INSTRUMENTS AND CONTROL SYSTEMS DESIGN
(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 (shortened program)
Year	4	4
Semester	8	8
Lectures, hours	28	6
Laboratory classes, hours	42	8
Course project, semester	8	8
Exam, semester	8	8
Contact hours	70	14
Independent study, hours	30	86
Total course duration in hours / credit units	100/3	

1. Course outline

The objective of this course is to familiarize students with regulatory documentation requirements, teach general strategies for designing non-destructive testing instruments and systems, introduce modern design methodologies using Computer-Aided Design (CAD) tools, and develop practical skills in solving contemporary design problems.

2. Course learning outcomes

Upon completion of the course, students will be expected to

know: fundamental principles and approaches used in instrument and system design; stages of the design process and development phases; modern classification of instruments; functional architecture of instruments and their components; physical foundations and operating principles of instruments and systems, as well as their future development trends; capabilities of modern CAD software.

be able to: apply hardware and software CAD tools; formulate and solve engineering tasks using application software.

to possess a skill: in rational design of non-destructive testing instruments and systems using automated design software.

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.