

TECHNOLOGIES AND STRUCTURAL MATERIALS

ANNOTATION TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION **Specialty** 6-05-0716-03 «Information and Measuring Devices and Systems» **Specialization:** Information systems and technologies of non-destructive testing and diagnostics

	Form of higher education Full-time	
	(full-time)	Correspondence abridged (set 2025)
Course	3	3
Semester	5	5
Lectures, hours	34	6
Laboratory classes, hours	16	4
Credit, semester	5	5
Classroom hours in the academic discipline	50	10
Self-study, hours	58	98
Total hours per academic discipline / credits	108/3	108/3

1. Summary of the academic discipline

The purpose of the academic discipline is to assimilate by students knowledge about the structure and properties of metals, alloys and other structural materials, as well as about the methods of their production and processing to obtain parts with specified properties.

2. Learning outcomes:

To know:

- methods for studying the structure and properties of materials;
- fundamentals of theory and practice of thermal, chemical-thermal, thermomechanical treatment of metal materials;
- practical ways to study the structure, properties of materials and their heat treatment;
- modern materials and effective methods of their heat-strengthening treatment.

can:

- make rational use of reference literature on the choice of materials and their processing technologies that provide the necessary properties;
- correctly identify the application areas of a particular material;
- assign processing methods and modes that ensure optimal material properties when parts are operating under certain operating conditions.

have the skill:

- to study the structure and properties of materials;
- selection of materials based on their properties and operating conditions.

3. Competencies to be formed:

Ability to choose the technology of processing materials in the design of devices.

4. Requirements and forms of current and intermediate certification.

The defense of laboratory work is carried out in oral or test forms. The test is carried out in writing in the form of answers to test questions.