

# DEVICES AND METHODS OF ELECTROMAGNETIC CONTROL

## ANNOTATION TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

**Speciality**1-54 01 02 - Methods and instruments for quality control and diagnostics of the state of objects

**Specialization**1-54 01 02 02 - Non-destructive testing of materials and products.

	Form of higher education
	Full-time (daytime)
Well	4
Semester	7
Lectures, hours	64
Practical (seminar) lessons, watch	16
Laboratory classes, hours	32
Course project, semester	7
Exam, semester	7
Classroom hours per academic discipline	96
Independent work, hours	120
Total hours per academic discipline / credits	216/6

### 1. Brief content of the discipline

The discipline contains the theoretical, experimental foundations and technical means of flaw detection, thickness measurement, structuroscopy of materials and products.

### 2. Learning Outcomes

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

– **know** basic patterns of formation of magnetic, electric and electromagnetic fields; characteristics and features of magnetic, electrical and eddy current transducers; basic methods of magnetic, electrical and eddy current control and measurements; ways to improve the metrological characteristics of methods and means of control; principles of operation and structure of universal and special devices;

– **be able to** develop equipment for control; develop technology for magnetic, electrical and eddy current testing of materials and products; develop metrological support of technical means; set up equipment and control materials and products using modern analog and digital instruments; draw up flow charts for control;

– **own** skills in the implementation of modern technologies for magnetic, electrical and eddy current testing of materials, products, welded joints; skills for assessing the quality of controlled objects.

3. Competences being formed: SK-16 "To be able to apply electromagnetic methods and devices to control a specific object"

4. Requirements and forms of the current attestation: exam (oral and written form). In order to be admitted to the exam, the student, in accordance with the curriculum, must complete and defend a course project, complete and defend laboratory work, as well as individual assignments for practical exercises.