

MACHINE PARTS

COURSE SYLLABUS ABSTRACT

Specialty 6-05-0714-02 «Mechanical engineering technology, metal-cutting machines and tools»

Profiling «Mechanical Engineering Technology», «Technological Equipment for Mechanical Engineering Production», «Equipment and Technologies for Highly Efficient Material Processing Processes»

Specialty 6-05-0722-05 «Production of products based on three-dimensional technologies»

	full-time	part-time	part-time (shortened program)	full-time
	6-05-0714-02-1			6-05-0722-05
Year	3	3, 4	2, 3	3
Semester	5,6	6, 7	4, 5	5,6
Lectures, hours	50	10	10	50
Practical classes (seminars), hours	16	4	4	16
Laboratory classes, hours	16	4	4	16
Course project, semester	6	7	5	6
Exam, semester	5	6	4	5
Contact hours	82	18	18	82
Independent study, hours	62	126	126	98
Total course duration in hours / credit units	144/4			180/5

1 Course outline

The purpose of teaching the academic discipline “Machine Parts” is to develop in students engineering knowledge and skills in analysis (calculation) and design of parts, assemblies and drives for general mechanical engineering purposes, providing a theoretical and practical basis for the design training of students.

2 Course learning outcomes

Upon completion of the course, students will be expected to **know**: designs, types, materials and methods of manufacturing general-purpose parts; interaction of parts and physical processes accompanying their operation, taking into account resistance to operational factors, types and nature of destruction of parts and determination of criteria for their performance and calculation; engineering methods for calculating machine parts and assemblies that ensure their required reliability; methods of automated design and construction using computer graphics; **be able to**: perform engineering calculations of machine parts and assemblies that ensure their required reliability and durability; design parts, components and drives for general machine-building purposes; carry out design development of parts, assemblies and drives using design standards, standard designs, standards and other regulatory materials; **to possess a skill**: methods of substantiating the designs of components and machine parts; methods of engineering calculation of machine parts and assemblies; information on standard designs and materials of machine parts and assemblies.

3 Competencies

For specialty 6-05-0714-02: «Know the basics of research activities, search, analyze and synthesize information»; «Be capable of self-development and improvement in professional activities»; «Know the requirements for typical machine parts, be able to design these parts and assemblies and perform their calculations». For specialty 6-05-0722-05: «Know the basics of research activities, search, analyze and synthesize information»; «Be capable of self-development and improvement in professional activities»; «Take initiative and adapt to changes in professional activities»; «Know the basics of calculation and rational design of machines and structural elements to ensure a high level of their reliability and performance».

4 Requirements and forms of midcourse evaluation and summative assessment

Current certification is carried out in the form of test assignments in written form, defense of individual assignments and laboratory work in oral form. Interim certification is carried out in the form of a written exam. The exam card includes two theoretical questions and one task. The course project is defended orally.