TECHNOLOGY OF STRUCTURAL MATERIALS

COURSE SYLLABUS ABSTRACT

1-37 01 02 "Automotive"

	STUDY MODE
	full-time
Year	2
Semester	3
Lectures, hours	34
Laboratory classes, hours	34
Test, semester	3
Contact hours	68
Independent study, hours	40
Total course duration in hours / credit units	108/3

1. Course outline

The objectives of the discipline are to study the physical essence of the technological methods for manufacturing blanks by casting, pressure treatment, welding and their machining by cutting and other methods. Mechanical foundations of technological methods for shaping blanks and machine parts. Technological possibilities of methods, their purpose, advantages and disadvantages, scope. Schematic diagrams of the operation of technological equipment. Schematic diagrams of tools, fixtures and fittings, 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 and other methods;
- technological capabilities of the methods, their purpose, advantages and disadvantages, scope;
- economic feasibility of using various technological methods and methods for shaping and processing parts, blanks;
- schematic diagrams of the operation of technological equipment (machines, machines, automatic machines, etc.), tools, fixtures and equipment, their purpose and application.

be able to:

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

possess:

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

3. Competencies

CK-5 – Perform design calculations for strength, rigidity and stability, select and apply materials depending on the specific operating conditions of machine and equipment parts, perform calculations when designing parts and assemblies

4. Requirements and forms of midcourse evaluation and summative assessment

To assess the current performance, a written or oral form is used (defense of laboratory work), and for an intermediate one, an oral-written form (test).