Material processing theory
(course title)

COURSE SYLLABUS ABSTRACT

1-36 01 04 – Equipment and technologies for highly efficient material processing processes
(speciality code and name)

	STUDY MODE
	full-time
Year	3
Semester	5
Lectures, hours	50
Laboratory classes, hours	16
Exam, semester	5
Contact hours	66
Independent study, hours	42
Total course duration in hours / credit units	108/3

1. Course outline

Types of cutting. Chip cutting process. Features of the process of plastic deformation of metal during cutting. General concepts of forces acting on the working surfaces of a cutting blade of a tool. Drilling. Milling. Stretching. Abrasive treatment.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know**:** basic processes during metal cutting; ways of intensifying and controlling the cutting process; features of various machining processes (turning, milling, grinding, etc.).

be able to**:** use cutting process regularities to calculate the cutting tool; assess the serviceability of the cutting tool; Optimize the cutting process.

possess**:** methodology of calculation of cutting modes for various processes of machine parts machining; skills of evaluation of the cutting tool operability under the specified part processing conditions, optimization of these conditions; methods of increasing intensification and regulation of cutting processes.

3. Competencies

SK-3 – Know the main processes of material processing and machine assembly, methods of calculation and selection of the processing tool.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: laboratory protection, exam.