FUNDAMENTALS OF MECHANICAL ENGINEERING TECHNOLOGY

(course title)

COURSE SYLLABUS ABSTRACT

Speciality 6-05-0714-02 – «Mechanical engineering technology, metal cutting machines and tools»
Concentration «Technology of mechanical engineering»
«Equipment and technologies of highly efficient material processing processes»
«Technological equipment of machine-building production»

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	3	3	2,3
Semester	5, 6	6	4,5
Lectures, hours	50	10	10
Practical classes (seminars), hours	16	4	4
Laboratory classes, hours	16	4	4
Course paper, semester	6	6	5
Exam, semester	5	6	4
Contact hours	82	18	18
Independent study, hours	62	126	126
Total course duration in hours / credit units	144/4		

1. Course outline

The purpose of studying the discipline is to acquire knowledge of the theoretical foundations of machine building technology, as the science of creating machines of the required quality in the required quantity with minimal expenditure of various resources.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

the basic provisions and concepts of mechanical engineering technology; theories of basing and dimensional chains; patterns of occurrence of processing errors, ways and methods of their elimination and reduction; patterns that determine ensuring the lowest cost and maximum productivity of technological processes; the influence of various factors on the quality characteristics of the surfaces of parts and their operational properties; principles designing rational technological processes for various production conditions.

Having studied the discipline, the student should

be able to:

determine the type of production depending on the specified conditions; perform calculations of the main types of processing errors; evaluate the accuracy of operations based on the total processing error; make the right choice of technological bases; perform technological calculations of allowances, cutting modes and technical rationing; draw up technological routes for manufacturing machine parts; draw up technological documentation; evaluate the accuracy and stability of the current technological process.

A student who has studied the discipline must

to possess a skill:

possess basic concepts and terminology in the field of mechanical engineering technology; use of basic technical literature for the rational selection of workpieces, metal-cutting equipment, cutting and measuring tools, cutting modes; master the methods of designing technological processes for processing parts and assembling machines for various production conditions; necessary for independent solution of tasks in the field of process engineering, both in the course and diploma projects, as well as in his future professional activities.

3. Competencies

Master the basics of research, search, analyze and synthesize information. Be able to develop and improve in professional activities. Use theoretical knowledge about the sources of errors in machining, master methods for calculating and reducing machining errors, designing technological processes for machining parts and assembling machines.

4. Requirements and forms of midcourse evaluation and summative assessment

The current and intermediate attestation is conducted in written and oral-written form through the protection of laboratory work, practical work, control work, term work; passing the exam.