ADDITIVE SYNTHESIS MATERIALS
(name of the discipline)

ANNOTATION
TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Specialty 6-05-0722-05 "Production of products based on three-dimensional technologies"
Profilings "Mechanical engineering and mechanical science", "Welding technologies", "Computer engineering of transport and technological machines"

	STUDY MODE
	full-time
Year	2
Semester	3, 4
Lectures, hours	66
Laboratory classes, hours	68
Pass/fail, semester	3
Exam, semester	4
Contact hours	134
Independent study, hours	190
Total course duration in hours / credit units	324/9

1. Brief content of the discipline

The discipline "Materials of Additive Synthesis" contains general ideas about the structure and properties of metals, alloys and other types of structural materials used in industry, including in the field of additive technologies. It is aimed at studying the area of their application, advantages, disadvantages, and methods of processing into products.

2. Learning Outcomes

A student who has studied the discipline should **know:**

- the main groups of additive synthesis materials and their application areas.
- fundamentals of the theory of heat treatment of metallic materials;
- practical skills in studying the structure, properties of materials, their heat treatment, as well as skills in improving the structure and properties of materials;

be able to:

- rationally use reference literature on the selection of materials, technologies for their processing, ensuring the necessary indicators of the properties of the resulting products;
- correctly determine the areas of application of a particular material;
- assign methods and modes of structure-changing processing.

to possess a skill:

- properties of materials;
- modern basic technological methods of forming products in the field of additive technologies;
- methods of determining the area of application of a particular material.

3. Formed competencies:

- Have systematic knowledge of materials used in additive technologies, their components, production technology, structure and properties

4. Requirements and forms of current and intermediate certification

Current and intermediate certification is carried out in written and oral-written form through reports on laboratory work with their oral defense, a written exam.