

ENGINEERING MATERIAL TECHNOLOGY

ANNOTATION TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

6-05-0715-03 Cars, tractors, mobile and technological complexes Specialization Computer engineering

6-05-0715-07 Operation of ground transport and technological machines and complexes Profiling Technical operation of cars and car service

	STUDY MODE	
	full-time	part-time (6-05-0715-07)
Year	1	2
Semester	2	3
Lectures, hours	34	8
Laboratory classes, hours	16	4
Exam, semester	2	3
Contact hours	50	12
Independent study, hours	58	96
Total course duration in hours / credit units	108/3	

1. Summary of the academic discipline

The objectives of the discipline are to study the physical essence of technological methods for obtaining blanks by casting, pressure treatment, welding and their machining by cutting, and other methods. Mechanical foundations of technological methods of forming blanks and machine parts. Technological capabilities of the methods, their purpose, advantages and disadvantages, scope of application. Schematic diagrams of the operation of technological equipment. Schematic diagrams of tools, devices and accessories, their purpose and application.

2. Learning outcomes

to know:

- the essence of the methods of basic technological methods for obtaining blanks by casting, pressure treatment, powder metallurgy, welding, machining by cutting and other methods;
- technological capabilities of the methods, their purpose, advantages and disadvantages, scope of application;
- the economic feasibility of using various technological methods and methods of shaping and processing parts, workpieces;
- schematic diagrams of the operation of technological equipment (machines, machines, automata, etc.), tools, devices and accessories, their purpose and application.

be able to:

- to choose and justify a rational set of methods for shaping and processing blanks and machine parts;
- develop, based on the material and shape of the part, the technological shape of the workpiece;
- to make up the technological process of processing the obtained material in order to obtain a workpiece or a finished part with the necessary technological and operational properties of the material or product;
- evaluate the technical and economic efficiency of the selected technological process.

have skills:

- selection of the workpiece of the part, taking into account its purpose, shape, material;
- application of information on various methods of machining machine parts;
- apply information on the operation schemes of various types of technological equipment in mechanical engineering.

3. Formed competencies

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To use the basic concepts of methods of obtaining structural materials, surface treatment methods, to apply them in the manufacture of parts of cars, tractors and electric vehicles
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Understand the principles of obtaining structural materials and apply surface treatment methods in the manufacture of car parts

4. Requirements and forms of current and interim certification.

The defense of laboratory work is carried out orally.

The exam is conducted in writing in the form of answers to test questions.