

Cutting machines

(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, 4	4	3
Semester	6, 7	8	6
Lectures, hours	68	8	6
Laboratory classes, hours	34	4	8
Course paper, semester	7	8	6
Exam, semester	6	8	6
Contact hours	102	12	14
Independent study, hours	38	128	126
Total course duration in hours / credit units	140/3		

1. Course outline

Main components and mechanisms of machine tools. Machine control systems. Turning, drilling, boring, milling, tothing, 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.

possess: 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

1-36 01 01

BKP-9.2 – Know the basic principles of designing metal cutting machines, methods of their use in the design of different types of machines.

1-53 01 01

SK-6.2 – 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.