

COMPUTER SCIENCE

COURSE SYLLABUS ABSTRACT

1-53 01 05 Automated electric drives

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	1	1	1
Semester	1, 2	1, 2	2
Lectures, hours	84	20	-
Practical classes (seminars), hours	-	-	2
Laboratory classes, hours	100	28	-
Course paper, semester	2	2	2
Auditor's work, semester	-	1, 2	
Exam, Semester	1, 2	1, 2	-
Contact hours	184	52	2
Independent study, hours	96	228	-
Total course duration in hours / credit units	280/6		

1. Course outline

The purpose of teaching the discipline is to teach students how to solve scientific and engineering problems on personal computers.

2. Course learning outcomes

As a result of mastering the academic discipline, the student must know: the device, characteristics and principles of operation of the hardware of personal computers, as well as the main peripheral equipment; purpose and functions of PC software for solving engineering problems; C/C++ programming system for Microsoft Windows.

The student must be able to: use modern software products (word and spreadsheet processors, engineering graphics, automation systems for mathematical calculations, database management systems); use a PC with peripheral equipment; navigate the work with the operating systems of a personal computer; apply numerical methods for solving engineering problems; work with computer networks and means of telecommunications; use the means and methods of information protection. The student must be proficient in: object-oriented programming technology in C++; basics of algorithmization; numerical methods of integration and differentiation; numerical methods for solving nonlinear equations; numerical methods for solving ordinary differential equations and partial differential equations; numerical methods of interpolation and approximation of functional dependencies; numerical methods of optimization and sorting. The student must have the following skills: practical work on a PC to perform engineering calculations, create electronic documents in the form of text, graphic files, as well as spreadsheets and databases; independent semantic formulation of applied problems; algorithmization and programming of engineering problems using the C/C++ language.

3. Competencies

The development of computer science should ensure the formation of competencies of SC-13.

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 term papers and exams in the academic discipline. The results of the current certification in the form of an exam or coursework defense 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 for the assessment of the performance of control work, as well as the assessment of the performance and protection of laboratory work.