

Tooling equipment

(course title)

COURSE SYLLABUS ABSTRACT

1-36 01 03 – Machine-building process equipment

(speciality code and name)

	STUDY MODE
	full-time
Year	4
Semester	7
Lectures, hours	16
Laboratory classes, hours	16
Pass/fail, semester	7
Contact hours	32
Independent study, hours	76
Total course duration in hours / credit units	108/3

1. Course outline

Main motion drives. Formula of the drive structure. Connecting group transmissions. Feed drives. Kinematic calculation of the drive. Spindle assemblies. Stepless drives. Load-bearing system of the machine. Traction devices. Machine control systems.

2. Course learning outcomes

Upon completion of the course, students will be expected to know: theoretical foundations, methods of modeling and experimental study of material processing processes, physicochemical phenomena occurring in the interaction zone of the tool and the workpiece being processed; geometric, kinematic, dynamic, tribological and other features of widely used methods of processing instrumental materials, methods of shaping and mechanisms for forming the quality of treated surfaces, methods of optimization, design and control of various processing processes; methods for improving productivity, accuracy, quality parameters and reliability of process equipment in the production of cutting tools;

be able to: model process equipment, processes of processing and assembly of its parts; Optimize processing and assembly parameters design processing and assembly processes with selection of equipment and tool systems; design structures, perform calculations, optimize parameters of tool systems and process equipment; perform diagnostics of surface shaping processes, process equipment, tooling and tool systems;

possess: process equipment design basis; methods of control of processing processes; methods of conducting patent research, protecting intelligence-toile property, a scientific and technical approach to solving engineering problems, creating and introducing innovations.

3. Competencies

SK-6 – Be able to design machining processes on machines by selecting universal machines or forming a task to create a special machine, selecting or designing cutting tools, assigning a machining mode, lubricating and cooling means and other cutting conditions.

4. Requirements and forms of midcourse evaluation and summative assessment

– verbal-written: laboratory protection, test.