METROLOGY, STANDARDIZATION AND CONFORMITY ASSESSMENT

(name of discipline)

COURSE SYLLABUS ABSTRACT

6-05-0714-03 – Engineering design and production of materials and products made from them

(speciality code and name)

Equipment and technology for welding production

(concentration)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	4	5	4
Semester	8	9	7
Lectures, hours	36	8	6
Practical classes (seminars), hours	12	4	4
Pass/fail, semester	8	9	7
Contact hours	48	12	10
Independent study, hours	52	88	90
Total course duration in hours / credit units	100/3	100/3	100/3

1 Course outline

The discipline «Metrology, Standardization and Conformity Assessment» contains general ideas about methods for ensuring the interchangeability of a product at the stages of its life cycle, the principles of selecting requirements for standardizing the accuracy of parameters, their control, standardization, and rules for conducting conformity assessment.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know:

- methods for ensuring interchangeability at various stages of the product life cycle;
- methods for standardizing parameter accuracy;
- fundamental principles for constructing tolerance and fit systems, basic standards – basic interchangeability standards covering tolerance and fit systems for typical types of connections of machine parts and devices;
- fundamental principles of metrological support for production, technical regulation, standardization, and product conformity assessment;

be able to:

- use the standards of the main interchangeability norms;
- indicate the accuracy requirements of parameters on drawings, read and decipher the symbols;
- perform measurement control of parameters using gauges and basic universal measuring instruments;
- apply the basic provisions of regulatory documents when conducting conformity assessments;
- select and use measuring instruments, perform measurement experiments, and evaluate the accuracy of measurement results.

to possess a skill:

- use of normative and technical documentation and standards relevant to the task at hand;
- application of the fundamental principles of interchangeability, precision regulation, and standardization of tolerances and fits for various machine parts and production conditions;
- use of the fundamental concepts of technical regulations that ensure manufacturing precision and product quality, technical and information compatibility, and interchangeability in accordance with the level of development of science, engineering, and technology.

3 Competencies

Mastering this training discipline should ensure the formation of the following competence: apply methods for standardizing the accuracy of parameters, the basic principles of constructing tolerance and fit systems, basic standards of the main interchangeability norms covering tolerance and fit systems for typical types of connections of machine parts and mechanisms

4 Requirements and forms of midcourse evaluation and summative assessment

Current and interim assessments are carried out in form through tests, assignments, and assessments.