

Syllabus of Academic Discipline
“Measuring instruments verification”

№	Field name	Detailed content, comments
1	Name of the faculty	FACULTY OF INFOCOMMUNICATIONS
2	The level of higher education	Bachelor's educational and scientific
3	Code and title of specialty	152 – Metrology and Information-Measuring Technology
4	The type and title of the educational program	Educational program – Technical Expertise
5	Title of the discipline	Measuring instruments verification
6	Number of ECTS credits	6
7	The structure of the course (distribution by type and hours of training)	36h.– 18 L, 16h.– 9 P, 20h.– 10 L, 12h.–6 consultation, 96h.– independence, type of control: exam
8	Schedule (terms) of study of the subject	IV year, VIII semester
9	Prerequisites for learning the discipline	Previously, the disciplines “Higher mathematics”, “Physics”, “Methods and tools of measurement” and “Introduction to the specialty” should be studied
10	Abstract (content) of the discipline	Normative discipline of basic (professional) studying in the specialty, contains following content modules: 1. Basic concepts in the field of verification (calibration) of measuring devices. 2. Methods and means of checking electromechanical measuring devices. 3. Methods and means of verification of measurements of electrical quantities. 4. Methods and means of verification of scale converters. 5. Methods and means of checking electronic voltmeters. 6. Methods and means of verification of digital measuring devices. 7. Methods and means of verification of measuring generators. 8. Methods and means of checking devices for measuring parameters of the curve of electrical signals. 9. Methods and means of checking devices for measuring phase difference, frequency and time intervals.
11	Competencies, knowledge, skills, understanding that a higher education acquirer has in the learning process	Know the methods of transferring the size of units of physical quantities from standards to working measuring devices; modern approaches and features of choosing a reference base for verification (calibration) of measuring devices and development of local verification schemes; Be able to independently choose a reference base

		for verification (calibration) of any measuring device, draw up local verification schemes for various measuring devices.
12	Learning outcomes of a Higher Education applicant	The ability to develop lists of measuring devices that are subject to verification (calibration) in the process of metrological support of the enterprise (organization), using technical documentation and regulatory documentation of the relevant direction: Be able to develop local verification schemes and methods of verification (calibration) of existing measuring devices, provided they are not in the technical documentation or do not comply with the current legislation and regulatory framework of Ukraine.
13	Assessment system in accordance with each task for taking tests/exams	To evaluate the student's work during the semester, the final rating grade is calculated as the sum of grades for various classes and control measures. Practical lessons 1 - 4 (3...5)×4 = 12...20 points Laboratory works 1, 2 (6...10)×2 = 12...20 points Test 1 6...10 points Control point 1 30...50 points Practical lessons 5, 6 (3...5)×2 = 6...10 points Laboratory works 3 – 5 (6...10)×3 = 18...30 points Test 2 6...10 points Control point 2 30...50 points A total of 60...100 points per semester The form of final control is a written (combined) exam. With this type of control, the final score Pf is calculated according to the formula: $Pf = 0.6 * Psem + 0.4 * Pex$, where Psem is the grade for the semester in the 100-point system, Pex is the grade for the exam in the 100-point system. The exam ticket consists of three theoretical questions, a test and a task which are valued at 20 points each (in total - 100 points).
14	The quality of the educational process	Adherence to the principles of academic integrity (http://lib.nure.ua/plagiat). Update the work program of the discipline – 2022 year.
15	Methodological support	Complex of educational and methodical support of the educational discipline “Measuring instruments verification” for the bachelor of a specialty 152 "Metrology and information-measuring technology", educational program "Technical expertise" [Electronic resource] / KhNURE; Compiler:M.Sergienko. - Kharkiv, 2020. http://catalogue.nure.ua/knmz .
16	The developer of the Syllabus	Y.Kozlov, Department of Information and Measurement Technology, PhD E-mail: yurii.kozlov@nure.ua

