

Cutting tool

(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

Equipment and technologies for highly efficient material processing processes

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 (6-05-0714-02)	part-time (shortened program) (6-05-0714-02)
Year	3	3	2
Semester	5	5	3
Lectures, hours	50	10	10
Laboratory classes, hours	16	4	4
Course project, semester	5	5	3
Exam, semester	5	5	3
Contact hours	66	14	14
Independent study, hours	42	94	94
Total course duration in hours / credit units	108/3		

1. Course outline

Incisors. Rotating rod tools for hole machining. Broaching and firmware. Cutters. Threaded tools. Tooth cutting instruments. Abrasive and diamond tools. Selection of cutting material and method of cutting elements fixation. Design of cutting tools. Basics of operation of cutting tools.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: requirements for cutting tools taking into account the specified quality, accuracy and accuracy of processing; features of structures of the main types of cutting tools; requirements for operation of cutting tools;

be able to: select the materials and design of the cutting tool based on the processing conditions and the requirements for its results; evaluate the characteristics of the cutting tool during its operation; design a cutting tool using CAD.

have a skill: scientific basis of design of cutting tools with specified characteristics; methods of control of structural and geometric parameters of cutting tools; methods of scientific and technical creativity and patent research.

3. Competencies

6-05-0714-02: – To design various cutting tools using knowledge of power and thermal processes during cutting.

6-05-0713-04: – Understand power and heat processes during cutting, be able to use them in the design of various cutting tools.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: laboratory protection, academic year project, exam.