Running Gear and Body Design

COURSE SYLLABUS ABSTRACT

Specialty: 6-05-0715-03 «Cars, tractors, mobile and technological complexes»

Specialization: Computer engineering in the automotive industry

	Study mode
	Full-time
Year	4
Semester	7
Lectures, hours	34
Practical classes (seminars), hours	16
Laboratory classes, hours	16
Exam, semester	7
Contact hours	66
Independent study, hours	64
Total course duration in hours / credit units	130 / 4

1. Course outline

The purpose of the discipline is to form students' complex of knowledge, skills and abilities in designing the propulsion, suspension and load-bearing system of the car, as well as the development of its overall layout.

2. Course learning outcomes

Upon completion of the course, students will be expected to:

know:

- the design of the chassis of the car; methods of mathematical description (modeling) of the microprofile of a support surface and a self-propelled machine as a complex oscillatory system;
- methods of calculation (analysis and synthesis) of wheel propulsion: tires, discs, rims, hubs with bearings, beams of the drive and driven axles;
- suspension calculation methods: guiding device, elastic elements and shock absorbers;
- methods of calculation of the load-bearing system: frames and car bodies;

be able to:

- design a wheel drive (synthesize its scheme and choose rational design parameters);
- design the suspension of the car: guiding device, elastic elements and shock absorbers;
- design the vehicle's load-bearing system (frame and body);
- develop the overall layout of the car.

to possess a skill: the general methodology of designing a car as a complex technical product; methods for selecting the parameters of the elements of the wheel drive, suspension and bearing system of a self-propelled vehicle.

3. Competencies:

To be able to self-development and improvement in professional activities.

To apply the methodological foundations of the design of running systems and bodies.

4. Requirements and forms of current and interim certifications:

Oral-written and technical forms are used to diagnose competencies, as well as a modular rating system. The following diagnostic tools are used to assess the level of knowledge of students: work reports; electronic tests for conducting control works; exam.