

APPLIED MECHANICS

(course title)

COURSE SYLLABUS ABSTRACT

Specialty 6-05-0713-04 "Automation of technological processes and production"

Concentration Automation of technological processes and production in mechanical engineering

Concentration Automated electric drives

Specialty 6-05-0714-03 "Engineering and technical design and production of materials and products from them"

Concentration Welding Equipment and Technologies

Profiling	Automation of technological processes and production in mechanical engineering	Automated electric drives			Welding Equipment and Technologies		
Study mode	Full-time	Full-time	Part-time	Part-time (shortened program)	Full-time	Part-time	Part-time (shortened program)
Year	3	3	3	2	3	3	3
Semester	5, 6	5	5	3, 4	5, 6	5, 6	5, 6
Lectures, hours	50	50	10	10	50	10	10
Practical classes (seminars), hours	16	16	4	4	16	4	4
Laboratory classes, hours	16	16	4	4	16	4	4
Course project, semester	6	5	5	4	6	6	6
Exam, semester	5	5	5	3	5	5	5
Contact hours	82	82	18	18	82	18	18
Independent study, hours	62	98	126	126	62	126	126
Total course duration in hours / credit units	144/4	180/5			144/4		

1. Course outline

The objectives of the discipline are: to master the methods of engineering calculations of the main types of general-purpose parts, to teach the basic methods of designing units and parts for general machine-building purposes.

2. Course learning outcomes

Upon completion of the course, students will be expected to know:

- structures, type, materials and methods of manufacturing general-purpose machine parts;
- interaction of parts and physical processes accompanying their work, taking into account the resistance to the effect of operational factors, types and nature of parts distribution and determining the criteria for their performance and calculation;
- engineering methods of calculating parts and assemblies of machines that ensure their required reliability;
- computer-aided design and construction methods using machine graphics;
- be able to:
 - perform engineering calculations of parts and assemblies of general machine building purpose, ensuring their required reliability and durability;
 - design of parts and assemblies of general machine building purpose;
 - perform design development of parts, assemblies of general machine-building purpose using design standards, standard designs, standards and other regulatory materials;
- to possess a skill:
 - methods of substantiation of structures of assemblies and parts of general machine-building purpose.

3. Competencies

Develop and use graphic and technical documentation, solve engineering problems based on the laws of mechanics

Master the basics of research, search, analysis and synthesis of information.

Be capable of self-development and improvement of professional activities.

Take the initiative and adapt to changes in professional activities.

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

- oral and written: protection of laboratory works, course design;
- written: exam.