

Syllabus Form of Academic Discipline

№	Field name	Detailed content, comments
1	Name of the faculty	Detailed content, comments
2	The level of higher education	Faculty of Infocommunications
3	Code and title of specialty	175 Information and Measurement Technologies
4	The type and title of the educational program	Educational professional program «Quality of Products, Processes and Software»
5	Code and title of the discipline	FMFT "Fundamentals of metrology and measuring technologies"
6	Number of ECTS credits	11
7	The structure of the course (distribution by type and hours of training)	Lectures – 72 hours, practical – 40 hours, laboratory – 31 hours, consultations – 28 hours, independent work – 176 hours (including coursework – 30 hours), semester control – exam.
8	Schedule (terms) of study of the subject	4-th and 5-th semester of study
9	Prerequisites for learning the discipline	Higher mathematics, Physics, Fundamentals of Electrical Engineering and Electronics, "Fundamentals of probability theory and mathematical statistics" "Informatics", should be previously studied
10	Abstract (content) of the discipline	Disciplines of basic (professional) training, containing content modules: 1. Ensuring the uniformity of measurements 2. Theory of accuracy. 3. Processing of measurement results 4. Measuring instruments.
11	Competencies, knowledge, skills, understanding that a higher education acquirer has in the learning process	<p>General competencies</p> <p>GC 1. Knowledge and understanding of the subject area and professional activities.</p> <p>GC 5 Ability to search, process and analyze information from various sources</p> <p>GC 8 Ability to learn and acquire modern knowledge</p> <p>Professional competencies</p> <p>PC 1 The ability to analyze the components of the error according to their essential features, to operate with the components of the error / uncertainty in accordance with the measurement models</p> <p>PC 3 The ability, based on the measurement task, to explain and describe the principles of</p>

		<p>construction of computational components of measuring equipment</p> <p>PC 6 Ability to perform technical operations during testing, verification, calibration, sampling, reconciliation and other operations of metrological activity</p>
12	Learning outcomes of a Higher Education applicant	<p>Program learning outcomes</p> <p>PLO 2 Know and understand the basic concepts of metrology, measurement theory, mathematical and computer modelling, modern methods of processing and assessing the accuracy of a measurement experiment</p> <p>PLO 12 Know and understand modern theoretical and experimental research methods with an assessment of the accuracy of the results obtained</p> <p>PLO 14 Be able to organize the procedure for measuring, calibrating, testing when working in a group or individually</p>
13	Assessment system in accordance with each task for taking tests/exams	<p>Evaluation of the student's work during the semester: 1. Work out and defend laboratory works. 2. Complete tasks in practical classes. 3. Perform an individual calculation task. 4. Get at least 60 points per semester.</p>
14	The quality of the educational process	<p>5. Take a combined exam.</p> <p>Grade for the semester $Q_{\text{сem}}: (7,5-12,5) \times 4 \text{ lab} + (7,5-12,5) \times 4 \text{ pw} = (60-100) \text{ points.}$</p> <p>Grade for the exam $O_{\text{ек3}} = (60-100) \text{ points.}$</p> <p>Final grade is calculated according to the formula: $Q_{\text{сem}} \times 0,6 + Q_{\text{ек3}} \times 0,4 = (60-100) \text{ балів}$</p>
15	Methodological support	<p>The complex of educational and methodological support of the academic discipline "Fundamentals of metrology and measuring technologies" for the preparation of bachelors of specialty 152 "Metrology and information and measuring equipment" of educational programs "Quality of products, processes and software", [Electronic resource] / KNURE; comp. I.P. Zakharov. - Kharkov, 2022. - 296 p.</p>
16	The developer of the Syllabus	<p>I.P. Zakharov, head of the department. IMT, Doctor of Technical Sciences, Professor IE-mail: igor.zakharov@nure.ua</p>