

FUNDAMENTALS OF THEORY AND DESIGN OF INTERNAL COMBUSTION ENGINES

ANNOTATION TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

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

Specialization: Computer engineering in the automotive industry

	STUDY MODE
	full-time
Year	3
Semester	6
Lectures, hours	34
Laboratory classes, hours	16
Practices, hours	16
Exam, semester	6
Contact hours	66
Independent study, hours	42
Total course duration in hours / credit units	108/3

1. Brief content of the discipline

The purpose of the discipline is to form students' knowledge of the theory of work processes, kinematics and dynamics of internal combustion engines, skills and abilities of designing automobile engines.

2. Learning outcomes:

know:

- history, classification, purpose, principles of operation and requirements for autotractor engines and chassis of self-propelled machines, their mechanisms and systems;
- fundamentals of the theory of the engine and self-propelled machine;
- trends in the development of autotractor building;
- technical solutions that increase productivity, efficiency, ergonomics and environmental friendliness of a self-propelled machine;

be able to:

- analyze the processes occurring in the engine and chassis elements of a self-propelled machine;
- evaluate the characteristics and choose the engine, mechanisms and chassis systems for construction, road and hoisting and transport self-propelled equipment;
- calculate and build traction-dynamic and fuel-economic characteristics of a self-propelled machine and, on the basis of this, analyze its quality;

to possess a skill:

- methods of analysis of consumer properties of self-propelled equipment;
- methods for assessing the quality of engines and chassis of self-propelled vehicles.

3. Formed competencies:

Apply the methodological foundations of the design of internal combustion engines.

4. Requirements and forms of current and intermediate certification:

To diagnose competencies, oral-written and technical forms, as well as a module-rating system are used.

To assess the level of knowledge of students, the following diagnostic tools are used:

- reports on laboratory work and practical exercises;
- electronic tests for control work;
- exam.