

COMPUTER MODELING AND ANALYSIS OF ECONOMIC SYSTEMS

(course title)

COURSE SYLLABUS ABSTRACT of higher education institution speciality

1-25 01 07 Economics and management at the enterprise

	STUDY MODE	
	full-time	part-time (shortened program)
Year	4	5
Semester	7	9
Lectures, hours	36	6
Laboratory classes, hours	36	6
Classroom control work (semester, hours)		9 (2)
Contact hours	72	14
Independent study, hours	42	100
Exam, semester	6	8
Total course duration in hours / credit units	114 /3	

1. Course outline

The course is based on the basic methods of modern mathematical modeling technologies and covers the following topics: introduction, subject and objectives of the course; basic concepts of modeling socio-economic systems; simulation modeling; modeling of the inventory management system; computer modeling of relationships and dynamics of socio-economic processes; optimization of parameters of economic systems.

2. Course learning outcomes

Upon completion of the course, students will be expected to

- know: principles of system analysis in relation to the problems of solving problems of modeling and optimization of production processes and their control systems; methods of developing modeling of socio-economic systems; methods of setting and solving nonlinear single-criteria optimization problems; methods of accounting and mathematical formalization of uncertainties of various nature; methods of setting and solving multi-criteria optimization problems under uncertainty.

- be able to: to formulate and develop algorithms for solving economic and mathematical problems using the necessary numerical methods.

- possess: theoretical knowledge of the principles and methods of mathematical modeling of production processes; methods of development of mathematical models and research with their help of economic objects of industrial purpose.

3. Competencies

AK-3 possess research skills;

AK-7 have skills related to the use of technical devices, information management and computer work;

PK-5 Possess modern management decision-making techniques.

PK-12 Develop long-term, medium-term and current plans for the economic and social development of the organization (enterprise) and its structural divisions.

PK-27 Substantiate the system of indicators and methods for assessing the economic efficiency of the functioning of the organization (enterprise), individual activities and structural units.

4. Requirements and forms of midcourse evaluation and summative assessment

- oral (oral interview during laboratory classes; defense of laboratory work; interview during individual and group consultations)

- written (tests; control surveys, written reports on laboratory classes)

- oral-written (reports on classroom laboratory classes with their oral defense, passing the test).