FUNDAMENTALS OF VEHICLE DESIGN

(course title)

COURSE SYLLABUS ABSTRACT

Specialty 6-05-0715-03: Automobiles, Tractors, Mobile and Technological Complexes
Specialization: Computer Engineering in the Automotive Industry

	STUDY MODE
	full-time
Year	**4**
Semester	7
Lectures, hours	16
Practical classes (seminars), hours	16
Pass/fail, semester	7
Contact hours	32
Independent study, hours	98
Total course duration in hours / credit units	130/4

1. Course outline

The aim of the course is to provide students with knowledge of automobile design that allows them to solve problems that arise when creating new automobiles.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

– requirements for vehicles and their classification, the content of the technical specifications for the vehicle, draft and technical projects;

– a system of theoretical foundations for the design and layout of a vehicle;

– the general layout of vehicles of different types and purposes, its parameters, the main requirements for them and approaches to the selection and optimization of these parameters;

– basic concepts and mathematical foundations of the theory of reliability of technical objects;

– methods for predicting the load of vehicle units and their elements, methods for assessing the reliability of units and the vehicle as complex systems at the design stage;

– approaches to assessing the reliability of a vehicle at the operational stage;

– the general sequence of predicting and ensuring the reliability of a vehicle during design;

be able to:

– analyze layout diagrams, design features and characteristics of foreign and domestic cars;

– calculate the service life of parts and systems using modern methods and computers;

to possess a skill:

- methods for conducting technical and economic analysis of the designed vehicle; - methods for assessing the technical level and quality of the vehicle; - methods for assessing the service life of the main parts and systems of vehicles.

3. Competencies

Be capable of self-development and improvement in professional activities

4. Requirements and forms of midcourse evaluation and summative assessment

The defense of individual assignments is carried out in oral and written form based on the questions given in the methodological recommendations. The test is carried out orally in the form of an answer to the questions in the ticket.