Fundamentals of algorithmization and programming

(course title)

COURSE SYLLABUS ABSTRACT

1-53 01 02 - «Automated information processing systems»

(speciality code and name)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	**1**	**1-2**	**1**
Semester	1,2	1,2	1
Lectures, hours	68	16	
Laboratory classes, hours	52	24	
Practical classes (seminars), hours			2
Course paper, semester	2	3	1
Exam, semester	1,2	1,2	
In-class test (semester, hours)		1,2 (4 h.)	1 (2 h.)
Contact hours	120	40	
Independent study, hours	168	248	
Total course duration in hours / credit units	288/7,5		

1 The purpose of the discipline is the formation of students' basic knowledge of programming, instilling in students the skills of setting, preparing and solving problems at a high level, preparation as a fundamental basis for studying additional disciplines.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

– basics of algorithmization

– basic constructions of high-level languages;

– terminology;

– principles of software creation;

– software development technologies;

– basic data structures;

– basic concepts of object-oriented programming;

be able to:

- create algorithms;

– use the basic constructions of high-level languages;

– to implement algorithms in the form of programs in a high-level language;

possess:

– methods and tools for creating software;

– skills of independent development, debugging, testing and documentation of the program.

3. Competencies

Codes of generated competencies	Names of competencies being formed
АК-1	apply basic scientific and theoretical knowledge to solve theoretical and practical problems aim
АК-2	possess system and comparative analysis
АК-3	possess research skills
АК-4	be able to work independently
АК-5	generate new ideas (have creativity)
АК-6	possess an interdisciplinary approach to solving problems
АК-7	have skills related to the use of technical devices, information management and computer work
АК-9	be able to study, improve their skills throughout their lives
АК-10	to use the basic laws of natural science disciplines in professional activity
АК-11	possess the basic methods, methods and means of obtaining, storing, processing information using computer technology

АК-14	organize your work on a scientific basis, independently evaluate the results of your activities
СЛК-2	have the ability to social interaction
СЛК-3	have the ability to interpersonal communication
СЛК-6	be able to work in a team
ПК-29	prepare reports, materials for presentations
ПК-30	use global information resources

4. Requirements and forms of midcourse evaluation and summative assessment

To assess the level of knowledge of students, the following diagnostic tools are used:

- oral and written questioning during laboratory classes;
- preparation of reports on laboratory work with their oral defense;
- carrying out control works (test tasks) on separate topics;
- Interview during individual and group consultations;
- defense of term paper;
- exam.