

Metal Cutting Machines

(course title)

COURSE SYLLABUS ABSTRACT

6-05-0714-02 – Mechanical engineering technology, metal-cutting machines and tools

(speciality code and name)

Manufacturing engineering

Machine-building process equipment

Equipment and technologies for highly efficient material processing processes

(concentration)

6-05-0713-04 – Automation of technological processes and production

(speciality code and name)

Automation of technological processes and productions in mechanical engineering

(concentration)

	STUDY MODE		
	full-time	part-time (6-05-0714-02)	part-time (shortened program) (6-05-0714-02)
Year	3, 4	3, 4	3, 4
Semester	6, 7	6, 7	6, 7
Lectures, hours	68	12	12
Laboratory classes, hours	34	8	8
Course paper, semester	7	7	7
Exam, semester	6	6	6
Contact hours	102	16	16
Independent study, hours	42	128	128
Total course duration in hours / credit units	144/4		

1. Course outline

Main components and mechanisms of machine tools. Machine control systems. Turning, drilling, boring, milling, toothing, threading, drawing, planing, running machines.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: basic design principles for metal cutting machines; design features of machines for different types of machining; principles of construction of automatic lines and flexible production systems; technological equipment development trends;

be able to: design a machine that provides the necessary characteristics of the workpiece (surface); evaluate the technical and economic indicators of the metal-cutting machine; develop the terms of reference for the metal cutting machine control system.

to possess a skill: methods for designing kinematic schemes, general arrangement of individual assemblies of metal cutting machines taking into account their purpose and the adopted control system; skills in assessing the performance of a metal cutting machine in production conditions; methods of predicting the reliability of metal-cutting machines, development of technical specifications for their operation.

3. Competencies

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Master the basics of research, search, analyze and synthesize information.

Be capable of self-development and improvement in professional activity.

To use knowledge about the basic principles of designing metal-cutting machines, methods of their use in the design of various types of machines.

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Know the basic principles of designing metal cutting machines, methods of their use in the design of different types of machines.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: laboratory protection, protection of heading work, exam.