

# 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	<b>4</b>	<b>5</b>
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).