

# **"Theory of Optimal Systems"**

(name of the discipline)

## **OUTLINE**

### **TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION**

specialty 7-06-0612-03 system information management

	<b>Form of higher education</b>	
	<b>Full-time</b>	<b>Correspondence</b>
<b>Course</b>	<b>1</b>	<b>1</b>
<b>Semester</b>	<b>1</b>	<b>1</b>
<b>Lectures, hours</b>	<b>24</b>	<b>6</b>
<b>Laboratory, hours</b>	<b>24</b>	<b>6</b>
<b>Exam, Semester</b>	<b>1</b>	<b>1</b>
<b>Classroom hours in the educational discipline</b>	<b>48</b>	<b>12</b>
<b>Independent work, hours</b>	<b>168</b>	<b>204</b>
<b>Total hours of the discipline / credit units</b>	<b>216/6</b>	

#### **1. Summary of the content of the discipline**

Getting profound knowledge in the methods of optimal control of dynamic systems, developing methods of calculation and construction of optimal control systems, including those based on modern computer technologies.

#### **2 Course objectives**

As a result of the study of the discipline, the student should

##### **know:**

- criteria of optimality of controlled systems;
- methods of finding optimal solutions;
- existing solutions for optimization of controlled systems;

##### **be able to:**

- determine the fields of applicability of optimal control systems;
- determine the main features of the methods of optimal control theory and statements of the optimal control systems problems
- analyze processes, occurring in optimal control systems;
- apply acquired knowledge to specific technical systems in terms of formulating and solving optimization problems;

##### **master:**

- skills of practical implementation of methods and algorithms of optimal control in the construction of optimal systems.

#### **3. Competencies to be formed**

PC-3 Analyze complex causal relationships in decision making in systems based on non-classical logics.

#### **4. Requirements and forms of current and intermediate attestation.**

Current - ZLR, intermediate - exam.