ADDITIVE MANUFACTURING
(course title)

COURSE SYLLABUS ABSTRACT

6-05-0714-02 Mechanical Engineering Technology, Metal-cutting Machines and Tools
(speciality code and name)
Equipment and Technologies of Highly Effective Materials Processing
(concentration)

	STUDY MODE
	full-time
Year	4
Semester	8
Lectures, hours	12
Laboratory classes, hours	12
Pass/fail, semester	8
Contact hours	24
Independent study, hours	66
Total course duration in hours / credit units	90/3

1. Course outline

The course «Additive Manufacturing» contains general ideas about the methods of layer-by-layer synthesis of three-dimensional objects using a digital model, as well as about the design and preparation of production for the creation of finished products from polymer and metal materials.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

– the theoretical foundations of the processes of forming products using additive technologies;

– basic technological operations in shaping and post - processing of additive manufacturing products;

– methods of calculation and modeling of the processes of forming products of additive manufacturing, the technical standards used in this case;

be able to:

– choose suitable technological processes for obtaining additive manufacturing products;

– calculate the parameters of typical technological processes for forming products of additive manufacturing and work them out in pilot production conditions;

– to evaluate the manufacturability of the design of additive manufacturing products;

to possess a skill:

– selection of the three-dimensional production process according to technical and economic indicators, taking into account energy and resource conservation;

– development of technological and related documentation;

– ensuring the structure and operational properties of materials at the stage of forming additive manufacturing products.

3. Competencies:

Know the equipment, types and technological processes of welding production, be able to control the quality of welded joints, select and develop the welding process.

4. Requirements and forms of midcourse evaluation and summative assessment

The current and intermediate attestation is conducted in written and oral-written form through reports on laboratory work with their oral-written defense, written pass/fail.