

DEFECTS IN MATERIALS AND PRODUCTS

COURSE SYLLABUS ABSTRACT

Specialty: 6-05-0716-03 Information and measuring instruments and systems

Concentration: Information systems and technologies of non-destructive testing and diagnostics

	STUDY MODE	
	full-time	Part-time (shortened program)
Year	3	3
Semester	5	5
Lectures, hours	16	4
Practical classes (seminars), hours	16	4
Pass/fail, semester	5	5
Contact hours	32	8
Independent study, hours	76	100
Total course duration in hours / credit units	108/3	

1. Course outline. The academic discipline is aimed at familiarizing students with defects in materials and products, the reasons for their formation, physical phenomena occurring during welding, casting, heat treatment, control methods, as well as the instrumentation base, methodological and technological issues of determining defects.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: types and kinds of defects of various materials and products; operating conditions of various products and structures; theoretical foundations for the occurrence of various defects; the influence of defects on the reliability of products and structures;

be able to: determine the type and kind of defect; predict the possibility of defects occurring during various technological processes and operating conditions of products; classify defects in materials and products;

to possess a skill: application of methods for assessing the impact of defects on the performance properties of products and structures; application of methods for detecting various defects; assessment of the possibility of eliminating defects.

3. Competencies. Be able to identify types and kinds of defects and predict the possibility of their occurrence during the operation of products.

4. Requirements and forms of midcourse evaluation and summative assessment. Pass/fail (written form). To be admitted to the pass/fail, the student, in accordance with the curriculum, is required to complete and defend practical classes, as well as intermediate tests.