Computer Numerical Control Systems for Production Equipment
(course title)

COURSE SYLLABUS ABSTRACT

6-05-0714-02 – Mechanical engineering technology, metal-cutting machines and tools
(speciality code and name)

Profiling Manufacturing engineering
Machine-building process equipment

6-05-0713-04 – Automation of technological processes and production
(speciality code and name

Automation of technological processes and productions in mechanical engineering

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	4	4	4
Semester	7	7	7
Lectures, hours	34	8	8
Laboratory classes, hours	16	4	4
Pass/fail, semester	7	7	7
Contact hours	50	12	12
Independent study, hours	58	96	96
Total course duration in hours / credit units	108/3		

1. Course outline

Programming of HAAS milling, lathes. Programming HAAS CNC machines using macros.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know**:**

– features of CNC stations;
– classification, generalized structure and principle of operation of CNC systems;
– principles of CNC stations programming;

be able to**:**

– select a cutting tool for CNC machines;
– calculate cutting modes on CNC machines;
– develop a part machining plan for CNC machines;
– snap the tool;
– develop programs for CNC machines.

to possess a skill:

– basic programming of CNC stations.

3. Competencies

6-05-0714-02 MET Be able to design individual units and metal cutting machines as a whole, elements of hydraulic and pneumatic drives, as well as hydraulic and pneumatic automatics, adaptations to the specified machines of various types, use modern equipment control systems.

6-05-0714-02 MPE Be able to design machining processes on machines by selecting universal machines or forming a task to create a special machine, selecting or designing cutting tools, assigning a machining mode, lubricating and cooling means and other cutting conditions.

6-05-0713-04 – Know the principles of construction and operation of networks, master the methodology for organizing computer networks of industrial automation.

Know the principles of building a process equipment control system, the design and technical characteristics of modern CNC systems, master the methods of developing systems of various levels.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: laboratory protection, test.