

DISCRETE MATHEMATICS AND MATHEMATICAL MODELING

COURSE SYLLABUS ABSTRACT of higher education institution

Specialty 1-36 01 01 "Technology of mechanical engineering"

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	2	3	3
Semester	3	6	5
Lectures, hours	34	4	4
Laboratory classes, hours	34	4	8
Course paper, semester	3	6	5
Contact hours	68	8	12
Independent study, hours	132	192	184
Total course duration in hours / credit units	200/6	200/6	196/6

1. Course outline

Elements of mathematical logic, graph 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 graphs, 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.