

# **DISCRETE MATHEMATICS AND MATHEMATICAL MODELING**

## **COURSE SYLLABUS ABSTRACT of higher education institution**

**Specialty 1-53 01 01 "Automation of technological processes and production"**

**Specialization 1-5101 01 - 01 Automation of technological processes and  
production (mechanical engineering and instrumentation)**

	STUDY MODE
	Full-time
Year	2
Semester	3
Lectures, hours	34
Laboratory classes, hours	34
Course paper, semester	3
Contact hours	68
Independent study, hours	132
Total course duration in hours / credit units	200/6

### 1. Course outline

Elements of mathematical logic, griffon theory, set theory, types of mathematical models, methods of linear and dynamic programming.

### 2. Course learning outcomes

Upon completion of the course, students will be expected to

know: basic concepts, definitions and methods of set theory, mathematical logic, graph theory, methods of linear and dynamic programming, basic methods of setting, solving and studying mathematical models of applied problems.

be able to: build mathematical models; compare and compare mathematical models; choose the appropriate mathematical method and algorithm for solving the problem;

possess: mathematical tools of the discipline in solving practical problems that may arise in professional activities.

### 3. Competencies.

SK-1.2 – to know the elements of mathematical logic, the theory of griffins, the theory of sets, the types of mathematical models, the methods of linear and dynamic programming, the application of these methods to optimize technological processes.

### 4. Requirements and forms of midcourse evaluation and summative assessment

Intermediate certification: CW – control work; ICP – intermediate control of progress. Current certification: test. The development of this academic discipline will ensure the formation of the required competence of SK-1.2.