

POWER CONVERSION EQUIPMENT

COURSE SYLLABUS ABSTRACT

1-53 01 05 Automated electric drives

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	3	3	2
Semester	5	6	4
Lectures, hours	34	4	8
Practical classes (seminars), hours	16	2	4
Laboratory classes, hours	50	6	6
Course paper, semester	5	6	5
Exam, semester	5	6	4
Contact hours	100	12	18
Independent study, hours	20	108	100
Total course duration in hours / credit units	120/3		

1. Course outline

The principles of construction of various types of semiconductor converters of electrical energy; electromagnetic processes in various semiconductor converters of electrical energy; methods for calculating parameters and selecting elements of power circuits of various types of semiconductor converters of electrical energy.

2. Course learning outcomes

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

- the principle of operation, main parameters and characteristics of the element base of power converter technology;
- the principles of construction, operation and design ratios of semiconductor converters of electrical energy;

be able to:

- conduct experimental studies of the characteristics of semiconductor electrical energy converters;
- carry out calculations and selection of power elements of semiconductor converters of electrical energy;
- carry out modeling of circuits of semiconductor converters of electrical energy using computer technology;

possess:

- the engineering methods for calculating semiconductor electrical energy converters.

3. Competencies

BPC-7. Own engineering methods for calculating semiconductor electrical energy converters and be able to apply them.

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 defending a term paper and an exam in an academic discipline. The results of the current certification are evaluated by marks in points on a ten-point scale.

Intermediate control of progress is aimed at ensuring maximum efficiency of the educational process, increasing motivation for learning; provides an assessment of performance and protection of laboratory works, control works and individual tasks.