

# METHODS OF MATERIALS AND PRODUCTS RESEARCH

## ANNOTATION

### TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Speciality 1-36 07 02 Production of products based on three-dimensional technologies

	Form of higher education	Form of higher education
	Full-time (full-time)	Correspondence
Course	3	4
Semester	5	7
Lectures	34	6
Laboratory classes, hours	34	6
Exam, semester	5	7
Classroom hours in the academic discipline	68	12
Independent work, hours	52	108
Total hours / credits	120 / 3	120/3

#### 1. Summary of the academic discipline

The discipline studies the structure and properties of metals, alloys and composite materials, methods for determining physical and mechanical properties, evaluation of technological and operational properties. The methods of investigation of mechanical, physical and chemical properties (mechanical tests, thermal, dilatometric, magnetic analyses), as well as structural research methods (macro-, micro-, electron- and X-ray structural analyses) are described.

#### 2. Learning outcomes:

To know:

- basic methods for the study of mechanical, physical and chemical properties;
- basic structural research methods;

be able to:

- apply basic methods of studying mechanical, physical and chemical properties;
- use basic structural research methods;
- rationally use reference literature on the selection of materials that provide the necessary

indicators of properties;

own:

- practical skills in studying the structure and properties of materials;
- methods of selecting materials based on their properties and operating conditions.

#### 3. Formed competencies:

SK-14. Know the methods of experimental determination of the properties of polymer and composite materials and quality indicators of products (structural elements).

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

The protection of laboratory work is carried out in a test form.

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