CNC machining technology
(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	3	3
Semester	6	6
Lectures, hours	34	6
Practical classes (seminars), hours	16	4
Exam, semester	6	6
Contact hours	50	10
Independent study, hours	58	98
Total course duration in hours / credit units	108/3	

1. Course outline
Selection of blanks and methods of their manufacture. Base workpieces during processing on machines. Development of technological processes for manufacturing parts of technical systems. Shaft manufacturing technology. The technology of manufacturing cylindrical gears. Technological processes of workpieces processing on turning, drilling and boring group machines. Technological processes of workpieces processing using milling, grinding, tooth cutting machines. Electrophysical and electrochemical methods of surface treatment.

2. Course learning outcomes
Upon completion of the course, students will be expected to
know**:** theoretical foundations, methods of modeling and experimental research of material processing processes; physical and chemical phenomena occurring in the interaction zone of the tool and the workpiece being processed; mechanisms for forming quality of treated surfaces; Methods for optimizing processing parameters methods of analysis, design and control of various processing processes; methods of increasing productivity, accuracy, quality parameters and reliability of technological equipment, cutting tools, intensification of processing processes;
be able to**:** Simulate process equipment Optimize processing parameters design processing processes with selection of equipment and tool systems; design structures, perform calculations, optimize parameters of tool systems and process equipment.
possess**:** basic design of processing processes; processing process control methods.

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-5 – Be capable of criticism and self-criticism; SLK-6 – Be able to work in a team; PK-3 – Analyze and justify the selection of technical, software and systems for automated support of professional activities; 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: protection of practical classes, exam.