Additive Manufacturing
(course title)

COURSE SYLLABUS ABSTRACT

6-05-0611-01 Information systems and technologies
(speciality code and name)

Information systems and technologies in designing and producing
(concentration)

	STUDY MODE	
	full-time	part-time (shortened program)
Year	4	3
Semester	8	6
Lectures, hours	24	6
Laboratory classes, hours	24	6
In-class test (semester, hours)		6 semester (2 hour)
Exam, semester	8	6
Contact hours	48	14
Independent study, hours	60	94
Total course duration in hours / credit units	108/3	

1. Course outline
Classification of 3D printing technologies. Extrusion methods of 3D printing. Powder 3D printing methods. Inkjet 3D printing methods. Multi-stage and continuous 3D printing by photopolymerization.

2. Course learning outcomes
Upon completion of the course, students will be expected to
know**:** the main stages of creating three-dimensional objects by additive production methods, methods for preliminary optimization of three-dimensional objects, the main errors that arise during the preparation of a three-dimensional model, as well as methods for their elimination, existing object construction algorithms, basic three-dimensional printing technologies and the physical principles underlying them.
be able to**:** select the most appropriate 3D printing method based on the physical principles and limitations of the method, use the software to pre-check the 3D model and correct errors, position the model and build supporting structures in accordance with the printing methods used, select parameters and printing algorithms depending on the material used and the type of object.
to possess a skill**:** skills in analyzing the task of manufacturing a given three-dimensional object, identifying problem areas during the subsequent manufacture of the object by additive production methods, selecting the most suitable three-dimensional printing methods in accordance with, selecting the most suitable parameters, materials and printing algorithms, correcting triangulation errors during the preparation of the model for the printing process, printing on commercially available three-dimensional printers of the FDM and SLA/DLPc class.

3. Competencies
Own the basis for the design of mechanisms, machines, technological equipment and technological processes of machine-building production.

4. Requirements and forms of midcourse evaluation and summative assessment
– verbal-written: laboratory protection, exam.