MICROPROCESSORS IN AUTOMATED ELECTRIC DRIVES

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 (shortened program)
Year	4	5	4
Semester	7	9	7
Lectures, hours	32	8	8
Practical classes (seminars), hours	16	4	4
Laboratory classes, hours	32	8	8
Course project, semester	7	9	7
Exam, semester	7	9	7
Contact hours	80	20	20
Independent study, hours	64	124	124
Total course duration in hours / credit units	130/3		

1. Course outline

The purpose of teaching the discipline "Microprocessor tools in an automated electric drive" is to provide students with knowledge about the principles of building microprocessor control systems and their application in the control of electric drives and in the automation of industrial installations.

2. Course learning outcomes

Students who have completed this course should understand the purpose, operating principle, structure, and functional features of microprocessors and other elements of microprocessor systems, the classification of microprocessors, and the architectural features of industrially produced microprocessor systems. Students should be able to use microprocessor control system design methods, select the structure of a microprocessor control system and the means for its implementation, and synthesize digital controllers in microprocessor-based electric drive control systems. Students should have the skills to use microprocessor-based tools for the automation and control of electric drives, program and master microprocessor command systems, and design microcontroller structures and their application in electric drive control systems.

3. Competencies

Know programming languages and be able to program microprocessors and microcontrollers, be able to select and apply hardware microprocessor tools for automatic control systems of electric drives

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

Ongoing assessment of student knowledge is conducted during laboratory sessions, including pre-lab interviews and during the lab report defense. Ongoing assessment of student knowledge is conducted during practical sessions, based on the results of solving individual assessment problems. For each practical session topic, solving an individual problem is recommended. Interim assessment is performed through an exam.