Cutting tool
(course title)

COURSE SYLLABUS ABSTRACT

1-36 01 01 – Manufacturing engineering

1-53 01 01 – Automation of technological processes and production (majors in)

(speciality code and name)

1-53 01 01-01 – Automation of technological processes and production (mechanical engineering and instrument making)

(specialisation code and name)

	STUDY MODE		
	full-time	part-time (1-36 01 01)	part-time (shortened program) (1-36 01 01)
Year	3	3, 4	3
Semester	5, 6	6, 7	6
Lectures, hours	50	8	6
Laboratory classes, hours	16	4	4
Practical classes (seminars), hours	16	2	4
Course project, semester	6	7	6
In-class test (semester, hours)		6 (2 часа)	
Exam, semester	5	6	6
Contact hours	82	16	14
Independent study, hours	48	114	116
Total course duration in hours / credit units	130/3		

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.

possess***:*** 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

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BPK-9.1 – Understand power and heat processes during cutting, be able to use them in the design of various cutting tools.

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SK-6.1 – 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: protection of practical classes, laboratory protection, academic year project, exam.