ACOUSTIC CONTROL DEVICES AND METHODS
ANNOTATION TO THE EDUCATIONAL INSTITUTION'S CURRICULUM

Specialty 6-05-0716-03 Information measuring devices and systems

Specialization Information technologies and non-destructive testing and diagnostic systems

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	**3**		**3**
Semester	6		6
Lectures, hours	50		10
Laboratory classes, hours	34		6
Practical classes, hours	16		4
Course project, semester	6		6
Exam, semester	6		6
Contact hours	100		20
Guided independent study, hours, type/ semestr	80		160
Total academic hours / credits	180/7		

1 Course outline

The main provisions of acoustics, the physical principles of basic control methods using a certain mathematical apparatus, as well as familiarization with the instrument base, methodological and technological issues of using acoustic methods for flaw detection, measurement of geometric parameters, control of physical and mechanical properties of materials and products.

2 Course learning outcomes

As a result of mastering the discipline, the student should know: the basic physical laws of radiation, propagation and reception of acoustic waves, characteristics and features of acoustic transducers, basic acoustic methods of control and measurement, principles of operation of devices and systems, technology of acoustic control of typical objects; be able to: develop monitoring equipment, develop technology for acoustic control of materials and products, select and apply acoustic methods and monitoring devices for a specific facility; have the skill to implement modern technologies for ultrasonic inspection of materials, products, welded joints, and quality assessment of controlled objects.

3 Emerging competencies

Mastering this academic discipline should ensure the formation of the following competencies: be able to select and apply acoustic methods and monitoring devices for a specific object.

4 Requirements and forms of midcourse evaluation and summative assessment

The general assessment of students' knowledge, skills and abilities consists in analyzing their work while performing various types of classes and elements of the current and intermediate attestation. Thus, during a brief survey of students before the start of the lecture, their knowledge in understanding the previously presented material is evaluated based on the results of the previous lecture. When students perform laboratory work, it is assessed how profoundly they have mastered the practical skills of implementing control of real objects. When studying the discipline, the following methods are used: current certification in the form of control papers (written), laboratory and practical work with oral defense, course design with defense; intermediate certification in the form of a written and oral exam.