

ADVANCED VEHICLE DESIGN SOLUTIONS

(course title)

COURSE SYLLABUS ABSTRACT

7-06-0715-01 Transport

(speciality code and name)

Technical operation of cars

(concentration)

	STUDY MODE	
	full-time	part-time
Year	1	2
Semester	1	3
Lectures, hours	34	8
Practical classes (seminars), hours	16	4
Exam, semester	1	3
Contact hours	50	12
Independent study, hours	58	96
Total course duration in hours / credit units	108/3	

1. Course outline

The purpose of the discipline is to develop undergraduates' knowledge and skills in the design, classification, operation, functional and strength calculations, and operational properties of modern and promising motor vehicles, allowing them to master the methods of developing projects for the production and technical base of road transport organizations for the organization of maintenance and repair of modern and promising vehicles. (electric vehicles, hybrid vehicles, unmanned vehicles, magnetic cushion vehicles, etc.).

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- the role, status and prospects of the automotive industry development;
- the role, status and prospects of road transport development;
- the general structure and classification of modern and promising vehicles;
- main characteristics of motor vehicles;
- purpose, classification, arrangement and principles of operation of aggregates, systems, mechanisms, components of motor vehicles;

- basic principles of motor vehicle movement;

- operational properties of motor vehicles;

- indicators, assessment methods and ways to improve the performance of vehicles;

- work processes, types of loading and methods of calculation of elements of motor vehicles;

- assessment methods and ways to improve motor vehicles;

be able to:

- apply the acquired knowledge in the technical operation of motor vehicles;

- to take into account the features of modern structures of motor vehicles when organizing technological processes of maintenance and repair;

- evaluate the design excellence of motor vehicles;

- understand the features of the device and work, evaluate their prospects;

- perform functional calculations of aggregates, assemblies, systems, mechanisms, as well as determine the parameters of movement of vehicles;

- identify and analyze the operational properties of motor vehicles;

to possess a skill:

- collection and analysis of information on the design, operation and operating rules of modern and promising vehicles;

- functional calculation of vehicle components, as well as methods for determining vehicle movement parameters;

- processing and analysis of experimental results;

- experimental studies;

- analysis of the perfection of vehicle designs.

3. Competencies

To use the results of scientific research and global trends in the automotive industry to develop projects for the production and technical base of AT for the organization of maintenance and repair of promising vehicles

4. Requirements and forms of midcourse evaluation and summative assessment

The oral and written form of the intermediate attestation is an exam, the oral form of the current attestation is an interview during the defense of practical work.