

GEOMETRIC MODELING IN CAD

(name of the discipline)

ANNOTATION TO THE CURRICULUM OF A HIGHER EDUCATION INSTITUTION

Specialty 1-53 01 01 « Automation of technological processes and productions »

	Form of higher education
	Full-time (daytime)
Course	4
Semester	8
Lectures, hours	18
Practical classes, hours	18
Test, semester	8
Classroom hours in the academic discipline	36
Independent work, hours	54
Total hours of academic discipline / credits	90/3

1. Summary of the academic discipline

The purpose of teaching the discipline "Geometric modeling in CAD" is to form students of specialty 1-53 01 01 "Automation of technological processes and production" general methodological foundations and practical skills in the field of development and application in CAD of geometric models of flat and three-dimensional design objects, their visualization and working with the model using specialized software.

2. Learning outcomes

The objective of the discipline is to acquire the skills of building three-dimensional models of engineering facilities.

As a result of mastering the discipline, the student should **know**:

- the structure and principles of CAD construction;
- modern terminology in the field of automation of engineering facilities design;
- basic methods of automation of engineering facilities design;
- methods of computer-aided design of structures and technologies;
- fundamentals of building three-dimensional models of engineering facilities;
- methods of setting computer-aided design tasks for various design procedures, operations, their formalization and algorithmization;
- the methodology of working in a CAD environment with different levels of design automation.

As a result of mastering the discipline, the student should **be able to**:

- use methods of creating geometric models when performing design work;
- design engineering facilities in the environment of modern CAD systems;
- choose the right class and degree of complexity of the geometric model for the projected object.

As a result of mastering the discipline, the student must **possess**:

- skills in creating two-dimensional and three-dimensional geometric models of production facilities and automation tools for mechanical assembly operations in CAD systems;
- skills of using basic CAD software in the development of automated design procedures for designing, modeling and analyzing automation tools for mechanical assembly operations;
- skills of computer-aided design of structures and technologies.

3. Formed competencies

The development of this discipline should ensure the formation of the competence of SK-14.4 - to master the methods of 2D and 3D modeling of various forms based on a computer graphics system

4. Educational technologies: multimedia, using computers.