

# INTRODUCTION TO ELECTROMECHANICAL SYSTEMS

## COURSE SYLLABUS ABSTRACT

Specialty 6-05-0713-04 Automation of technological processes and productions

Profiling Automated electric drives

|                                               | STUDY MODE |           |                                     |
|-----------------------------------------------|------------|-----------|-------------------------------------|
|                                               | full-time  | part-time | part-time<br>(shortened<br>program) |
| Year                                          | 2          | 2         | 2                                   |
| Semester                                      | 4          | 3         | 3                                   |
| Lectures, hours                               | 34         | 8         | 8                                   |
| Auditor's work, semester                      | 4          | 3         | 3                                   |
| Credit, Semester                              | 34         | 8         | 8                                   |
| Contact hours                                 | 74         | 100       | 100                                 |
| Independent study, hours                      | 2          | 2         | 2                                   |
| Total course duration in hours / credit units | 108/3      |           |                                     |

### 1. Course outline

The main goal of the discipline is to form a general idea of the composition and main characteristics of modern electromechanical systems on the example of the main components of an automated electric drive (sources of electrical energy, power converters, electric motors, control system devices).

### 2. Course learning outcomes

Upon completion of the course, students will be expected to

#### know:

- the composition of subsystems of an automated electric drive;
- main characteristics of electromechanical systems;
- principles of energy conversion in electromechanical systems;
- basic terminology in the field of electric drive;
- the main classification of subsystems of an automated electric drive;
- the main criteria for evaluating the effectiveness of both the electromechanical system as a whole and its main subsystems;

#### be able to:

- perform an analysis of an electromechanical system using an example of an automated electric drive;
- evaluate the main indicators of the automated electric drive system;
- classify the elements of an automated electric drive;

#### to possess a skill:

- in application of basic terminology in the field of electric drive;
- in analyzing the main characteristics of individual subsystems of an automated electric drive and the electromechanical system as a whole.

### 3. Competencies

Know the main stages of development of electrical engineering, the state and ways of improving electric drive systems.

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

Current monitoring of academic performance is aimed at ensuring maximum efficiency of the educational process, increasing motivation to study; provides for assessment of the performance of control work. To assess the quality of learning material by students, an intermediate assessment is carried out in the form of credit in an academic discipline.