DEVICES AND METHODS OF ACOUSTIC CONTROL

(name of the discipline)

ANNOTATION TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Speciality1-54 01 02 - Methods and instruments for quality control and diagnostics of the state of objects

Specialization1-54 01 02 02 Non-destructive testing of materials and products

	Form of higher education		
	Full-time (daytime)	Correspondence	Correspondence abbreviated
Well	3		
Semester	6		
Lectures, hours	68		
Laboratory classes, hours	34		
Course project, semester	6		
Exam, semester	6		
Classroom hours per academic discipline	102		
Independent work, hours	114		
Total hours per academic discipline / credits	216/6		
Practical (seminar) classes for the course*project*by academic discipline, hours	16		
Total hours for the course project in the academic discipline / credit units	72/2		

1. Brief content of the discipline

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

2. Learning Outcomes

As a result of mastering the academic discipline, the student must

know: the basic physical laws of radiation, propagation and reception of acoustic waves, the characteristics and features of acoustic transducers, the main acoustic methods of control and measurement, ways to improve the metrological characteristics of methods and means of control, the principles of operation and the structure of universal and specialized instruments and systems, the technology of acoustic control of typical objects;

be able to: develop equipment for control, develop technology for acoustic control of materials and products and metrological support of technical means, select and apply acoustic methods and control devices for a specific object, set up equipment and control materials and products, draw up flow charts for control;

possess: skills in the implementation of modern technologies for ultrasonic testing of materials, products, welded joints, skills in assessing the quality of controlled objects.

3. Formed competencies

The development of this academic discipline should ensure the formation of the following competencies: SK-15 - Be able to choose and apply acoustic methods and control devices for a particular object.

4. Requirements and forms of current and intermediate certification: tests, laboratory work, course project and exam (oral and written form). In order to be admitted to the exam, the student, in accordance with the curriculum, must complete four tests, defend laboratory work, complete and defend a course project.