

SIMULATION IN ELECTRIC DRIVE

COURSE SYLLABUS ABSTRACT

1-53 01 05 Automated electric drives

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	2, 3, 4	2, 3, 4	2, 3, 4
Semester	4, 5, 6, 7	4, 5, 6, 7	4, 5, 6, 7
Lectures, hours	50	12	22
Laboratory classes, hours	160	40	36
Pass/fail, semester	4, 5, 6, 7	4, 5, 6, 7	4, 5, 6, 7
Contact hours	210	52	58
Independent study, hours	150	308	302
Total course duration in hours / credit units	360/9		

1. Course outline

The development and analysis of mathematical models that reflect the static and dynamic properties of electric drives, as well as methods and methods for modeling, researching and optimizing electric drive systems for industrial mechanisms using computer technology.

2. Course learning outcomes

Upon completion of the course, students will be expected to know:

- the basic methods for compiling a mathematical description and research of electric drive systems used in industrial and transport installations, as well as in scientific research;
- the features of modeling control systems and automated electric drives in general;
- the composition of hardware, software and linguistic support for the study of models of electric drive systems on a computer;

be able to:

- develop software models and conduct an experimental study of various modes of operation of automated electric drive systems with the help of a computer;

possess:

- the modern software used to solve the problems of analysis and synthesis of the dynamic properties of automatic control systems, as well as to solve problems of the study of various modes of operation of automated electric drive systems.

3. Competencies

SC-14. To know universal algorithmic programming languages, methods of mathematical description of automatic control systems (ACS), Matlab Simulink ACS modeling package, be able to apply modern programming technologies.

4. Requirements and forms of midcourse evaluation and summative assessment

To assess the quality of assimilation of educational material by students, including acquired competencies, current certification is carried out in the form of a test. The results of passing the tests are evaluated with the marks "passed" or "not passed".

Intermediate control of progress is aimed at ensuring maximum efficiency of the educational process, increasing motivation for learning; provides for the evaluation of the performance and protection of laboratory work.