

MOTOR VEHICLE THEORY

(course title)

COURSE SYLLABUS ABSTRACT

6-05-0715-03 Cars, tractors, mobile and technological complexes (speciality code and name)

Computer engineering in the automotive industry

(speciality code and name)

	STUDY MODE
	full-time
Year	3
Semester	5,6
Lectures, hours	68
Laboratory classes, hours	16
Course paper, semester	6
Pass/fail, semester	5
Contact hours	84
Independent study, hours	60
Total course duration in hours / credit units	144/4

1. Course outline

The purpose of studying the discipline "Theory of the automobile" is to form students' knowledge, skills and abilities to model the processes of car movement, evaluate the effectiveness of its use in given conditions and implement the functional design of the car.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- indicators and characteristics of the vehicle's operational properties;
- physical properties and characteristics of the mechanisms and systems of the car;
- methods of mathematical description of car movement processes;
- methods for analyzing the modes and characteristics of vehicle movement and evaluating

its operational properties;

- the theory of the processes of interaction of the car with the external environment and the working processes of the mechanisms and systems of the car;

be able to:

– the theory of the processes of interaction of the car with the external environment and the working processes of the mechanisms and systems of the car;

be able to:

- perform an analysis of traction and speed properties and fuel efficiency of the vehicle;
- perform an analysis of braking properties, maneuverability, smoothness, controllability

and stability of the vehicle;

- carry out mathematical modeling of car movement processes;
- determine the main parameters of the car, its mechanisms and systems;
- optimize the main parameters of the car according to the specified performance criteria.

to possess a skill:

– assessment of traction-speed, fuel-economy, braking properties and smoothness of travel, controllability and stability of the car;

- determination of the vehicle's cross-country ability.

3. Competencies

Be capable of self-development and improvement in professional activity

Apply methodological foundations for designing autonomous vehicles

4. Requirements and forms of midcourse evaluation and summative assessment

The current certification oral and written.

The form of intermediate certification is an exam.