

ACCURACY SPECIFICATIONS AND TECHNICAL MEASUREMENTS

(name of discipline)

COURSE SYLLABUS ABSTRACT

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

Concentration Mechanical engineering technology, Equipment and technologies for highly efficient material processing processes, Technological equipment for mechanical engineering production

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

Concentration Automation of technological processes and production in mechanical engineering

Specialty 6-05-0715-03 – Cars, tractors, mobile and technological complexes

Concentration Computer engineering in lifting and transport mechanical engineering, Computer engineering in construction and road mechanical engineering, Computer engineering in automotive industry

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

	STUDY MODE				
	full-time			part-time	part-time (shortened program)
	6-05-0714-02, 6-05-0713-04	6-05-0722-05	6-05-0715-03	6-05-0714-02	
Year	3	3	3	3	3
Semester	5	5	5	5	5
Lectures, hours	34	34	32	8	6
Laboratory classes, hours	16	16	16	4	4
Practical classes (seminars), hours	16	16	16	4	4
Course paper, semester	5	-	5	5	6
Exam, semester	5	5	5	5	5
Contact hours	66	66	64	16	14
Independent study, hours	42	42	44	92	94
Total course duration in hours / credit units	108/3	108/3	108/3	108/3	108/3

1 Course outline

The discipline "Accuracy Specifications and Technical Measurements" contains general concepts of methods of ensuring the interchangeability of the product at the stages of its life cycle, the basis for the selection of requirements for the accuracy of parameters, their control and the essence of standardization of these requirements.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- methods of ensuring interchangeability at the stages of the product life cycle;
- methods of rationing the accuracy of parameters;
- basic principles of building systems of tolerances and fits, basic standards - basic norms of interchangeability, covering systems of tolerances and fits for typical types of connections of machine parts and devices;
- theoretical foundations of measurement control of parameters;

be able to:

- use the standards of basic standards of interchangeability;
- mark accuracy requirements on drawings, read and decipher symbols;
- carry out measuring control of parameters with calibrators and basic universal measuring instruments;
- present the results of measurements with the indication of errors and uncertainties;

to possess a skill:

- application of the basic principles of interchangeability, standardization of accuracy, standardization of tolerances and fits for various machine parts and production conditions;
- selection of fits and their placement on drawings;
- use of the basic concepts of technical regulatory legal acts that ensure manufacturing accuracy and product quality, technical and information compatibility, interchangeability in accordance with the level of development of science, engineering and technology,
- use of appropriate measuring instruments and devices for monitoring the geometric parameters of parts.

3 Competencies

Mastering this training discipline should ensure the formation of the following competence: For specialty 6-05-0714-02 Master the basics of research activities, search for, analyze and synthesize information. Be capable of self-development and improvement in professional activities. Apply the basic principles of interchangeability, standardization and accuracy, standardization of tolerances and fits, master the methods of standardizing accuracy for various machine parts and production conditions. For 6-05-0713-04 Know the basic principles of interchangeability, standardization and accuracy, standardization of tolerances and fits, master the methods of standardizing accuracy for various machine parts and production conditions. For 6-05-0715-03 Use the basic concepts of technical regulatory legal acts that ensure manufacturing accuracy and product quality, technical and information compatibility, interchangeability in accordance with the level of development of science, engineering and technology, use the appropriate measuring instruments and devices. For 6-05-0722-05 To master the methodology of calculation and assignment of tolerances and fits for products made of polymer and composite materials, as well as parts of molding equipment.

4 Requirements and forms of midcourse evaluation and summative assessment

Current and interim certification is conducted in written and oral-written form through tests, reports on laboratory works with their oral defense, control works, written exams.