

PHYSICAL BASIS OF MEASUREMENTS

(name of the discipline)

ANNOTATION TO THE CURRICULUM OF THE INSTITUTION OF EDUCATION

Speciality 6-05-0716-03 –Information and measuring devices and systems

Information systems and technologies for non-destructive testing and diagnostics

	Form of higher education
	Full-time (daytime)
Well	2
Semester	3
Lectures, hours	34
Practical (seminar) lessons, watch	16
Laboratory classes, hours	16
Coursework, semester	3
Report, semester	3
Class hours for the academic discipline	58
Independent work, hours	40
Total hours per academic discipline / credits	108/3

1 Brief content of the discipline

The discipline deals with the physical basis for determining units of measurement, the physical effects used in measurements, the means and methods for recording measurement results.

2 Learning Outcomes

- know the physical laws that determine the methods of measurement and the principles of construction of measuring instruments, types and methods of measurement, the main functions of measuring systems, the natural limits of measurements, the main sources of measurement error: noise, interference, internal processes, general concepts in the field of measurement theory;
- be able to work with power supplies, generators, oscilloscopes and other devices, solve problems to determine the main characteristics of primary converters, apply physical knowledge to solve measurement problems, design measuring instruments, ensure the uniformity of measurements;
- own the basic measurement methods and the skills of applying these methods for the design of measuring instruments, the methodology for choosing the optimal procedures that make up the measuring process, the skills of analyzing the structure of the measuring path of instruments and measuring systems.

3 Formed competencies

To master the basics of research activities, to search, analyze and synthesize information

To be capable of self-development and improvement in the professional activity

Take the initiative and adapt to changes in professional activity

Solve measurement tasks, including the selection of measurement methods and processing of measurement results

4 Requirements and forms of current and intermediate certification.

To assess knowledge, the current certification is used in the form of a test paper and the intermediate certification is used in the form of a credit. In this discipline, the course work is provided. To be admitted to the test, the student must complete and defend all laboratory work on time.