

## EDUCATION PROGRAM DESCRIPTION

1. Title: “Transport Business and Logistics”
2. Major: “Railway Operating”
3. Awarded degree – Diplomaed Specialist
4. Term of studies – 5 years
5. Language of the program – Russian
6. List of subjects (with summary)

№	Title	Summary
<b>HUMANITIES, SOCIAL STUDIES AND ECONOMICS</b>		
<b>Main Subjects</b>		
1	History	
2	Philosophy	
3	Political Science	
4	Study of Culture	
5	Economics	
6	Law	
7	Russian Language and Speech Culture	
8	Foreign Language	
9	Social Studies	
10	Psychology and Pedagogy	
11	Outsourcing in the Spheres of Transport Business and Logistics	Outsourcing: concept and classification. Advantages and disadvantages of outsourcing.
<b>Variant Subjects</b>		
<b>Compulsory Subjects</b>		
1	History of Technology	Main Ideas about transport. Inventions that help to develop transport.
<b>Optional Subjects</b>		
1	Law Basics for Transport Safety	Main goals and objectives for transport safety. Law basis for transport safety.
2	Business Law	A Concept and a subject of a business law. Commercial contract. Business law issues and solutions.
<b>MATHEMATICS AND NATURAL SCIENCES</b>		
<b>Main Subjects</b>		
1	Mathematics	
2	Physics	
3	Theoretical Mechanics	Statics. Kinematics. Main theorems of the dynamics.
4	Applied Mechanics: Strength of Materials	Mechanical characteristics of materials. Theory of plasticity elements. Strength theory.
5	Applied Mechanics: Machine Elements	Main concepts of AMME. Structure and classification of elements.

6	Information Science	
7	Chemistry	
8	Ecology	
9	Mathematical analysis for systems and processes	
10	Engineering & Computer Graphics	
11	Information Technologies in Transport Business and Logistics	Information Flows and Logistic Information Systems. Information Resources for Transport Logistics. EDIFACT standards.
	<b><i>Variant Subjects</i></b>	
	<b><i>Compulsory Subjects</i></b>	
1	Accounting and Railway Statistics	Statistics: concept, objectives and functions. Statistic information. Railway Statistics.
2	Ergonomics	Ergonomics: concept, objectives and methods. Ergonomic criteria. Economic efficiency of ergonomic measures.
	<b><i>Optional Subjects</i></b>	
1	Metrology, Standardization and Certification	Metrology and standardization in transport process. Certification systems.
2	Network Information Resources	Network architecture. Network models. Local network technology. Internet: protocols, browsers, search technologies, e-mail.
<b>MAJOR RELATED SUBJECTS</b>		
	<b><i>Main Subjects</i></b>	
1	Material Science	Macro- and Micro-analysis. Mechanical properties. Iron and its alloys. Metal materials. Non-ferrous metals and alloys.
2	General Electrotechnics & Electronics	Linear AC circuits. Linear DC circuits. Three-phase linear circuits. Magnetic chains.
3	Human Safety	HS: basic concepts, terms and definitions. HS law basis. Nature perils and threats. Anthropogenic perils and protection. Social and medical security.
4	Marketing Basics	Marketing as a concept of production management. Market research. Product research. Marketing environment.
5	Transport Business Basics	Modern methods of transportation management. Transport business features. Organizational forms of business.
6	Refrigerated Transport and Heat Engineering Basics	Perishable goods (PG): storage and transportation specifics. Refrigeration in transport & economics. Refrigerated transport economics. Refrigeration and heat engineering basics
7	Transport in General	Basic concepts of transport, transport systems. Global development tendencies for various means of transportation.
8	Transport Economics	Transport system in Russia. Freight and passenger traffic. Transport labor management. Transport fares.
9	Means of Communication	General and other means of communication. Track structure. Roadbed foundation.
10	Non-traction Rolling Stock	General information about the car fleet. Car characteristics. Containers.
11	Railway Traction	General information about the rolling stock. Train motion theory. Train brake power.
12	Freight Management	Cargo concept. Classification of cargo. Packaging and marking. Transportation and storage.
13	Transport & Cargo Systems	TCS: definition, classification, structure. Bridge and jib cranes. Elevators. Production lines.

14	Railway Automatics, Telemechanics and Communication	General notions of railway traffic organization. Communication lines classification. Railway Automatics and Telemechanics objects of control.
15	Railway Stations and Junctions	General review of Russian and foreign railway stations and junctions current condition. Classification of stations. Classification yard.
16	Freight and Business Management	Railway freight fares and its classification. Container transportation.
17	Transport Law	Main principals of railway law regulations. Contract of carriage. Law basis for transportation of passengers, luggage, mail, etc.
18	Transport Service	Service: main definitions. Transport services. Service centers at the railway stations.
19	Interaction Between Different Means of Transportation	Functional characteristics of means of transportation. Conditions for interaction of MT. Economic indicators for MT.
20	Railway Transport Maintenance and Traffic Security	Law basis for transport security. Reasons for violations of safety rules. Investigation of safety violations.
21	Railway Transport Security Technologies	Technical means for safe train motion at the stations. Technical means for safe train motion at the junctions. Automatic, electro-pneumatic and hand brakes.
22	Transport Safety	Main notions of transport safety and transport security systems. Main requirements for TS. Information support.
23	Transport Logistics	Modern logistic systems for goods circulation. Transport service market. Tendencies for logistic systems and technologies development.
24	Terminal & Logistic Complexes	Classification of TLC. Main functions of warehouses. Main issues of terminals' activity. Efficient usage of warehouses.
25	Operating Procedure at the Border Stations	Significance of the international transportation. Types of international railway lines. Operating procedure at the border stations. Border control. Customs control. Quarantine.
26	Overseas High-speed Railways and Passenger Stations	General information about high-speed passenger traffic. History of high-speed traffic. Prospective of high-speed traffic in Russia. High-speed rolling stock.
27	Business Planning of Transport	Significance of BP in an organization. Expert evaluation of business. Business plan of an organization.
28	Multimodal Centers for Transport & Logistics	Transport systems and means of transportation. Multimodal traffic and terminals. Centers for transport and logistics.
29	Supply Chain Management Basics	Goods and goods markets. Transport systems. Making of supply chains. Control of supply chains.
30	Project Management in Transport Business & Logistics	Law regulations of international transportation. Transport conditions in trade contracts. Definition and classification of an investment project.
31	Information Support for Transport Business	Information flows and logistic information systems. Interaction of transport and information flows. Information sources of transport logistics. Customs procedures automation.
	<b>Variant Subjects</b>	
	<b>Compulsory Subjects</b>	
1	Container Transport System	
	<b>Optional Subjects</b>	
1	Marketing of Transport	

	Services	
2	Development of Perishable Goods Transportation Technology	Perishable goods: storage conditions and preparation for transportation. Cold storages and its classification. Refrigerating cars.
3	Up-to-date Reconstruction Issues of Stations and Hubs	Interaction of different means of transport at the transport hubs. Classification of transport hubs. Development of the transport hubs,
	Physical Education	
	Practice, Research	
	Practical Study	
	Internship	
	State Final Examination	

## 7. Amount of credits, hours for each subject, forms of knowledge control

Title	Credits	Hours	Form of control
<b>HUMANITIES, SOCIAL STUDIES AND ECONOMICS</b>	38	1368	
<b>Main Subjects</b>	28		
History	4	144	Exam
Philosophy	3	108	Exam
Political Science	2	72	Test
Study of Culture	2	72	Test
Economics	3	108	Test
Law	2	72	Test
Russian Language and Speech Culture	2	72	Test
Foreign Language	10	360	Exam
Social Studies	2	72	Test
Psychology and Pedagogy	2	72	Test
Outsourcing in the Spheres of Transport Business and Logistics	2	72	Test
<b>Variant Subjects</b>	4	144	
<b>Compulsory Subjects</b>	2	72	
History of Technology	2	72	Test
<b>Optional Subjects</b>	2	72	
Law Basics for Transport Safety	2	72	Test
Business Law			
<b>MATHEMATICS AND NATURAL SCIENCES</b>	62	2232	
<b>Main Subjects</b>	56	2016	
Mathematics	18	648	Exam
Physics	5	180	Exam
Theoretical Mechanics	2	72	Test
Applied Mechanics: Strength of Materials	2	72	Test
Applied Mechanics: Machine Elements	2	72	Test
Information Science	7	252	Exam
Chemistry	3	108	Test
Ecology	3	108	Exam
Mathematical analysis for systems and processes	5	180	Exam
Engineering & Computer Graphics	5	180	Exam
Information Technologies in Transport Business and Logistics	4	144	Exam
<b>Variant Subjects</b>	6	216	

<b>Compulsory Subjects</b>	4	144	
Accounting and Railway Statistics	2	72	Test
Ergonomics	2	72	Test
<b>Optional Subjects</b>	2	72	
Metrology, Standardization and Certification	2	72	Test
Network Information Resources			
<b>MAJOR RELATED SUBJECTS</b>	146	5256	
<b>Main Subjects</b>	142	5112	
Material Science	3	108	Test
General Electrotechnics & Electronics	4	144	Exam
Human Safety	3	108	Test
Marketing Basics	2	72	Test
Transport Business Basics	3	108	Exam
Refrigerated Transport and Heat Engineering Basics	4	144	Exam
Transport in General	4	144	Exam
Transport Economics	4	144	Exam
Means of Communication	4	144	Exam
Non-traction Rolling Stock	4	144	Exam
Railway Traction	5	180	Exam
Freight Management	4	144	Exam
Transport & Cargo Systems	4	144	Exam
Railway Automatics, Telemechanics and Communication	4	144	Exam
Railway Stations and Junctions	13	468	Exam
Freight and Business Management	9	324	Exam
Transport Law	4	144	Exam
Transport Service	2	72	Test
Interaction Between Different Means of Transportation	4	144	Exam
Railway Transport Maintenance and Traffic Security	3	108	Exam
Railway Transport Security Technologies	3	108	Exam
Transport Safety	2	72	Test
Transport Logistics	2	72	Test
Terminal & Logistic Complexes	2	72	Test
Operating Procedure at the Border Stations	2	72	Test
Overseas High-speed Railways and Passenger Stations	2	72	Test
Business Planning of Transport	3	108	Test
Multimodal Centers for Transport & Logistics	3	108	Test
Supply Chain Management Basics	3	108	Exam
Project Management in Transport Business & Logistics	3	108	Test
Information Support for Transport Business	3	108	Exam
<b>Variant Subjects</b>	4	144	
<b>Compulsory Subjects</b>	2	72	
Container Transport System	2	72	Test
<b>Optional Subjects</b>	2	72	
Marketing of Transport Services	2	72	Test
Development of Perishable Goods Transportation Technology			
Up-to-date Reconstruction Issues of Stations and Hubs			
Physical Education	2	400	Test
Practice, Research	30		
Practical Study	6	216	Test
Internship	24	364	Test
State Final Examination	22	792	

**8. Education Level required for the program:** general (full) secondary, secondary or primary professional education (diploma must certify the completion of general (full) secondary education course).