

## Machine tool technology

(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, 8
Lectures, hours	34
Practical classes (seminars), hours	16
Laboratory classes, hours	16
Course project, semester	8
Pass/fail, semester	7
Contact hours	66
Independent study, hours	42
Total course duration in hours / credit units	108/3

#### 1. Course outline

Assembly of precision and heavy machines. Manufacture of shafts, spindles, sleeves, screw gears, cylindrical, bevel gears. Fabrication of worm gears. Shaping of toothed surfaces. Fabrication of machine body parts.

#### 2. Course learning outcomes

Upon completion of the course, students will be expected to know: theoretical foundations, modeling methods and experimental study of material processing processes, including combined processing processes with the application of various physical and chemical effects; physical and chemical phenomena occurring in the interaction zone of the tool and the workpiece being processed; geometric, kinematic, dynamic, methods of increasing productivity, accuracy, quality parameters and reliability of process equipment, cutting tools.

be able to: model process equipment, processes of processing and assembly of its parts; Optimize processing and assembly parameters to improve performance, quality and cost-effectiveness, reduce power consumption and reduce environmental stress design processing and assembly processes; design structures, perform calculations, optimize parameters of tool systems and process equipment; solve the problems of rational operation of technological equipment, instrumentation systems and tooling;

possess: methods of control of processing and assembly processes; methods of conducting patent research, protection of intellectual property, scientific and technical approach to solving engineering task technological equipment, instrumental systems and tooling.

#### 3. Competencies

SK-8 – Be able to design the technological processes of processing specific parts of metal cutting machines, their assembly, quality control and running-in.

#### 4. Requirements and forms of midcourse evaluation and summative assessment.

– verbal-written: protection of practical classes, laboratory protection, academic year project, differentiated test.