

# TECHNOLOGY OF STRUCTURAL MATERIALS

(name of the academic discipline)

## ANNOTATION

### TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

**Specialty:** 1-36 07 02 – Production of products based on three-dimensional technologies

	Form of higher education	
	Full-time (day)	Correspondence (full)
Course	1	2
Semester	1	4
Lectures, hours	34	6
Laboratory classes, hours	34	6
Classroom control work (semester, hours)		4 (2 hours)
Exam, semester	1	4
Classroom hours in the academic discipline	68	14
Independent work, hours	52	106
Total hours of academic discipline / credits	120/3,0	

#### 1. Summary of the discipline:

The purpose of the discipline is to assimilate students' knowledge about the structure and properties of metals, alloys and other structural materials, as well as about the methods of obtaining and processing them to obtain parts with specified properties and configuration.

#### 2. Learning outcomes:

As a result of mastering the discipline, the student should

**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; economic feasibility of using various technological methods and methods of shaping and processing of parts, accessories; 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 forming and processing machine parts; develop, based on the material and shape of the part, the technological form of the workpiece; make up the technological process of processing the obtained material in order to obtain a workpiece or finished part with the necessary technological and operational properties of the material or product; evaluate technical and economic efficiency the selected technological process.

**possess:** methods of selecting the workpiece of a 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. Formed competencies:

SK-17: To know the basic technological processes of shaping products for structural purposes, the theoretical foundations of the processes taking place. Methods of calculation of theoretical parameters of processes.

#### 4. Requirements and forms of current and interim certification.

Evaluation tools used: test tasks for the protection of laboratory work, test tasks for passing the exam.

Forms of diagnosis: oral, written.