

MATHEMATICAL MODELING OF TECHNOLOGICAL PROBLEMS

(course title)

COURSE SYLLABUS ABSTRACT

1-36 01 04 - « Equipment and technologies for highly efficient material processing processes »
(speciality code and name)

	STUDY MODE
	full-time
Year	4
Semester	7
Lectures, hours	34
Laboratory classes, hours	34
Exam, semester	7
Contact hours	68
Independent study, hours	40
Total course duration in hours / credit units	108/3

1 The purpose of the discipline "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, methods of linear and dynamic programming, the use of these methods for modeling technological problems.

- types of computer-aided design systems (CAD), elements of system engineering, methods of algorithmization of technological tasks, modeling methods for design engineering, types of CAD software;

be able to:

- to model the most productive technological routes in the GPS;

- to simulate the optimal equipment of the machining center;

- to optimize the total tolerance field; - to simulate the optimal trajectory of the cutting tool;

- to optimize cutting modes;

possess:

- modern methods for modeling technological problems.

3. Competencies

Codes of generated competencies	Names of competencies being formed
SK-7	To be able to provide a high level of automation in the design of technological processes, to know the principles and types of automated process control systems.

4. Requirements and forms of current and intermediate certification.

To assess the level of knowledge of students, the following diagnostic tools are used:

- written reports on laboratory work with their oral defense;

- control polls;

- interview during individual and group consultations;

- exam.