

TECHNOLOGY OF STRUCTURAL MATERIALS

(course title)

COURSE SYLLABUS ABSTRACT

Specialty: 1– 37 01 06 – Technical operation of cars

(speciality code and name)

	STUDY MODE	
	full-time	part-time
Year	2	2
Semester	3	3
Lectures, hours	34	8
Laboratory classes, hours	34	8
Pass/fail, semester	3	3
Contact hours	68	16
Independent study, hours	52	104
Total course duration in hours / credit units	120/3	120/3

1. Course outline

The discipline studies the physical essence of technological methods for obtaining blanks by casting, pressure treatment, welding and their machining by cutting and other methods. Mechanical fundamentals 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. Course learning outcomes

Upon completion of the course, students will be expected 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 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:

- 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.

possess:

- methods of selecting the workpiece of the part, taking into account its purpose, shape, material;
- information about the possibilities of various methods of machining machine parts;
- possess information about the operation schemes of various types of technological equipment in mechanical engineering.

3. Competencies

BOD 3. Understand the principles of obtaining structural materials and methods of surface treatment in the manufacture of car parts.

4. Requirements and forms of midcourse evaluation and summative assessment

The defense of laboratory work is carried out orally.

The test is carried out in writing in the form of answers to test questions.