

Process design automation

(course title)

COURSE SYLLABUS ABSTRACT

1-40 05 01 Information systems and technologies (majors in)

(speciality code and name)

1-40 05 01-01 Information systems and technologies (in designing and producing)

(specialisation code and name)

	STUDY MODE	
	full-time	part-time (shortened program)
Year	4	2
Semester	7, 8	3, 4
Lectures, hours	58	6
Laboratory classes, hours	52	8
Pass/fail, semester	7, 8	3, 4
Contact hours	110	14
Independent study, hours	144	240
Total course duration in hours / credit units	254/7,5	

1. Course outline

Classification of technological processes and production systems. Interfaces and local information networks in control systems. Motion control systems. Numerical software control systems. Motion control systems software. Process operational dispatch control systems.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: main types of technological tasks, methods of their formalization and solution; methodology of automatic design of process preparation facilities; ways to present technological knowledge and data;

be able to: develop software and methodological means of technological design; develop software and methodological tools for designing tooling;

possess: skills of working with process design systems; skills in working with design automation tools.

3. Competencies

AK-1 – Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems; AK-2 – Own system and comparative analysis; AK-3 – Own research skills; AK-4 – Be able to work independently; AK-5 – Be able to generate new ideas (have creativity); AK-6 – Have a multidisciplinary approach to problem solving; AK-7 – Have skills related to the use of technical devices, information management and computer work; AK-8 – Have oral and written communication skills; AK-9 – Be able to study, improve your qualifications throughout your life; AK-10 – Use the basic laws of natural sciences in your professional activity; AK-11 – Own the main methods, methods and means of obtaining, storing, processing information using computer equipment; AK-14 – Organize your work on a scientific basis, independently evaluate the results of your work; SLK-6 – Be able to work in a team; PK-2 Own the principles and basic skills, techniques, methods of setting up, adapting and maintaining software tools; PK-3 Analyze and justify the selection of technical, software and systems for automated support of professional activities; PK-4 Develop software tools and systems for providing automated support for solutions to professional tasks; PK-10 Develop technical and design documentation for the created software tools for solutions to professional problems; PK-11 Develop functional, information and other models of formalized representation of professional processes; PK-21 Analyze and evaluate the collected data; PK-24 Use Global Information Resources; PK-31 – Design new and modernize technological processes that ensure the required technical and economic indicators.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: laboratory protection, test.