METHODS AND INSTRUMENTS FOR INSPECTION OF BUILDING STRUCTURES
(course title)

COURSE SYLLABUS ABSTRACT

6-05-0716-03 – Information and Measurement Instruments and Systems
(speciality code and name)

Information Systems and Technologies for Non-Destructive Testing and Diagnostics
(concentration)

	STUDY MODE	
	full-time	part-time
Year	4	4
Semester	7	7
Lectures, hours	32	6
Laboratory classes, hours	16	4
Exam, semester	7	7
Contact hours	48	10
Independent study, hours	60	96
Total course duration in hours / credit units	108/3	

1. Course Description
The aim of this course is to familiarize students with the main types of building materials and structures; their physical, mechanical, chemical, technological, and operational properties; requirements of regulatory documents; instrumental base; as well as methodological and technological aspects of applying **non-destructive testing (NDT)** methods for assessing quality indicators of building materials and structures.
2. Course learning outcomes
Upon completion of this course, the student should:
Know:
Types of building materials and products in accordance with standard nomenclature;
Main physical, mechanical, chemical, technological, and operational properties of building materials, products, and structures;
Requirements of regulatory documents (codes and standards) for building materials, products, and structures;
Methods for calculating physical and mechanical characteristics of building materials and structures, including the use of modern software tools;
Methods and means for monitoring parameters of technological processes and product quality indicators.
Be able to:
Select the optimal NDT method and equipment for specific objects and evaluate their capabilities in terms of achieving maximum informativeness and reliability;
Perform quality control of raw materials and products at all stages of production of building materials and structures;
Assess and monitor the quality of construction and installation works.
Have practical skills in:
Working with key reference and regulatory documents related to the production and quality control of building materials and structures;
Using standard and modern research methodologies, instruments, and equipment for conducting standard tests of materials and structures.

3. Competencies
Ability to design assemblies, units, and components of non-destructive testing instruments.

4. Requirements and forms of midcourse evaluation and summative assessment
Ongoing assessment: defense of laboratory assignments.
Interim assessment: final examination.