ADDITIVE MANUFACTURING TECHNOLOGIES IN THE PRODUCTION OF POLYMER AND COMPOSITE PRODUCTS
COURSE SYLLABUS ABSTRACT

Specialty: 6-05-0722-05 Production of products based on three-dimensional technologies

	STUDY MODE
	full-time
Year	4
Semester	7
Lectures, hours	34
Laboratory classes, hours	16
Exam, semester	7
Contact hours	50
Independent study, hours	100
Total course duration in hours / credit units	100/3

1. Course outline

Types of additive technologies, methods of forming products using three-dimensional production technologies, design of technological processes, quality assurance and control of products made of polymers and composites.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: - Basic properties of product materials; - Types of additive technologies, theoretical foundations of processes; - Ensuring and monitoring product quality, accuracy and stability of dimensions and shape of products made of polymers and composites; - The influence of technological requirements on the design and accuracy of products.

be able to: - Develop a technological process for the production of products from polymers and composites, taking into account the requirements and operating conditions; - perform strength calculations taking into account the properties of polymers and composites; - evaluate the achievable accuracy of the dimensions and shape of products depending on the material, manufacturing technology and operating conditions.

to possess a skill:

- selection of materials for products of various purposes, taking into account operational requirements; - selection of the additive manufacturing process based on technical and economic indicators, taking into account energy and resource conservation; - performing strength and rigidity calculations, taking into account accuracy and reliability requirements.

3. Competencies

Apply additive technologies and equipment in the production of products from polymers, composites, metals, alloys and inorganic materials.

4. Requirements and forms of midcourse evaluation and summative assessment

Laboratory assignments are defended orally.

Individual assignments are defended orally.

Questionnaires are administered orally.

The assessment and exam are completed in writing, with questions and problem solving required.