Syllabus

Course Program

International Road Freight Haulage

Specialty
274 – Automobile transport

Institute
Institute of Mechanical Engineering and Transport

Educational program
Automobiles and Automobile Industry

Department
Car and Tractor Industry (152)

Level of education
Master's level

Course type
Special (professional), Optional

Semester
2

Language of instruction
English,

Lecturers and course developers

First name and surname

email@khpi.edu.ua
Doctor of Engineering Technical Sciences, Associate Professor, Associate Professor of the Automobile and Tractor Engineering Department of KhPI National Technical University

Work experience - 10 years. Author of more than 100 scientific and educational and methodological works. Leading lecturer in the disciplines: "Mathematical models and basics of JSC automation", "Oscillations and vibration protection in tractor construction", "Numerical methods and basics of optimization", "Ergonomic properties and ecology of self-propelled machines".
More about the lecturer on the department's website

General information

Summary

The discipline "International road freight transportation" develops knowledge and skills that are necessary when studying the organization of modern road freight transportation.

Course objectives and goals

Acquisition of theoretical knowledge and practical skills in the field of production functions and typical tasks of activities in the field of organization of the transport process and its management during cargo transportation. Formation of understanding of theoretical issues related to the development of mathematical models of freight transportation logistics, description of algorithms of optimization methods, etc..

Format of classes

Lectures, practical classes, consultations, self-study. Final control in the form of an exam.

Competencies

The ability to choose different types of routes and to know the methods of their development, the principles and order of coordination of the work of vehicles and infrastructure institutions, to know the regulations regarding the organization of traffic safety when transporting all types of cargo.

Learning outcomes

To know the types of routes and to master the methods of their development, the principles and procedure of coordination of the work of cars and institutions of the motor transport infrastructure. To know the regulatory provisions regarding the organization of traffic safety when transporting all types of cargo within the country and on international routes.

Student workload

The total volume of the course is 90 hours (3 ECTS credits): lectures - 16 hours, practical classes - 16 hours, self-study- 58 hours.

Course prerequisites

To successfully pass the course, you must have knowledge and practical skills in the following disciplines: Technical operation of cars, auto technical expertise and resource conservation, Management in a car service, Warehouse and transport logistics.

Features of the course, teaching and learning methods, and technologies

Lectures are held interactively using multimedia or remote technologies. In practical classes, a project approach to learning is used, and attention is focused on the application of information technologies.

Program of the course

Topics of the lectures

Topic 1. The role and place of road transport in the transport system.
1.1. Transport as a branch of material production.
1.2. Characteristics of types of transport.
1.3. Classification of road transport.
1.4. Passenger transportation in a single transport system
Topic2. Cargoes and cargo flows.
2.1. Classification and characteristics of cargo.
2.2. Packaging and marking of goods.
2.3. Volume of transportation, cargo circulation and cargo flows.
Topic 3. Productivity of rolling stock in road freight transportation.
3.1. The transport process and its elements during cargo transportation.
3.2. Technical and operational performance indicators of rolling stock.
3.3. Productivity of rolling stock.
3.4. Qualitative and quantitative analysis of the influence of technical and operational indicators on the productivity of rolling stock.
Topic 4. Selection of rolling stock.
4.1. Conditions of operation of rolling stock.
4.2. Classification of rolling stock.
4.3. Operational qualities of rolling stock.
Topic 5. Organization of passenger transportation.
5.1. State regulation of passenger transportation.
5.2. The carrier and the competitive principles of its definition.
5.3. Standardization, certification and licensing of passenger transportation.
Topic 6. Passenger vehicles.
6.1. Classification and characteristics of vehicles.
6.2. Technical and operational indicators of passenger vehicles.
6.3. Requirements for the infrastructure of communication routes.
Topic 7. Organization of the route system.
7.1. Technical and operational indicators of the route and route system.
7.2. Optimization of the route system.
Topic 8. Organization of passenger transportation in urban and suburban traffic.

8.1. Organization and management of passenger transportation.
8.2. Organization of combined traffic modes on the route

Topics of the workshops

Topic1. Volumes of cargo transportation, cargo circulation and cargo flows.
Topic 2. Selection of specialized rolling stock.
Topic 3. Analysis of the car's hourly performance.
Topic 4. Rationalization of car traffic routes.
Topic 5. Designing collective routes. Analysis of transport works using the method of "broom" and consecutive runs.
Topic 6. Construction of a delivery (collection) route using the polyhedron method.
Topic 7. Selection of rolling stock for work on routes.
Topic 8. Coordinating the operation of cars and the load post.

Topics of the laboratory classes

Laboratory work within the discipline is not provided.

Self-study

The course involves independent study of individual issues related to the organization of road freight transportation.

Course materials and recommended reading

A list of sources of information and materials formatted in accordance with the standards. It's possible to split the list into sections, e.g. Compulsory materials and Additional materials, etc.

Compulsory materials

1. International road freight haulage. Methodological instructive regulations for practical work of master degrees of specialty 274 "Automobile transport" full-time education / A. Kozhushko. – Kharkiv : NTU «KhPI», 2022. – 48 p..
2. Організація автомобільних перевезень [Електронний ресурс] : метод. вказівки до курсового проекту : для магістрів спец. 274 «Автомобілі та автомобільне господарство» / Національний технічний університет «Харківський політехнічний інститут» ; уклад.: А.П. Кожушко, М.О. Мітцель. – Електрон. текстові дан. – Харків : НТУ «ХПІ», 2018. – 51 с.
3. Автомобільні перевезення [Електронний ресурс] : метод. вказівки щодо виконання практичних робіт : для бакалаврів спец. 274 «Автомобільний транспорт» / Кременчуцький Національний університет ім. М. Остроградського ; уклад.: С.М. Черненко. – Електрон. текстові дан. – Кременчук: КНУ, 2019. – 58 с.
4. Мірошниченко Л.О. Автомобільні перевезення: організація і облік. – Харків: «Фактор», 2002 – 1341 с.
5. Вільковський Є.К. Вантажознавство (вантажі, правила перевезень, рухомий склад) – 2-е вид., перероблене і доповнене / Є.К. Вільковський, І.І. Кельман, О.О. Бакуліч. – Львів: «Інтелект-Захід», 2007, – 496 с.
6. Закон України «Про автомобільний транспорт» від 05.04.2001 р. Режим доступу: http://zakon2.rada.gov.ua/laws/show/2344-14 (дата звернення 29.07.2022).
7. Закон України «Про транспорт» (Відомості Верховної Ради (ВВР), 1994, N 51, ст.446). Режим доступу: http://zakon1.rada.gov.ua/laws/show/232/94-%D0%B2%D1%80 (дата звернення 29.07.2022).
8. Закон України «Про перевезення небезпечних вантажів» (Відомості Верховної Ради України (ВВР), 2000, № 28, ст. 222). – Режим доступу: http://zakon3.rada.gov.ua/laws/show/1644-14 (дата звернення 29.07.2022).
9. Краснокутський В. М. Спеціалізований рухомий склад на автомобільному транспорті : навч. посібник / В.М. Краснокутський, В.Б. Самородов, С.Г. Селевич ; Нац.техн. ун-т «Харків. політехн. ін-т». – Харків : Друкарня Мадрид, 2020. – 240 с.

Assessment and grading

Criteria for assessment of student performance, and the final score structure

Exam. Current assessment: 2 online modular tests. Performing calculation work.

Grading scale

Total points	National	ECTS
90–100	Excellent	A
82–89	Good	B
75–81	Good	C
64–74	Satisfactory	D
60–63	Satisfactory	E
35–59	Unsatisfactory (requires additional learning)	FX
1–34	Unsatisfactory (requires repetition of the course)	F

Norms of academic integrity and course policy

The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management.
Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website:http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/

Approval

Approved by	Date, signature	Head of the department Oleksii REBROV
	Date, signature	Guarantor of the educational program Nikolay MITTSEL