.	Component of choice		150	5			150	30	15	0	8	97	0	0	5	0	0	0	0	0	0	0							
1.2.1.	Module of the component for choosing a GED		150	5	3		150	30	15	0	8	97	0	0	5	0	0	0	0	0	0	0	0	SHD&PE					
	23-0-B-KV-EBGD	Ecology and life safety																											
	23-0-B-KV-MNI	Scientific research methods																											
	23-0-B-KV-OEIP	Basics of economics and entrepreneurship																											
	23-0-B-KV-OPAK	Basics of law and anti-corruption culture																											
TOTAL FOR THE CYCLE OF THE GED			1680	56			1680	150	373	15	128	1014	21	16	12	7	0	0	0	0	0	0							
<b>2</b>																													
<b>CYCLE OF BASIC DISCIPLINES (BD)</b>																													
University component			1680	56			1680	270	210	60	64	1016	9	15	18	2	6	0	6	0	0								
2.1.1.	23-0-B-VK-İM	Engineering Mathematics	270	9	2		270	45	45		8	172		9									GE						
2.1.2.	23-0-B-VK-PF	Applied Physics	270	9	1		270	45	30	15	8	172	9										GE						
2.1.3.	23-0-B-VK-OT	Labor protection	180	6	7		180	30	15	15	8	112									6		MV&LS						
2.1.4.	23-0-B-VK-EOE	Electrical engineering and the basics of electronics	180	6	4		180	30	15	15	8	112			6								E						
2.1.5.	23-0-B-VK-OKM	Fundamentals of computer modeling	180	6	2		180	30	30		8	112		6									ICT						
2.1.6.	23-0-B-VK-KMTM	Structural materials in transport engineering	180	6	3		180	30	15	15	8	112			6								MV&LS						
2.1.7.	23-0-B-VK/KV-TMeh	Theoretical mechanics	180	6	3		180	30	30		8	112			6								SE						
2.1.8.	23-0-B-VK-DMOK	Machine parts and design basics	180	6	5		180	30	30		8	112					6						MV&LS						
2.1.9.	23-0-VK-Upr	Educational practice	60	2	4		60									2							RS						
2.2.	Component of choice		1260	42			1260	210	165	45	48	792	0	0	0	21	9	12	0	0	0	0							
2.2.1.	23-0-B-KV-ORPMM	Fundamentals of calculating the strength of machines and mechanisms	180	6	4		180	30	15	15	8	112				6							SE						
	23-0-B-KV-PM	Applied Mechanics																											
2.2.2.	23-0-B-KV-Tep	Heat engineering	180	6	3		180	30	15	15	8	112				6							RS						
	23-0-B-KV-MGGGP	Fluid and gas mechanics, hydroand pneumatic drive																											
2.2.3.	23-0-B-KV-MNKPS	Methods of nondestructive control of the rolling stock	270	9	5		270	45	30	15	8	172				9							RS						
	23-0-B-KV-TAU	Theory of automatic control																											
2.2.4.	23-16/37-B-KV-DV	Dynamics of wagons	180	6	6		180	30	30		8	112					6						RS						
	23-0-B-VK(KV)-İTTT	IT technologies in transport																											





## 8. CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT

### EDUCATIONAL PROGRAM

### 6B07116 - WAGONS

**Level of education: bachelor's degree**

**Duration of study: 4 years**

**Year of admission: 2023.**

Cycle	Component	Name of discipline	Total labor input		Semester	Learning outcomes	Brief description of the discipline	Prerequisites	Post requisites
			in academic hours	in academic credits					
2	3	4	5	6	7	8	9	10	11
BD	UC	Engineering Mathematics	270	9	2	ON2	Mastering the mathematical apparatus for solving theoretical and applied problems of a specific profile, getting an idea of mathematical modeling and interpretation of the solutions obtained. The questions of linear algebra, analytical geometry, mathematical analysis, differential equations, series theory are considered. Calculation and graphic work is performed within the discipline. Methods of active learning – teamwork, "brainstorming".	Basic school education in mathematics	Heat engineering, Theoretical mechanics, Machine parts and design basics, Fundamentals of Economics and Entrepreneurship Electrical engineering and the basics of electronics, Fundamentals of calculating the strength of machines and mechanisms, Theory of automatic control, Automation of technological processes, Dynamics of wagons, profile disciplines of the EP
BD	UC	Applied Physics	270	9	1	ON2	Formation of students' skills and abilities when using fundamental laws, theories of classical and modern physics, as well as methods of physical research, thinking, scientific worldview, with independent cognitive activity. be able to simulate physical situations using computer technology and ideas about the modern natural-science picture of the world. As part of the discipline, settlement and graphic work is performed. Labs are performed on the Coursera platform. Methods of active learning - teamwork, "brainstorming".	Basic school education in physics	Structural materials in transport engineering. Теплотехника, Theoretical mechanics, Machine parts and design basics, Electrical engineering and the basics of electronics, Fundamentals of calculating the strength of machines and mechanisms, Theory of automatic control, Automation of technological processes, Fluid and gas mechanics, hydro and pneumatic drive, Methods of non-destructive testing of rolling stock, Transport equipment and means of mechanization, Rolling stock and railway infrastructure, Bases of reliability of the rolling stock, Dynamics of wagons, profile disciplines of the EP

2	3	4	5	6	7	8	9	10	11
BD	UC	Labor protection	180	6	7	ON5	Training of specialists on the theoretical and practical foundations of safety, safety and facilitation of working conditions at its maximum productivity, on the legislative and regulatory framework in the field of labor protection. Teaching methods - analysis of specific situations (case-study), group discussions.	Ecology and life safety	Production practice 1, Production practice 2
BD	UC	Electrical engineering and the basics of electronics	180	6	4	ON2, ON8	Studies electrical circuits of direct, alternating and three-phase currents, the principle of operation, purpose and rules of operation of a transformer and electrical machines, methods of measuring electrical quantities, the use of semiconductor diodes in rectification circuits and logic elements. As a result of studying the discipline, students should be able to apply the basic laws and ratios of electrical circuits, read electrical and electronic circuits, understand the purpose of the main components of electrical equipment and electronic circuits, evaluate the accuracy of measurement tools and results, and carry out verification of electrical measuring devices. Within the framework of the discipline, interactive teaching methods, computational and analytical method, and the method of case tasks are used.	Engineering Mathematics, Applied Physics	Theory of automatic control, Automation and mechanization of repair of wagons, Automation of technological processes, Equipment and technology of welding and surfacing works, Of the automatic wagons and the safety of train movement.
BD	UC	Fundamentals of computer modeling	180	6	2	ON4	Competencies are formed on the purpose of modeling tools, hardware and software tools, as well as in the development of object models for various purposes, as well as the programming languages Python, Java, etc. Within the framework of the discipline, interactive teaching methods, the calculation-analytical method, the case-task method, game methods are used.	Information and communication technologies	Machine parts and design basics, IT technologies in transport, Principles of computer-aided design of wagons, Fundamentals of rolling stock design
BD	UC	Structural materials in transport engineering	180	6	3	ON2, ON9	The discipline studies the structure, properties and labeling of metals and non-metallic materials, methods of their application and principles of processing materials by modern methods, classification of structural and raw materials, methods of testing materials, operational reliability and durability of transport equipment. Within the framework of the discipline, interactive teaching methods, the computational and graphical method are used.	Engineering Mathematics, Applied Physics	Machine parts and design basics, Fundamentals of calculating the strength of machines and mechanisms, Rolling stock and railway infrastructure, Design of wagons, Technology repair wagons, Equipment and technology of welding and surfacing works

2	3	4	5	6	7	8	9	10	11
BD	UC	Theoretical mechanics	180	6	3	ON7	To familiarize with the basic concepts, laws and theorems that make it possible to compose and study equations describing the behavior of mechanical systems, the development of logical thinking and understanding that the laws of mechanics express the laws of mechanical motion of bodies expressed in mathematical form, the ability to record a specific phenomenon in mathematical form, the formation of practical skills in applying the basic methods of mechanics in the study of motion and balances of mechanical systems in the study of disciplines of the professional cycle and solving specific problems that one has to face in professional activity. Methods of active training – execution and protection of individual calculation and graphic works.	Engineering Mathematics, Applied Physics	Machine parts and design basics, Fundamentals of calculating the strength of machines and mechanisms, Applied mechanics. Of the automatic wagons and the safety of train movement. Dynamics of wagons, Design of wagons, Подвижной состав и инфраструктура железных дорог, Transport equipment and means of mechanization, Life support systems for passenger wagons
BD	UC	Machine parts and design basics	180	6	5	ON7	Studies the basics of theory, calculation and design of parts and assemblies of general-purpose machines, mechanical gears, joints, shafts and axles, bearings and couplings, machine drives, standards and professional standards in the design of components, features and characteristics of structural materials and manufacturing technologies of machine parts. The discipline uses interactive teaching methods, open and closed tests.	Engineering Mathematics, Applied Physics Theoretical mechanics, Structural materials in transport engineering, Fundamentals of calculating the strength of machines and mechanisms, Applied mechanics	Of the automatic wagons and the safety of train movement, Principles of computer-aided design of wagons, Life support systems for passenger wagons, Fundamentals of rolling stock design
BD	UC	Educational practice	60	2	4	ON2, ON4, ON7	The organization of educational practice is aimed at providing bachelors with familiarization with the main directions, objects, areas of professional activity and profiles of training and consolidation of theoretical material.	Structural materials in transport engineering	Production practice 1, 2, Bases of reliability of the rolling stock, Equipment and technology of welding and surfacing works. Of the automatic wagons and the safety of train movement, Design of wagons.
PD	UC	Energy installations of transport equipment	180	6	5	ON2, ON10, ON12	Formation of knowledge about the purpose, structure and principle of operation of various types of power plants, processes occurring in their systems. Acquisition of skills of effective operation, ways to improve their basic technical, economic, energy and environmental indicators. Methods of calculation and experimental studies of power plants are considered, taking into account the requirements of their reliability, efficiency and environmental protection.	Engineering Mathematics, Applied Physics, Electrical engineering and the basics of electronics	Life support systems for passenger wagons, Final certification

2	3	4	5	6	7	8	9	10	11
PD	UC	Bases of reliability of the rolling stock	180	6	7	ON7, ON9	Formation of skills for forecasting reliability indicators of parts and components of railway rolling stock. The main provisions of the theory of rolling stock reliability are studied: reliability indicators, methods and practical examples of their calculation; methods for calculating the reliability of complex systems, tests for the reliability of rolling stock equipment; issues of ensuring the required level of reliability, analysis of the reliability of rolling stock equipment in operation. Interactive teaching methods are used, as well as elements of dual training.	Engineering Mathematics, Applied Physics Fundamentals of calculating the strength of machines and mechanisms, Design of wagons, Methods of non-destructive testing of rolling stock	Automation and mechanization of repair of wagons, Production practice 2, Final certification
PD	UC	Technology repair wagons	270	6	7	ON9, ON11	Formation of skills for the development of rational technological processes for the repair of wagons. The content of the discipline is based on the requirements of regulatory and technical documents in the field of repair of wagons in the Republic of Kazakhstan. It consists of the following modules: production and technological processes; preparation for repair; restoration methods; repair of wagon assemblies; requirements for the reliability of wagon structures, quality control of repair work. Used: laboratory diagnostic equipment and tools; interactive teaching methods; elements of dual training.	Design of wagons, Methods of non-destructive testing of rolling stock	Automation and mechanization of repair of wagons, Production practice 2, Final certification
PD	UC	Automation and mechanization of repair of wagons	270	90	8	ON9, ON11	Formation of skills in designing technological processes for manufacturing and repairing parts, assembly units and wagons in general, taking into account optimal automation and mechanization of the work performed. It consists of the following modules: automation and mechanization of production in modern conditions: principles of automatic regulation and control of technological processes during the repair of wagons; quality indicators of the automatic control process. Used: interactive teaching methods, elements of dual training.	Theory of automatic control, Design of wagons, Of the automatic wagons and the safety of train movement, Bases of reliability of the rolling stock, Equipment and technology of welding and surfacing works, Technology repair wagons	Production practice 2, Final certification
PD	UC	Design of wagons	180	6	5	ON7, ON10	Formation of skills for assessing the technical characteristics of wagons based on the requirements of regulatory and technical documentation, using the basic methods of calculating wagons. It consists of the following modules: the main types and parameters of freight and passenger cars and their design features, determination of technical and economic indicators of various types of cars; calculations of components and parts of cars for strength; prospects for modernization and optimization of car designs. Used: interactive teaching methods, elements of dual training.	Engineering Mathematics, Applied Physics, Structural materials in transport engineering, Theoretical mechanics, Fundamentals of calculating the strength of machines and mechanisms, Подвижной состав и инфраструктура железных дорог, Transport equipment and means of mechanization	Life support systems for passenger wagons, Bases of reliability of the RS, Of the automatic wagons and the safety of train movement, Technology repair wagons, Ensuring traffic safety on transport, Automation and mechanization of repair of wagons, Principles of computer-aided design of wagons, Dynamics of wagons

2	3	4	5	6	7	8	9	10	11
PD	UC	Automation and mechanization of repair of wagons	270	90	8	ON9, ON11	Formation of skills in designing technological processes for manufacturing and repairing parts, assembly units and wagons in general, taking into account optimal automation and mechanization of the work performed. It consists of the following modules: automation and mechanization of production in modern conditions; principles of automatic regulation and control of technological processes during the repair of wagons; quality indicators of the automatic control process. Used: interactive teaching methods, elements of dual training.	Theory of automatic control, Design of wagons, Of the automatic wagons and the safety of train movement, Bases of reliability of the rolling stock, Equipment and technology of welding and surfacing works, Technology repair wagons	Production practice 2, Final certification
PD	UC	Design of wagons	180	6	5	ON7, ON10	Formation of skills for assessing the technical characteristics of wagons based on the requirements of regulatory and technical documentation, using the basic methods of calculating wagons. It consists of the following modules: the main types and parameters of freight and passenger cars and their design features, determination of technical and economic indicators of various types of cars; calculations of components and parts of cars for strength; prospects for modernization and optimization of car designs. Used: interactive teaching methods, elements of dual training.	Engineering Mathematics, Applied Physics, Structural materials in transport engineering, Theoretical mechanics, Fundamentals of calculating the strength of machines and mechanisms, Подвижной состав и инфраструктура железных дорог, Transport equipment and means of mechanization	Life support systems for passenger wagons, Bases of reliability of the rolling stock, Of the automatic wagons and the safety of train movement, Technology repair wagons, Ensuring traffic safety on transport, Automation and mechanization of repair of wagons, Principles of computer-aided design of wagons, Dynamics of wagons
PD	UC	Of the automatic wagons and the safety of train movement	180	6	6	ON10, ON12	Formation of skills: the use, diagnosis and analysis of the causes of malfunctions of the braking equipment of cars; determination of reliability and safety criteria for the operation of the braking equipment of cars; performing calculations to determine the availability of train brakes. The content of the discipline is based on the requirements of regulatory and technical documents in the field of operation of car brakes and ensuring transport safety on the railways of the Republic of Kazakhstan. Used: laboratory training and training complex of brake control; interactive teaching methods; elements of dual training.	Engineering Mathematics, Applied Physics, Design of wagons, Theoretical mechanics, Machine parts and design basics, Rolling stock and railway infrastructure, Transport equipment and means of mechanization	Automation and mechanization of repair of wagons, Technology repair wagons

2	3	4	5	6	7	8	9	10	11
PD	UC	Production practice 1	90	3	6	ON9, ON11, ON12	The main objectives of industrial practice are: consolidation of theoretical knowledge and practical skills in the chosen educational program in production conditions, acquisition of organizational work experience, obtaining a working specialty, formation of practical skills and competencies in the process of mastering the bachelor's program. Industrial practice for students is an important component of the educational process, allowing them to navigate the labor market and find themselves in their future profession.	Educational practice, Fundamentals of rolling stock reliability, Equipment and technology of welding and surfacing works, Of the automatic wagons and the safety of train movement, Design of wagons	Production practice 2, Final certification
PD	UC	Production practice 2	120	4	9	ON1-ON12	The purpose of industrial practice 2 for bachelors is to ensure the relationship between the theoretical knowledge gained during the assimilation of the chosen educational program and practical activities. The objectives of the pre-graduate practice are to consolidate and deepen the theoretical knowledge gained by students in the learning process, to collect information for writing a final qualifying work, to study best practices at the enterprise, as well as to gain experience in independent work.	Production practice 1, Automation and mechanization of repair of wagons, Technology repair wagons, Ensuring traffic safety on transport	Final certification
<b>Total</b>			<b>3150</b>	<b>105</b>					

## 9. CATALOG OF ELECTIVE COMPONENT DISCIPLINES

**EDUCATIONAL PROGRAM**

**6B07116 - WAGONS**

**Level of education: bachelor's degree**

**Duration of study: 4 years**

**Year of admission: 2023.**

Cycle	Component	Name of discipline	Total labor input		Semester	Learning outcomes	Brief description of the discipline	Prerequisites	Post requisites
			in academic hours	in academic credits					
1	2	3	4	5	6	7	8	9	10
GED	EC1	Ecology and life safety	150	5	3	ON5	The study of the basic environmental concepts, environmental problems and approaches to their solution. sources and types of environmental pollution by enterprises, the principles of standardizing the quality of atmospheric air and water, the main provisions of legislation in various fields, natural and man-made emergencies, their causes, methods of prevention and protection . Teaching methods - analysis of specific situations (case-study).	Basic school education in ecology	Labor protection, Ensuring traffic safety on transport
	EC2	Scientific research methods				ON2, ON3	Obtaining theoretical and applied knowledge by students on the methods of scientific research of problems in the field of study, training of specialists with the skills of cognitive activity in the field of science, the formation of deep ideas about the content of scientific activity, its methods and forms of knowledge.	Engineering Mathematics, Applied Physics	Dynamics of wagons, Methods of nondestructive control of the rolling stock
	EC3	Basics of economics and entrepreneurship				ON6	He studies the activities of enterprises in various types of markets, the model of equilibrium and functioning of the market, state regulation of prices and tariffs. Considers the concept of entrepreneurship and the limits of its legal regulation, the conditions for the development of entrepreneurship, organizational and legal forms of doing business, business planning, entrepreneurial secrecy, social responsibility of. Active learning methods: case methods; business role-playing games, group work.	Engineering Mathematics	Managerial Economics, Time - management, Resource saving in transport, Transport logistics
	EC4	Basics of law and anti-corruption culture				ON1	Improving the public and individual legal awareness and legal culture of students, as well as the formation of a system of knowledge and civil position to combat corruption as an anti-social phenomenon. As a result of studying the course, the student must master the fundamental concepts of law, the constitutional structure of the state power of the Republic of Kazakhstan, the rights and freedoms of citizens enshrined in the Constitution, the mechanism and protection of the legitimate interests of a person in case of their violation.	Sociology, Political Science, Psychology, Cultural Studies, History of Kazakhstan	Final examination

1	2	3	4	5	6	7	8	9	10
BD	EC1	Fundamentals of calculating the strength of machines and mechanisms	180	6	4	ON7	Studies the basics of the theory of mechanisms and machines, the resistance of materials, calculation and design of general-purpose parts and assemblies widely used in machines to solve problems aimed at improving the reliability, strength and durability of parts and assemblies in design, construction and operation, using modern educational and information technologies. Methods of active learning – performing individual computational and graphical tasks.	Engineering Mathematics, Applied Physics, Theoretical mechanics, Structural materials in transport engineering	Machine parts and design basics, Design of wagons, Of the automatic wagons and the safety of train movement, Fundamentals of rolling stock design, Principles of computer-aided design of wagons
	EC2	Applied Mechanics				ON7	Studies the theoretical foundations and methods of calculations for strength, rigidity, durability and stability of structural elements of transport structures, the main types of mechanisms, parts and assemblies of machines, general principles of design and construction, which is necessary when assessing the reliability of existing equipment in operating conditions. Methods of active learning – performing individual computational and graphical tasks.	Engineering Mathematics, Applied Physics, Theoretical mechanics, Structural materials in transport engineering	Machine parts and design basics, Design of wagons, Of the automatic wagons and the safety of train movement, Fundamentals of rolling stock design, Principles of computer-aided design of wagons
BD	EC1	Heat engineering	180	6	3	ON2	Studies the basics of obtaining, converting, transferring and using heat, thermodynamic cycles of heat engines and calculation of their parameters, types of heat exchange, heat exchangers and methods of their calculation, the principle of operation and design features of heat-power, heat-using machines, aggregates and devices. The discipline contributes to the analysis of energy-saving technology in transport and the determination of trends in the development of heat-engineering machines, equipment, installations and devices.	Engineering Mathematics, Applied Physics	Life support systems for passenger cars, Of the automatic wagons and the safety of train movement
	EC2	Fluid and gas mechanics, hydroand pneumatic drive				ON2	General laws and equations of hydrodynamics, fluid motion modes and fundamentals of hydrodynamic similarity, laminar and turbulent fluid motion, hydraulic barriers, fluid flow through nozzles and nozzles, hydraulic calculation of pipelines, volumetric hydraulic machines, hydraulic drives and Hydraulic automation, pneumatic drive, pneumatic motor, pumps, hydraulic motors, fans, hydrodynamic transmission, hydraulic drive drives are metal-cutting tools. Teaching methods: problem solving, conducting thematic surveys, open and closed tests.	Engineering Mathematics, Applied Physics	Life support systems for passenger cars, Of the automatic wagons and the safety of train movement



1	2	3	4	5	6	7	8	9	10
BD	EC1	Methods of nondestructive control of the rolling stock	270	9	5	ON9, ON11	Study, analysis and classification of the causes of operational and technological defects of components and parts of rolling stock. Advanced methods of non-destructive testing and fault detection of rolling stock are considered. Mastering and practicing practical skills: working with modern diagnostic devices and flaw detectors: understanding and analyzing the results. Training methods used: work with diagnostic equipment, group work, discussion.	Engineering Mathematics, Applied Physics	Bases of reliability of the rolling stock, Technology repair wagons, Equipment and technology of welding and surfacing works
	EC2	Theory of automatic control				ON2, ON11	Formation of knowledge, skills and abilities of building automatic control systems based on modeling methodology using modern technologies and basic natural science laws. It consists of the following modules: fundamentals of automation of technological processes, the main tasks of the theory of automatic control, mathematical models of automatic control systems, research methods of linear non-linear automatic control systems, random impacts in linear automatic control systems, optimal control problems, current trends in the development of automatic control systems. Interactive teaching methods are used.	Engineering Mathematics, Applied Physics, Electrical engineering and the basics of electronics	Technology repair wagons, Automation and mechanization of repair of wagons, Automation of technological processes
BD	EC1	Dynamics of wagons	180	6	6	ON4, ON10, ON12	General ideas about classical and modern approaches to the study of the causes of carriage fluctuations are given. The methodology for determining the coefficients of dynamics and stability margin when moving a car in straight and curved sections of the railway track, the establishment and justification of criteria for the safe movement of rolling stock. Computational and analytical methods are used to solve problems related to determining the dynamic characteristics of freight and passenger cars. They are used by the "Universal Mechanism" software, Mathcad.	Engineering Mathematics, Applied Physics, Theoretical mechanics, Rolling stock and railway infrastructure, Transport equipment and means of mechanization, Design of wagons	Principles of computer-aided design of wagons PowerBI Business Analytics, Final examination
	EC2	IT technologies in transport				ON4, ON12	Studies the principles of information flow formation, information flow management in transport systems of various levels of complexity, general principles of building intelligent transport systems (ITS), routing of transport and monitoring of its operation when using ITS, information system design, organization of information exchange between management objects, methods of automated identification of transport objects, methods of location determination, application of information technology in the construction of vehicles. Methods of active learning: computer modeling, project method, work in small groups. It is used by: Mindmap, Python, MSPowerBI, Wialon system.	Information and communication technologies, Fundamentals of computer modeling, Rolling stock and railway infrastructure, Transport equipment and means of mechanization Foreign language	Principles of computer-aided design of wagons PowerBI Business Analytics, Final examination

1	2	3	4	5	6	7	8	9	10
BD	EC1	Ensuring traffic safety on transport	180	6	6	ON5, ON12	Acquisition by students of knowledge, principles, conditions and methods of ensuring the safety of vehicles in accident-free operation, instilling skills of an integrated approach to solving transport security problems, including in non-standard situations. As part of the study of the discipline, interactive methods are used, the solution and analysis of situational problems, discussions, guest lectures by leading top managers of transport companies.	Rolling stock and railway infrastructure, Transport equipment and means of mechanization	Bases of reliability of the rolling stock, Final examination
	EC2	Organization of operational work of the railway section				ON5, ON12	Study of the organization of the work of railway sections, dispatching personnel of railways, technical rationing of operational work and regulation of car traffic, locomotive and wagon fleets, rationing of work and rest of locomotive crews. Formation of skills for determining the operated fleet and calculating the operational indicators of the use of locomotives, operational planning of train and freight work of the road. As part of the discipline, demonstration of video clips is practiced, field classes are organized on the basis of the Almaty branch of the railway, Almaty-1, Almaty-2 stations.	Rolling stock and railway infrastructure, Transport equipment and means of mechanization	Bases of reliability of the rolling stock, Inclusive transport infrastructure, Management of wagon operation processes, Final examination
BD	EC1	Rolling stock and railway infrastructure	270	9	4	ON10, ON12	Formation of professional competencies in the field of construction and operation of a fleet of railway rolling stock in interaction with railway infrastructure facilities. Regulatory and technical base regulating requirements for railway rolling stock and elements of railway infrastructure; track and track facilities; railway power supply; design features of locomotives and wagons; locomotive, wagon facilities; rules technical operation; automation, telemechanics and communication on the railway; organization of transportation and train traffic.	Engineering Mathematics, Applied Physics, Structural materials in transport engineering, Theoretical mechanics	Design of wagons, IT technologies in transport, Ensuring traffic safety on transport, Of the automatic wagons and the safety of train movement, Dynamics of wagons
	EC2	Transport equipment and means of mechanization				ON10, ON12	The discipline studies the principles of operation, design features of transport equipment and means of mechanization, basic technical, operational, traction and energy characteristics, the role and significance of technical operation of various types of transport equipment. The discipline uses interactive teaching methods, conducting thematic surveys.	Engineering Mathematics, Applied Physics, Structural materials in transport engineering, Theoretical mechanics	Design of wagons, IT technologies in transport, Ensuring traffic safety on transport, Of the automatic wagons and the safety of train movement, Dynamics of wagons

1	2	3	4	5	6	7	8	9	10
PD	EC1	Equipment and technology of welding and surfacing works	180	6	6	ON9, ON11	Formation of skills: determining the most modern and rational methods of restoring parts by welding / surfacing; performing calculations of the characteristics of welding and surfacing processes; designing technological processes of welding and surfacing works. It consists of the following modules: technology and quality control of welding and surfacing, the concept of quality and reliability of welded structures; repair and restoration of wagon parts by welding and surfacing; equipment used in welding and surfacing. Interactive teaching methods, elements of dual training are used.	Engineering Mathematics, Applied Physics, Electrical engineering and the basics of electronics, Methods of nondestructive control of the rolling stock	Automation of technological processes, Life support systems for passenger cars, Technology repair wagons, Automation and mechanization of repair of wagons
	EC2	Inclusive transport infrastructure				ON10, ON12	General ideas about the creation of accessibility at transport infrastructure facilities and rolling stock for people with disabilities and people with limited mobility (disabled). Study of the requirements of state, regulatory and project documentation in the field of an inclusive environment for people with limited mobility. The best practices of technologically developed countries in the field of creating an inclusive space at transport infrastructure facilities and ensuring equal opportunities for people with limited mobility and the disabled.	Rolling stock and railway infrastructure, Transport equipment and means of mechanization	Fundamentals of rolling stock design, Final examination
PD	EC1	Management of wagon operation processes	270	9	8	ON6, ON11, ON12	The content of the discipline is based on the requirements of regulatory and technical documents in the field of operation of wagons and ensuring transport safety on the railways of the Republic of Kazakhstan. It consists of the following modules: material and technical base and management of operational enterprises; requirements for reliability indicators of wagons; system, organization of works and technology of maintenance of wagons; calculations of indicators of the use of wagons in operation; modern methods of optimization of production. Interactive teaching methods are used, as well as elements of dual training.	Design of wagons, Rolling stock and railway infrastructure, Transport equipment and means of mechanization	Final examination
	EC2	Principles of computer-aided design of wagons				ON4, ON7, ON10	Mastering theoretical knowledge and practical skills in the field of wagon design by students. Obtaining skills in using software systems and computer-aided design of components and parts of freight and passenger cars. Study of the requirements of regulatory and technical and design documentation in the field of designing modern railcars using methodological foundations, hardware and computer-aided design systems (CAD and CAD applications: AutoCAD, COMPASS 3D, etc.).	Design of wagons, Rolling stock and railway infrastructure, Transport equipment and means of mechanization	Final examination

1	2	3	4	5	6	7	8	9	10
PD	EC1	Life support systems for passenger cars	180	6	7	ON9, ON10, ON11, ON12	Formation of skills of diagnostics and technical calculation of life support systems of passenger cars of various types, in order to determine their optimal characteristics, for rational practical application in operation. Study of: modern designs of life support systems for passenger cars, their rational technical and technological solutions; regulatory and technical documentation for maintenance and repair of life support systems for passenger cars. Interactive teaching methods, elements of dual training are used.	Engineering Mathematics, Applied Physics, Теплотехника, Fluid and gas mechanics, hydroand pneumatic drive, Design of wagons, Rolling stock and railway infrastructure, Transport equipment and means of mechanization, Fundamentals of calculating the strength of machines and mechanisms, Methods of nondestructive control of the rolling stock	Automation and mechanization of repair of wagons, Final examination
	EC2	Automation of technological processes				ON4, ON11	The discipline forms the ability to solve problems of automation of production processes using modern technical means. Studies automated process control systems; information systems of automated process control systems; fundamentals of modeling of technological objects, controlled automated process control systems; structure and algorithms of process control, software control systems of production installations.	Rolling stock and railway infrastructure, Transport equipment and means of mechanization, Fundamentals of calculating the strength of machines and mechanisms, Fundamentals of rolling stock design	Principles of computer-aided design of wagons, Automation and mechanization of repair of wagons, Final examination
PD	EC1	Managerial Economics (Minor)	90	3	5		Formation of the conceptual apparatus and development of economic analysis skills using modern models and laws of economic science, consideration of economic problems and tasks facing the head of the company. The study of this discipline will allow students to gain and develop knowledge in the field of analytical research of economic, technological and technical parameters of an enterprise, and will also allow them to master the skills of applying special methods of economic justification of management decisions and assessing their consequences. Active learning methods are used - situational tasks, case method.	Engineering Mathematics, Basics of economics and entrepreneurship	Management of wagon operation processes
	EC2	Time - management (Minor)				ON6	Formation of students' general ideas about the essence and types of time management, principles and methods of time resource management for more successful professional activities. Active learning methods are used - situational tasks, case method.	Basics of economics and entrepreneurship	Management of wagon operation processes, Transport logistics

1	2	3	4	5	6	7	8	9	10
PD	EC1	Transport logistics	90	3	6	ON6	The study of the main provisions of transport support of logistics systems, activities in the field of transportation, covering the entire range of operations and services for the delivery of goods from the manufacturer of products to the consumer, the principles of design and construction of logistics systems. Mastering the skills of optimization and organization of rational cargo flows, their processing in specialized logistics centers, ensuring an increase in their efficiency, reducing unproductive costs and expenses. The teaching methods are: solving problems, conducting thematic colloquiums, seminars "brainstorming". Within the framework of the discipline, guest lectures are conducted by leading specialists of transport and logistics companies.	Basics of economics and entrepreneurship, Managerial Economics, Time - management	Management of wagon operation processes, PowerBI Business Analytics
	EC2	Fundamentals of rolling stock design				ON4, PO10	Systematize traditional methods and modern software systems for automated design of wagons and locomotives. Determine the optimal parameters of the rolling stock and its linear dimensions. Apply modern methods of developing design documentation when designing components and parts of CAD rolling stock and CAD applications: QCAD, FreeCAD, etc.).	Machine parts and design basics, Information and communication technologies	Design of wagons, Principles of computer-aided design of wagons
PD	EC1	Resource saving in transport	90	3	7	ON11, PO12	The study of the main types and characteristics of energy resources, regulatory and legal support for energy conservation, improving the energy efficiency of the transportation process; energy-saving technologies in repair production and operation of railway infrastructure facilities; organization and methods of energy conservation management. They are used to solve problems, conduct thematic colloquiums, debates. Guest lectures are being held by leading experts of the transport and communication industry.	Organization of operational work of the railway section, Production practice 1, 2	Management of wagon operation processes, Final examination
	EC2	PowerBI Business Analytics				ON4, ON6	Formation of students' skills and knowledge to collect, analyze and structure data in order to build interactive dashboards, program at the modern level of development of the MDX multidimensional data analysis language, build models and algorithms of projects in relevant areas of BI technology, be able to analyze the essence of the project subject field and make decisions. Methods of active learning are used - brainstorming, working in small groups. The form of control is an individual project.	Information and communication technologies, IT technologies in transport, Dynamics of wagons	Final examination
<b>Total</b>			<b>2310</b>	<b>77</b>					

## 10. EXPERT CONCLUSIONS

### ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу (компетентностную модель выпускника, УП, КЭД)  
бакалавриата 6В07116–ВАГОНЫ  
по направлению подготовки 6В071-Инженерия и инженерное дело

Обновлённая Образовательная программа бакалавриата 6В07116–ВАГОНЫ разработана на основании актуальных нормативно-правовых актов. Компетентностная модель выпускника содержит актуальные для железнодорожной отрасли цели и задачи образовательной программы по заявленному направлению подготовки, и позволяет ответить на вопрос о том, какие профессиональные задачи должен уметь решать специалист в сфере производства, эксплуатации, технического обслуживания и ремонта вагонов. Результаты обучения сформулированы лаконично, отражают объем и содержание программы, являются достижимыми в рамках учебной нагрузки программы.

Учебный план ОП 6В07116–ВАГОНЫ представлен как логическая последовательность освоения блоков общеобразовательных, базовых и профилирующих дисциплин, обеспечивающих формирование результатов обучения. Указывается общая трудоемкость дисциплин и практик в кредитах и часах, а также их аудиторная трудоемкость в часах. Дисциплины вузовского компонента преобразованы, укрупнены, и составляют фундаментальную базу знаний инженера, и в комплексе с обновлёнными дисциплинами компонента по выбору отражают требования к компетенциям разносторонне развитого, конкурентоспособного специалиста вагонного хозяйства. Важная роль отводится практике: учебная практика после 2-го курса, и производственная практика, которая разделена на две части на 3-м и 4-м курсах. Каждый вид практики подразумевает освоение соответствующих результатов обучения, что позволяет планомерно закреплять полученные на каждом этапе обучения теоретические знания. А практика на 4-м курсе позволяет обеспечить сбор информации для написания выпускной квалификационной работы.

В каталог элективных дисциплин внесены новые модули, востребованные временем и необходимостью в новых компетенциях: «Управление ресурсами», «Цифровые компетенции».

Содержательная часть профилирующих дисциплин, формирующих профессиональные результаты обучения РО8-12, отработана с авторами ОП, направлена на формирование способности выпускников рационально организовывать работу по техническому обслуживанию и ремонту вагонов в подразделениях вагонного хозяйства, а также разрабатывать и внедрять мероприятия по обеспечению сохранности вагонного парка.

Общая экспертиза образовательной программы (компетентностной модели выпускника, УП, КЭД) бакалавриата 6В07116–ВАГОНЫ, по направлению подготовки 6В071-Инженерия и инженерное дело, свидетельствует о полноте охвата необходимых для будущего специалиста вагонного хозяйства результатов обучения, для освоения которых представлен перечень актуальных учебных дисциплин в совокупности с различными видами практики.

Отдельно следует отметить, что представленная образовательная программа разработана с учётом действующих Профессиональных стандартов, опытным коллективом авторов с привлечением работодателей из сферы вагонного хозяйства.

На основании вышеизложенного, рекомендую внедрить в учебный процесс обновлённую образовательную программу (компетентностную модель выпускника, УП, КЭД) бакалавриата 6В07116–ВАГОНЫ, по направлению подготовки кадров 6В071-Инженерия и инженерное дело.

Эксперт  
Генеральный директор Казахстанской  
Ассоциации перевозчиков и  
операторов вагонов (контейнеров)

  
  
Адамбаева С.М.



## ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу «6В07116-Вагоны»,  
Уровень подготовки: Бакалавриат  
Направление подготовки: 6В071-Инженерия и инженерное дело

Представленная на экспертизу, обновлённая в 2023 году, ОП «6В07116-Вагоны» носит актуальный характер, так как разработана с целью подготовки конкурентно-ориентированных специалистов вагонного хозяйства, обладающих разносторонними естественно-научными и профессиональными компетенциями в соответствии с действующими на данный момент профессиональными стандартами - «Техническая эксплуатация, обслуживание и ремонт грузовых вагонов (станционный уровень)» (утвержден №256 от 20.12.2019 г.), «Управление и контроль безопасности движения на железнодорожном транспорте» (утвержден №256 от 20.12.2019г.), «Оперирование вагонами (контейнерами)» (утвержден №256 от 20.12.2019 г.).

Пересмотр ОП «6В07116-Вагоны» был обусловлен необходимостью актуализации согласно НПА МНВО РК, так же пересмотрен перечень дисциплин и количество кредитов, в том числе в соответствии с QS by Subject.

Следует отметить, что содержание дисциплин обновлённой ОП «6В07116 - Вагоны» охватывает представленные результаты обучения и отражает современное состояние развития железнодорожной техники и технологий. В описании дисциплин раскрывается цель изучения дисциплины, применяемые методы, оценка результатов обучения. Изучение дисциплин образовательной программы позволит овладеть знаниями в области эксплуатации и ремонта вагонов, их агрегатов, систем и отдельных узлов, позволит приобрести навыки решения профессиональных вопросов на основе принципов безопасности, энергосбережения на транспорте, анализа спроса и предложения, динамики конъюнктуры транспортного рынка. Дисциплины профилирующего блока помогут обучающимся овладеть профессиональными компетенциями в практической инженерной деятельности на базе современных подходов к решению инженерных задач, комплексной оценки надёжности технических средств, принципов автоматизации и механизации технологических процессов, технических регламентов и профессиональных нормативов. В описательной части ряда профилирующих дисциплин отмечается, что содержание дисциплин базируется на требованиях актуальных нормативно-технических документов в области ремонта, эксплуатации вагонов и обеспечения транспортной безопасности на ж.д. РК.

В ОП «6В07116 - Вагоны» отражены основные трудовые функции в компетенциях и результатах обучения, указаны виды связей с работодателями: проведение гостевых лекций, лекций ведущих топ менеджеров, наличие филиалов кафедры на базе профильных предприятий.

Представленная на экспертизу, обновлённая в 2023 году, ОП «6В07116 - Вагоны», её составляющие: компетентностная модель выпускника, учебный план, каталог дисциплин вузовского компонента, каталог элективных дисциплин, полностью соответствуют требованиям НПА, имеют четкую последовательность при разработке, отвечают современным запросам рынка труда, профессиональным стандартам, рекомендуются к принятию и использованию в учебном процессе по направлению подготовки «6В071-Инженерия и инженерное дело».

ЭКСПЕРТ:

Генеральный директор  
ТОО «Ремвагон»



Кадырсызов С.У.

## 11. REVIEWER'S CONCLUSION

### РЕЦЕНЗИЯ

на образовательную программу 6В07116 - ВАГОНЫ  
по направлению подготовки 6В071 - Инженерия и инженерное дело

Обновлённая образовательная программа бакалавриата 6В07116 - ВАГОНЫ содержит следующую информацию: квалификация выпускника, форма и срок обучения, направление и характеристика деятельности выпускников, приведен полный перечень компетенций, которыми должен обладать выпускник в результате освоения данной образовательной программы.

Дисциплины учебного плана по рецензируемой образовательной программе формируют весь необходимый перечень общекультурных и профессиональных компетенций, предусмотренных ГОСО по соответствующим видам деятельности. Соблюдена последовательность изучения дисциплин, определен перечень всех учебных дисциплин обязательного компонента и компонента по выбору, трудоемкость каждой учебной дисциплины в кредитах, последовательность их изучения, виды учебных занятий и формы контроля. Каталог элективных дисциплин, Каталог вузовского компонента полностью отражают преемственность дисциплин (например, Инженерная математика, Теоретическая механика, Основы расчета прочности машин и механизмов/Прикладная механика, Детали машин и основы конструирования, Конструкция вагонов, Основы надежности подвижного состава, Автотормоза вагонов и безопасность движения поездов, Динамика вагонов). В учебный план включены новые модули по выбору «Управление ресурсами» и «Цифровые компетенции».

Формирование успешной компетенции выпускника ВУЗа транспортно-коммуникационного направления основано на объективном определении области и видов профессиональной деятельности, функции профессиональной деятельности, а также должностей специалиста Образовательной программы 6В07116 - ВАГОНЫ, содержит необходимую информацию о будущей профессиональной деятельности специалиста в области технического обслуживания и ремонта вагонов.

Рабочие программы учебных дисциплин и всех видов практик позволяют сделать вывод, что они соответствуют компетентностной модели будущего выпускника, а также действующим профессиональным стандартам: «Техническая эксплуатация, обслуживание и ремонт грузовых вагонов (станционный уровень)», «Управление и контроль безопасности движения на железнодорожном транспорте», «Оперирование вагонами (контейнерами)». Образовательная программа предусматривает профессионально-практическую подготовку обучающихся в виде практики. Содержание программ практик свидетельствует об их способности сформировать практические навыки обучающихся.

Для разработки образовательной программы были привлечены опытный профессорско-преподавательский состав, ведущие представители работодателя, обучающиеся, учтены их требования при формировании дисциплин профессионального цикла.

#### Заключение:

В целом, рецензируемая образовательная программа 6В07116 - ВАГОНЫ отвечает основным требованиям ГОСО, национальной рамке квалификаций, отраслевой рамке квалификаций, профессиональных стандартов и способствует формированию общекультурных и профессиональных компетенций по направлению подготовки 6В071 - Инженерия и инженерное дело.

#### Рецензент

Главный инженер Алматинского  
эксплуатационного вагонного депо



Абубакиров Р.Е.



## 12. LETTERS OF RECOMMENDATION



info@shynghar.kz  
www.shynghar.kz

Заведующему кафедрой «Подвижной состав» АО «Академия логистики и транспорта» Аширбаеву Г.К.

Уважаемый (ая) Галымжан Кожыхатович!

Руководство ТОО «Шынғар Транс» в лице Председателя наблюдательного совета **Е.К.Аутова** ознакомилось с содержанием образовательной программы «6В07116-Вагонь» и внесло следующие рекомендации:

- увеличить количество часов, выделяемых на проведение части лабораторных и практических занятий на базах работодателей с целью формирования определенных видов профессиональных компетенций;

- актуализировать содержание образовательной программы путем включения в цикл базовых и профилирующих модулей дисциплины, отражающие современные инновационные технологии в транспортно-коммуникационной сфере.

Предлагается включить в образовательную программу «6В07116-Вагонь» следующие дисциплины «Транспортная логистика», «Ресурсосбережение на транспорте» и увеличить количество часов, выделяемых на проведение производственной практики.

Президент

01.03.2023г.



Е. Аутов

### 13. MINUTES OF REVIEW AND APPROVAL

Академия логистики и транспорта

#### ПРОТОКОЛ №1

Заседания

Академического комитета по образовательным программам и ведущим преподавателей кафедры «Подвижной состав»

г. Алматы

«14» марта 2023 года

**Председатель:** зав. кафедрой «ПС» Аширбаев Г.К.

**Секретарь:** ассоц. профессор Ивановцева Н.В.

**Присутствовали:** члены Академического комитета, ведущие ППС кафедры: Аширбаев Г.К., Бакыт Ф.Б., Ивановцева Н.В., Кибитова Р.К., Мусаев Ж.С., Солоненко В.Г., Мусабеков М.О., Ибраев Ж.С., Джакупов Н.Р., Сүлеева Н.З., Маханова А.К..

**Представители с производства:** Директор филиала «Вагоноколесные мастерские станции Алматы-1» ТОО «Қамқор Вагон» - Жасоқбай Р.Г.; заместитель начальника по производству Алмапинского эксплуатационного локомотивного депо филиала ТОО «ҚТЖ-Грузовые перевозки» - «Алмапинское отделение ПП» - Искаков М.С.; генеральный директор КазАПО - Адамбаева С.М.; первый проректор АГА, к.т.н. - Жакупов К.Б..

**Обучающиеся:** Студент 3-го курса, гр. В-20-1к - Имангазина С.А.; студент 3-го курса, гр. Л-20-1к - Әбілхайыр М.М.; магистрант гр. МН-ПСЖД-21-1к - Қаламбек Ж.; магистрант гр. МН-ПСЖД-21-1к - Шарапат А.А.; магистрант 1 г.о., гр. МН-ПСЖД-22-1р - Клюев А.В..

#### ПОВЕСТКА ДНЯ:

1. Пересмотр и обновление компетентностной модели выпускника по действующим ОП.
2. Рассмотрение возможности включения дисциплин в РУП и КВК/КЭД для ОП приёма 2023 года..

#### По первому вопросу

**ВЫСТУПИЛ:** Зав. кафедрой «ПС» Аширбаев Г.К. предложил рассмотреть компетентностную модель выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура, по действующим ОП кафедры «ПС»:

Бакалавриат: ОП 6В07116 - Вагоны и 6В07117-Локомотивы;

Магистратура: ОП 7М07145- Подвижной состав железных дорог (профильная 1,5 года) и ОП 7М07146-Подвижной состав железных дорог (научно-педагогическая, 2 года);

Докторантура: ОП 8D07159-Транспорт, транспортная техника и технологии.

Компетентностная модель выпускника является составной частью ОП (4 раздел). Включает в себя следующие составные элементы:

- Цель и задачи образовательной программы;
- Результаты обучения;
- Область, объекты, виды и функции профессиональной деятельности;
- Перечень должностей по образовательной программе;
- Профессиональные сертификаты, полученные по окончании обучения;
- Требования к предшествующему уровню образования.

Было отмечено, что в 2022-2023 уч. году компетенционные модели по всем действующим ОП были пересмотрены при участии работодателей, обучающихся и выпускников. С учётом требований НПА и профессиональных стандартов обновлены результаты обучения по ОП: 6В07116 – Вагоны, 6В07117-Локомотивы, 7М07145- ПСЖД (профильная 1,5 года) и 7М07146-ПСЖД (научно-педагогическая, 2 года). Актуализирован

перечень компетенций, должностей специалиста по образовательным программам, в соответствии с действующими профессиональными стандартами.

**ВЫСТУПИЛ:** Представитель работодателей, член АК ОП 6В07116-Вагоны - Жасоқбай Р.Г., который охарактеризовал Компетентностную модель выпускника по действующей ОП 6В07116 – Вагоны, как актуальную и отвечающую требованиям рынка труда и предложил оставить без изменений.

**ВЫСТУПИЛ:** Представитель работодателей, член АК ОП 6В07117 – Локомотивы - Исаков М.С., который охарактеризовал Компетентностную модель выпускника по действующей ОП 6В07117 – Локомотивы, как актуальную и отвечающую требованиям рынка труда и предложил оставить без изменений.

**ВЫСТУПИЛА:** Представитель работодателей, член АК ОП 7М07145- ПСЖД и ОП 7М07146-ПСЖД - Адамбаева С.М., которая охарактеризовала Компетентностную модель выпускника по действующим ОП магистратуры ОП 7М07145- Подвижной состав железных дорог (профильная 1,5 года) и ОП 7М07146-Подвижной состав железных дорог (научно-педагогическая, 2 года), как актуальную и отвечающую требованиям рынка труда и предложила оставить без изменений.

**ВЫСТУПИЛ:** Представитель работодателей, член АК ОП 8D07159-ТТТТ - Жакупов К.Б., который охарактеризовал Компетентностную модель выпускника по действующей ОП 8D07159-Транспорт, транспортная техника и технологии, как актуальную и отвечающую требованиям рынка труда и предложил оставить без изменений.

**ВЫСТУПИЛИ:** Председатели Академических комитетов по образовательным программам:

- 6В07116-Вагоны - Кибитова Р.К.,
- 6В07117-Локомотивы - Бакыт Ф.Б.,
- 7М07145- Подвижной состав железных дорог (профильная 1,5 года) - Мусаев Ж.С.,
- 7М07146-Подвижной состав железных дорог (научно-педагогическая, 2 года) - Ивановцева Н.В.,
- 8D07159-Транспорт, транспортная техника и технологии - Аширбаев Г.К.

Все председатели АК подтвердили актуальность Компетентностных моделей выпускника по действующим ОП.

Было предложено утвердить представленные Компетентностные Модели выпускника по 3 уровням образования.

**ПОСТАНОВИЛИ:**

1) Одобрить представленные Компетентностные модели выпускника по 3 уровням образования для ОП кафедры «ПС»:

Бакалавриат: ОП 6В07116 - Вагоны и 6В07117-Локомотивы;

Магистратура: ОП 7М07145- Подвижной состав железных дорог (профильная 1,5 года) и ОП 7М07146-Подвижной состав железных дорог (научно-педагогическая, 2 года);

Докторантура: ОП 8D07159-Транспорт, транспортная техника и технологии.

2) Представить Компетентностные модели выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура для рассмотрения на КОК УМБ института «Транспортная инженерия».

**По второму вопросу**

**ВЫСТУПИЛ:** зав кафедрой с предложением заслушать представителей работодателей и обучающихся по включению новых дисциплин в КЭД и РУП приема 2023 г.

Было отмечено что в текущем учебном году в связи с изменениями в НПА МНВО РК есть необходимость актуализации действующих образовательных программ бакалавриата и магистратуры. Кроме того рассматривается перспектива участия АЛит в

различных рейтингах в том числе и QS by Subject, в связи с этим также требуется пересмотр действующих ОП. Предлагается пересмотреть названия дисциплин в соответствии с программами потенциальных международных партнеров, что дает ряд преимуществ в трансферте кредитов и в участии Академии в международных рейтингах; уменьшить количество дисциплин в ОП, тем самым схожие дисциплины укрупнить, что поможет преподавателям сконцентрироваться на одной полной программе дисциплины, нежели разбивать ее на 2–3 логически схожие дисциплины. Рекомендуется выделять на одну дисциплину от 6 до 9 кредитов, что также качественно повлияет на выбор дисциплин студентами компонента по выбору и глубокое погружение в каждый предмет.

**ВЫСТУПИЛ:** Представитель работодателей, член АК ОП 6В07116-Вагоны - Жасоқбай Р.Г.. Организации вагонного хозяйства заинтересованы в специалистах, имеющих хороший уровень практической подготовки и знаний в области эксплуатации и ремонта вагонов. Вносим предложение о внесении в РУП следующих востребованных дисциплин: «Управление процессами эксплуатации вагонов», «Системы жизнеобеспечения пассажирских вагонов». А так же предлагаем увеличить количество выделяемых кредитов для следующих профилирующих дисциплин: «Технология ремонта вагонов», «Автоматизация и механизация ремонта вагонов», «Оборудование и технология сварочно-наплавочных работ».

**ВЫСТУПИЛ:** Представитель работодателей, член АК ОП 6В07117 – Локомотивы - Исакаев М.С.. Организации локомотивного хозяйства заинтересованы в специалистах, имеющих хороший уровень практической подготовки и знаний в области эксплуатации, сервисного/технического обслуживания и ремонта локомотивов. Вносим предложение о внесении в РУП следующих востребованных дисциплин: «Управление процессами эксплуатации локомотивов», «Электромагнитные технические средства/ Электрические передачи мощности», «Микропроцессорные системы автоматического управления локомотива». А так же предлагаем увеличить количество выделяемых кредитов для следующих профилирующих дисциплин: «Технология ремонта локомотивов», «Теория тяги и принципы энергосбережения», «Автоматизация технологических процессов».

**ВЫСТУПИЛА:** Представитель работодателей, член АК ОП 7М07145- ПСЖД и ОП 7М07146-ПСЖД - Адамбаева С.М., которая предложила увеличить количество кредитов отводимых на все профилирующие дисциплины, а также увеличить количество кредитов для прохождения производственной практики для магистратуры профильного направления.

**ВЫСТУПИЛА:** Обучающаяся, член АК ОП 6В07116-Вагоны, студент 3-го курса, гр. В-20-1к - Имангазина С.А.. Считаю необходимым включить в РУП ОП 6В07116-Вагоны следующие дисциплины: «Тайм-менеджмент» и «Управленческая экономика».

**ВЫСТУПИЛ:** Обучающийся, член АК ОП 6В07117-Локомотивы, студент 3-го курса, гр. Л-20-1к - Әбілхайыр М.М.. Считаю необходимым включить в РУП ОП 6В07117-Локомотивы следующие дисциплины: «Бизнес аналитика PowerBI» и «Тайм-менеджмент».

**ВЫСТУПИЛИ:** Председатели Академических комитетов по образовательным программам, которые озвучили предложения работодателей изложенные в рекомендательных письмах, а также озвучили предложения профессорско-преподавательского состава кафедры «Подвижной состав»:

- Кибитова Р.К.: Предлагается включить в ОП 6В07116-Вагоны следующие дисциплины: «Инклюзивная транспортная инфраструктура», «Транспортная логистика» и «Ресурсосбережение на транспорте».

- Бақыт Ф.Б.: Предлагается включить в ОП 6В07117-Локомотивы следующие дисциплины: «Энергетические установки транспортной техники», «Экологический менеджмент на транспорте» и «Теория тяги и принципы энергосбережения».

- Мусаев Ж.С.: Предлагается включить в образовательную программу магистратуры профильного направления 7М07145-Подвижной состав железных дорог



следующие дисциплины: «Методология эксплуатационных разработок», «IT/SMART технологии на транспорте», «Бережливое производство» и увеличить количество часов, выделяемых на проведение производственной практики.

- Ивановцева Н.В.: Для включения в образовательную программу магистратуры научно-педагогического направления 7М07146-Подвижной состав железных дорог предлагаются дисциплины: «Организация и планирование научных исследований (англ.)», «Управление рисками», «Оптимизация управления предприятиями по эксплуатации и ремонту подвижного состава».

- Аширбаев Г.К.: ОП докторантуры 8D07159-Транспорт, транспортная техника и технологии предлагается оставить без изменений.

**ВЫСТУПИЛИ:** Обучающиеся, члены АК: ОП 7М07145- ПСЖД, магистрант гр. МН-ПСЖД-21-1к - Қаламбек Ж.; ОП 7М07146-ПСЖД, магистрант гр. МН-ПСЖД-21-1к - Шарапат А.А, ОП 8D07159-ТТТТ, магистрант 1 г.о., гр. МН-ПСЖД-22-1р – Клюев А.В., которые поддержали представленные выше предложения.

**ПОСТАНОВИЛИ:**

1. Информацию принять к сведению;
2. Учесть предложения и рекомендации работодателей и обучающихся;
3. Рассмотреть включение в РУП и КЭД/КВК для ОП приёма 2023 года следующих дисциплин:

- для ОП 6В07116-Вагоны: «Управление процессами эксплуатации вагонов», «Системы жизнеобеспечения пассажирских вагонов», «Тайм-менеджмент», «Управленческая экономика», «Инклюзивная транспортная инфраструктура», «Транспортная логистика», «Ресурсосбережение на транспорте»;

- для ОП 6В07117-Локомотивы: «Управление процессами эксплуатации локомотивов», «Электромагнитные технические средства / Электрические передачи мощности», «Микропроцессорные системы автоматического управления локомотива», «Бизнес аналитика PowerBI», «Тайм-менеджмент», «Энергетические установки транспортной техники», «Экологический менеджмент на транспорте», «Теория тяги и принципы энергосбережения»;

- для ОП 7М07145-Подвижной состав железных дорог (1,5 года): «Методология эксплуатационных разработок», «IT/SMART технологии на транспорте», «Бережливое производство»;

- для ОП 7М07146-Подвижной состав железных дорог (2 года): «Организация и планирование научных исследований (англ.)», «Управление рисками», «Оптимизация управления предприятиями по эксплуатации и ремонту подвижного состава».

**Председатель:**

**Секретарь:**



**Аширбаев Г.К.**

**Ивановцева Н.В.**

## Академия логистики и транспорта

### ПРОТОКОЛ №7

заседания Комиссии по обеспечению качества – Учебно-методического бюро (КОК-УМБ) института «Транспортная инженерия»

г. Алматы

15 марта 2023г.

**Председатель:** Чигамбаев Т.О.

**Секретарь:** Утепова А.У.

#### **Присутствовали:**

**Члены КОК-УМБ:** Чигамбаев Т.О.-к.т.н., ассоц. профессор АЛТ, председатель КОК-УМБ, директор института «ТИ»; Сулеева Н.З.- к.т.н., ассоц. профессор АЛТ, заместитель председателя КОК-УМБ, заместитель директора института «ТИ»; Утепова А.У.-секретарь КОК-УМБ, к.т.н., ассистент-профессор кафедры «ПС», Аширбаев Г.К.-к.т.н., профессор АЛТ, зав. кафедрой «ПС», Шингисов Б.Т.-заведующий кафедрой «АТСиБЖД», Исмагулова С.О.-заведующая кафедрой «СИ», Кибитова Р.К.-к.т.н., ассистент-профессор кафедры «ПС», Жусупов К.А.-к.т.н., профессор АЛТ кафедры «АТСиБЖД»; Тойлыбаев А.Е.-к.т.н., профессор АЛТ кафедры «АТСиБЖД»; Байкенжеева А.С.-к.т.н., ассоц. профессор кафедры «АТСиБЖД»; Бихожаева Г.С.-к.т.н., ассистент-профессор кафедры «СИ»; Дюсенгалиева Т.М. к.т.н., ассистент-профессор кафедры «СИ».

**Представители с производства (онлайн):** Бекетов Т.С. - Директор ТОО «MegaDrive», Жасоқбай Р.Г. - Директор филиала "ВКМ ст. Алматы -1" ТОО "Қамқорвагон", Елешев М.К.- Директор Конструкторско-экспериментального центра, Алматинский филиал АО «КТЖ- Грузовые перевозки».

**Обучающиеся:** Абдуалиева А.Е., Ерболат Д.  
(явочный лист прилагается).

#### **ПОВЕСТКА ДНЯ:**

1. Рассмотрение Компетентностной модели выпускника, Каталога элективных дисциплин (КЭД), Рабочего учебного плана (РУП), паспорта образовательных программ бакалавриата, магистратуры и докторантуры.

**СЛУШАЛИ:** заведующих кафедр, которые представили на рассмотрение составляющие разделы образовательных программ: Компетентностную модель выпускника и паспорта образовательных программ, а так же рабочие учебные планы, каталоги вузовского компонента (КВК), каталоги элективных дисциплин (КЭД) на 2023-24 уч.год.

#### **ВЫСТУПИЛ:**

Заведующий кафедрой «Подвижной состав» Аширбаев Г.К.

На кафедре «Подвижной состав» было проведено заседание Академического комитета по образовательным программам и ведущих преподавателей кафедры с привлечением представителей работодателей и обучающихся по обсуждению структуры и содержания образовательных программ:

Бакалавриата: ОП 6В07116 – Вагоны, 6В07117-Локомотивы, 6В07137- Инженерия подвижного состава, 6В07173- Инженерия подвижного состава (ОмГУПС);

Магистратуры: ОП 7М07145- Подвижной состав железных дорог (профильная 1,5 года) и ОП 7М07146-Подвижной состав железных дорог (научно-педагогическая, 2 года);

Докторантуры: ОП 8D07159-Транспорт, транспортная техника и технологии.

В соответствии с работой над корректировкой и обновлением ОП бакалавриата, магистратуры и докторантуры обновили Компетентностную модель выпускника, КЭД, КВК, РУП. Составлен новый рабочий учебный план, где количество кредитов, выделяемые на одну дисциплину составило от 6 до 9 кредитов. Для всех ОП согласовано с работодателями составлены новые КЭД на 2023-2024 уч.год.

Представителями работодателей и обучающимися были предложены ряд новых актуальных дисциплин, которые кафедра одобрила и включила в новые КЭД и РУП.

#### **ПОСТАНОВИЛИ:**

1. Информацию принять к сведению;
2. Одобрить образовательные программы: Компетентностную модель выпускника, КЭД, КВК, Рабочий учебный план, паспорта образовательных программ:
  - Бакалавриата: ОП 6В07116 – Вагоны, 6В07117-Локомотивы, 6В07137- Инженерия подвижного состава, 6В07173- Инженерия подвижного состава (ОмГУПС);
  - Магистратуры: ОП 7М07145- Подвижной состав железных дорог (профильная 1,5 года) и ОП 7М07146-Подвижной состав железных дорог (научно-педагогическая, 2 года);
  - Докторантуры: ОП 8D07159-Транспорт, транспортная техника и технологии.
3. Представить образовательные программы: Компетентностную модель выпускника, КЭД, КВК, Рабочий учебный план, паспорта образовательных программ ОП бакалавриата, магистратуры и докторантуры для рассмотрения и утверждения УС Академии.

**Председатель КОК-УМБ института  
«Транспортная инженерия»**

  
**Чигамбасев Т.О.**

**Секретарь КОК-УМБ института  
«Транспортная инженерия»**

  
**Утепова А.У.**





