MATHEMATICAL MODELING OF TECHNOLOGICAL TASKS

COURSE SYLLABUS ABSTRACT

6-05-0713-04 - « Equipment and technologies for highly efficient material processing processes »

Specialization: Automation of technological processes and production in mechanical engineering

(speciality code and name)

	STUDY MODE
	full-time
Year	4
Semester	8
Lectures, hours	12
Practical 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 "Mathematical modeling of technological problems" is to increase the level of specialized competence in solving problems of modeling various technological problems.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- Elements of mathematical logic, graph theory, set theory, types of mathematical models, and the application of these methods to modeling process problems.
- Types of computer-aided design (CAD) systems, elements of systems engineering, methods for algorithmizing process problems, modeling methods in engineering design, types of CAD support;

be able to:

- Model the most efficient process routes in a FPS;
- Build empirical models of process objects;
- Optimize cutting conditions;

to possess a skill:

- Modern methods for modeling process problems.

3. Competencies

Master the methods of 2D- and 3D-modeling of various shapes based on a computer graphics system

4. Requirements and forms of midcourse evaluation and summative assessment

The following diagnostic tools and forms are used to assess the level of students' knowledge: defense of individual assignments (oral); passing a test (oral and written).