

**NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF
UKRAINE**

Professor B.V. Lesik department of storage, processing and standardization of plant
products

APPROVED
Dean of the Agrobiological Faculty

«10»_06_2025 p.

WORK PROGRAM OF THE ACADEMICAL DISCIPLINE
“Standartization and quality management
of planting products”

Area of knowledge: 20 Agricultural sciences and food

Specialization: 201 “Agronomy»

Academic-professional programme: Agronomy

Faculty: Agrobiology

Developed by: Volodymyr VOITSEKHIVSKYI, PhD, associate professor

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1. Description of the discipline

The discipline includes the study of the following issues: goals and objectives of standardization, the essence of standardization as a science, methodological foundations of standardization, issues of product quality, standardization of product quality indicators and control methods, international standards. General information about domestic and foreign experience in product quality management, product certification and metrological support. Mastering the current requirements for plant products for the purpose of planned production of competitive products. Developing effective measures for product quality management in the production of high-quality, environmentally safe, organic and competitive products. Mastering the principles and procedures for product certification for the domestic market and export. Features of the creation and implementation of the ISO 9000 standards system in production with subsequent

Area of knowledge, specialty, academic- professional programme, academic degree	
Academic degree	<i>Bachelor's</i>
Specialty	<i>201 Agronomic</i>
Academic-professional programme	<i>Agronomic</i>
Characteristics of the discipline	
Type	Compulsory
Total number of hours	120
Number of ECTS credits	4
Number of modules	2
Course project (work) (if any)	-
Form of assessment	<i>Exam</i>
Indicators of the discipline for full-time forms of university study	
	Full-time university study
Year of study	3
Term	5
Lectures	<i>30 hr.</i>
Practical classes and seminars	<i>30 hr.</i>
Laboratory classes	<i>- hr.</i>
Self-study	<i>60 hr.</i>
Number of hours per week for full-time students	<i>4 hr.</i>

1. Aim, competences and expected learning outcomes of the discipline

Aim "Standardization and management quality of plant products" is optional subjects, which provided for educational and vocational programs (EPP) training educational qualification "Bachelor" direction "Agronomic". Educational discipline covers a wide range of problems in the field of agricultural production, and therefore its study helps broaden my horizons and create the necessary theoretical knowledge and practical skills of the future specialists in agronomic for sustainable use of plant products, determine its quality, prompt search and application in producing effective regulations.

The main task of learning a discipline - generate knowledge and practical skills for teaching the basics of standardization and quality control of crop production. The program is based on a study of the state of existing laws, regulations, and standards for agriculture. After learning of the course students should

Competences acquired:

- **integral competence (IC):** The ability to solve complex specialized tasks and practical problems in agronomy, which involves the application of theories and methods of the relevant science and is characterized by the complexity and uncertainty of conditions.

- **general competencies:**

GC 6. Knowledge and understanding of the subject area and understanding of professional activity;

GC 7. Ability to apply knowledge in practical situations;

GC 9. Ability to search, process and analyze information from various sources.

- **professional (special) competencies:**

SC 8. The ability to solve a wide range of problems and tasks in the process of growing agricultural crops, by understanding their biological characteristics and using both theoretical and practical methods.

- **programmatic learning results:**

PLR 4. Compare and evaluate modern scientific and technical achievements in the field of agronomy;

PLR 5. Conduct a literature search in Ukrainian and foreign languages and analyze the information received.

2. Programme and structure of the discipline

Names of content modules and topics	Number of hours													
	Full-time form							Part-time form						
	weeks	total	including					total	including					
			l	p	lab	ind.	s.st.		l	p	lab	ind.	s.st.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Content Module 1. Theoretical basis of standardization and of quality management														
1.Introduction	1	4	2	2	-	-	-	-	-	-	-	-	-	-
2.The theoretical basis of standardization and of quality management	2	4	2	2	-	-	-	-	-	-	-	-	-	-
3.Organizational principles of standardization in Ukraine	3	10	2	2	-	-	6	-	-	-	-	-	-	-
4.Methodical bases of standardization	4	10	2	2	-	-	6	-	-	-	-	-	-	-
5.Qualimetry the scientific basis for evaluating the quality	5	10	2	2	-	-	6	-	-	-	-	-	-	-
6.Technical quality control	6	10	2	2	-	-	6	-	-	-	-	-	-	-
7.Quality management	7	10	2	2	-	-	6	-	-	-	-	-	-	-
Total for content module 1	58		14	14	-	-	30	-	-	-	-	-	-	-
Content Module 2. Standardization and quality control plant products														
1.Standardization of cereal and pulse crops	8	8	2	2	-	-	4	-	-	-	-	-	-	-
2.Standardization of fruit crops	9	8	2	2	-	-	4	-	-	-	-	-	-	-
3.Standardization of vegetable crops	10	8	2	2	-	-	4	-	-	-	-	-	-	-
4.Standardization of technical crops	11	8	2	2	-	-	4	-	-	-	-	-	-	-
5.Standardization seeds and planting materials	12	8	2	2	-	-	4	-	-	-	-	-	-	-
6.Standardization of fertilizers	13	8	2	2	-	-	4	-	-	-	-	-	-	-
7.Basics product certification	14	8	2	2	-	-	4	-	-	-	-	-	-	-
8.Fundamentals of metrology	15	7	1	2	-	-	2	-	-	-	-	-	-	-
9.Legal and economic aspects of standardization	15	1	1	-	-	-	-	-	-	-	-	-	-	-
Total for content module 2	62		16	16	-	-	30	-	-	-	-	-	-	-
Total hours	120		30	30			60	-	-	-	-	-	-	-
Course project (work) on			-	-	-		-	-	-	-	-	-	-	-
Total hours	120		30	30			60	-	-	-	-	-	-	-

3. Topics of lectures

№	Topic title	Hours
1	Introduction	2
2	The theoretical basis of standardization and of quality management	2
3	Organizational principles of standardization in Ukraine	2
4	Methodical bases of standardization	2
5	Qualimetry the scientific basis for evaluating the quality	2
6	Technical quality control	2
7	Quality management	2
8	Standardization of cereal and pulse crops	2
9	Standardization of fruit crops	2
10	Standardization of vegetable crops	2
11	Standardization of technical crops	2
12	Standardization seeds and planting materials	2
13	Standardization of fertilizers	2
14	Basics product certification	2
15	Fundamentals of metrology. Legal and economic aspects of standardization	2

4. Practical class topics

№	Topic title	Hours
1	Current requirements for wheat	2
2	Current requirements for barley	2
3	Current requirements for legumes cultures (soybeans, peas)	2
4	Current requirements for cereals cultures (buckwheat, oats)	2
5	Current requirements for oilseeds (sunflower, rape)	2
6	Current requirements for cereal cultures seeds	2
7	Current requirements for vegetable seeds	2
8	Current requirements for fruit crops (apples, pears)	2
9	Current requirements for stone fruit crops (peaches, apricots, plums)	2
10	Current requirements for berries (strawberries, gooseberries, currants)	2
11	Current requirements for root crops (carrots, beets)	2
12	Current requirements for vegetable crops (cucumber, tomato)	2
13	Current requirements for potatoes	2
14	Current requirements for cabbage vegetables	2
15	Current requirements for sugar beet	2

5. Independent work topics

№	Topic title	Number of hours
1	The current state of standardization and certification	6
2	State System of standardization	6
3	ISO on agricultural products	6
4	Standards for agricultural products	6
5	Standards for quality monitoring	6
6	Standards for agricultural products	6
7	Factors that determine the quality	6
8	Current state certification of agricultural production	6
9	Activity metrological service of Ukraine to ensure product quality	6
10	Certification of quality systems	6

6. Methods of assessing expected learning outcomes:

- oral or written survey;
- interview;
- test;
- defending practical works.

7. Teaching methods

- problem-based method;
- practice oriented studying method;
- flipped classroom, mixed education method;
- research based method;
- learning discussions and debates method.

8. Results assessment.

The student's knowledge is assessed by means of a 100-point scale converted into the national grades according to the "Exam and Credit Regulations at NULES of Ukraine" in force

Distribution of points by types of educational activities

Educational activity	Results	Asses- ment
Module 1. Modul 1. The theoretical basis of standardization and of quality management		
Practical work 1. Standardization of wheat	To study the requirements for wheat, barley, cereal crops, legumes, seeds of grain and vegetable crops. To acquire practical skills in determining the quality of grain crops. To identify the impact of standardization on the level of product quality. To compare and evaluate modern scientific and technical achievements in the field of agronomy; 5. To conduct a literature search in Ukrainian and foreign languages and analyze the information obtained. To master the basics of standardization and current requirements for products.	6
Practical work 2. Standardization of barley		6
Practical work 3. Standardization of legumes (soybeans, peas)		6
Practical work 4. Standardization of cereals (buckwheat, oats)		6
Practical work 5. Standardization of oilseeds (sunflower, rape)		6
Practical work 6. Standardization of cereal seeds		6
Practical work 7. Standardization of fruit crops (apples, pears)		6
Self-study M1		28
Module control work 1.		30
Total for module 1		100
Module 2. Standardization and quality control plant cultivation products		
Practical work 1. Standardization of stone fruit crops (peaches, apricots, plums)	To master the current requirements for fruit and vegetable products. To acquire practical skills in determining the quality of grain crops. To identify the impact of standardization on the level of product quality. To compare and evaluate modern scientific and technical achievements in the field of agronomy. To conduct a literature search in Ukrainian and foreign languages and analyze the information obtained. To master information on the creation of quality management systems at enterprises. To master the basics of quality management and current requirements for products.	6
Practical work 2. Standardization of berries (strawberries, gooseberries, currants)		6
Practical work 3. Standardization root crops (carrots, beets)		6
Practical work 4. Standardization of pumpkin and tomato vegetable crops (cucumber, tomato)		6
Practical work 5. Standardization of potatoes		6
Practical work 6. Standardization of cabbage vegetables		6
Practical work 7. Standardization of sugar beet and green crops		6
Self-study M2		28
Module control work 2.		30
Total for module 2		100
Class work	$(M1 + M2)/2 * 0,7 \leq 70$	
Exam/credit	30	
Total for year	$Coursework + exam \leq 100$	

8.1. Scale for assessing student's knowledge

Student's rating, points	National grading (exam/credits)
90-100	excellent
74-89	good
60-73	satisfactory
0-59	unsatisfactory

8.2. Assessment policy

<i>Deadlines and exam retaking rules</i>	works that are submitted late without valid reasons will be assessed with a lower grade. Module tests may be retaken with the permission of the lecturer if there are valid reasons (e.g. a sick leave).
<i>Academic integrity rules</i>	cheating during tests and exams is prohibited (including using mobile devices). Term papers and essays must have correct references to the literature used
<i>Attendance rules</i>	Attendance is compulsory. For good reasons (e.g. illness, international internship), training can take place individually (online by the faculty dean's consent)

9. Teaching and learning aids:

- e-learning course of the discipline (<https://elearn.nubip.edu.ua/course/view.php?id=3866>);
- references to digital educational resources (<https://elearn.nubip.edu.ua/course/view.php?id=3866>);
- Подпратов Г.І., Войцехівський В.І., Насіковський В.А. Стандартизація та управління якістю продукції рослинництва: Навчальний посібник. К.: «ЦІТ», 2024. 318с.

10. Recommended sources of information

1. Подпряттов Г.І., Войцехівський В.І., Насіковський В.А. Стандартизація та управління якістю продукції рослинництва: Навчальний посібник. К.: «ЦІТ», 2024. 318с.
2. Коренець Ю.М. Стандартизація, сертифікація і метрологія: навч. посіб. Кривий Ріг: ДонНУЕТ, 2023. 90 с.
3. Воробець М.М., Кондрачук І.В. Стандартизація, сертифікація, метрологія та управління якістю : навчальний посібник. Чернівці: ЧНУ ім. Юрія Федьковича, 2022. 104 с.
4. Воробець М.М., Кондрачук І.В. Стандартизація, сертифікація, метрологія та управління якістю : навчальний посібник. Харків: ХНАДУ, 2019. 76с.
5. Салавеліс А.Д., Павловський С. М. Стандартизація, метрологія та сертифікація: підручник. Одеса: Олді+, 2023. 212 с.
6. Стойко І.І. Шерстюк Р.П. Стандартизація, сертифікація, метрологія. Тернопіль: ТНТУ. 2023. 224 с.
7. Калашнікова Х. І. Управління якістю. Харків: ХНУМГ ім. Бекетова, 2023. 138 с.
8. Нанка О.В., Антощенко Р.В., Кісь В.М. та ін. Загальне управління якістю: підручник. Харків: ХНТУСГ, 2019. 205 с.
9. Капінос Г.І., Грабовська І.В. Управління якістю: навчальний посібник. К.: Кондор, 2019. 278 с.
10. Панченко О.П. Управління якістю: теорія та практика. К.: Центр учбової літератури, 2019. 228с.
11. Вотченікова О.В., Лойко Д.П., Удовіченко О.П. Управління якістю. К.: Магнолія, 2024. 336с.
12. Костюченко М.П. Теоретико-методологічні аспекти управління якістю. К.: Кондор, 2019. 392 с.
13. Нестеренко С.В. Управління якістю. Харків: ХНУМГ ім. О. М. Бекетова, 2021. 85 с.
14. Коцюбенко Г.А., Каницька І.В. Системи управління якістю. Миколаїв: МНАУ. 2020. 226 с.

Information resources

<http://www.leonorm.lviv.ua/>

<https://www.ukresm.kiev.ua>

https://pidru4niki.com/1478071850432/marketing/derzhavna_standartizatsiya_ukrayini_mizhnarodna_standartizatsiya

http://www.agrosvit.info/pdf/20_2019/8.pdf

<https://magazine.faaf.org.ua/standartizaciya-vnutrishnogospodarskogo-kontrolyu.html>

<https://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=2bf5371d-79eb-4a92-8117-%2027f19ac3bb18&title=NatsionalniiOrganStandartizatsii>