SYLLABUS OF AN ACADEMIC DISCIPLINE
Herbology

Academic degree - **Bachelor's**
Specialty 201 «Agronomy»
Academic programme Agronomy»

Year of study __2__ , **semester** ____4____
Form of stud __full-time____ (full-time, part-time)
Number of ECTS credits___4__
Language(s) of instruction __English___ (Ukrainian, English, German)

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URL of the e-learning course on the NULES e-learning portal	https://elearn.nubip.edu.ua/course/view.php?id=3090 https://elearn.nubip.edu.ua/course/view.php?id=4335

ACADEMIC DISCIPLINE DESCRIPTION
(up to 1000 symbols)

The discipline is focused on the formation of students from the specialty 201 "Agronomy" of the necessary set of theoretical knowledge, acquisition of practical skills and abilities for the effective implementation in professional activity of a system of measures aimed at successfully controlling the level of the presence of weeds in agrophytocenoses. The student will acquire the skills of abstract thinking, analysis and synthesis of information regarding the ecological and biological features of weeds and the development of the weed component of agrophytocenoses; will know the basic concepts and laws of herbology, the composition and structure of agrophytocenoses; the system of relationships between different species, the competitive ability of cultivated plants; classification of weeds and groups, harmfulness, morphology, ecological and biological features of the main species; methods of accounting and assessment of potential and actual weediness of arable land; a system of preventive and exterminating measures against weeds. The student will be able to identify common types of weeds in Ukraine by seeds and plants in different phases of their development; potential and actual weediness of the fields, assess their level, make a map of the weediness of the fields; implement in practice a system of field weed control measures adapted to specific conditions; to assess the quality of field weed control works

Competences of the discipline:

- *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 complexity and compliance with zonal conditions.

General competences (GC): Striving to preserve the environment; Ability to apply knowledge in practical situations.

Special (professional) competences (SC): The ability to scientifically use fertilizers and plant protection products, taking into account their chemical and physical properties and impact on the environment;

- The ability to solve a wide range of problems and tasks in the process of growing agricultural crops, by understanding their biological features and using both theoretical and practical methods;

- Ability to manage complex actions or projects, responsibility for decision-making in specific production conditions;

Expected Learning Outcomes (ELO): ELO14 Integrate and improve production processes of growing agricultural products in accordance with current requirements;

ELO13 To design and organize activities for the cultivation of high-quality agricultural products and in accordance with current requirements;

ELO11 Initiate prompt resolution of production problems in accordance with zonal conditions;

ELO10 Analyze and integrate knowledge from general professional training to the extent necessary for special professional work in the field of agronomy;

ELO9 To have at the operational level the methods of observation, description, identification, classification, as well as cultivation of objects and maintaining the stability of agrophytocenoses with the preservation of natural diversity.

ACADEMIC DISCIPLINE STRUCTURE

Topic	Hours (lectures/laboratory, practical, seminars)	Learning outcomes	Tasks	Assessment
1 semester				
Module 1 SCIENTIFIC BASIS OF HERBOLOGY				
Topic 1. Introduction. The concept of herbology, its development and importance in the training of specialists in the agrarian profile	2/-	Understanding the role, place and importance of the discipline "Herbology" in the training of specialists in the agrarian profile; Ability to analyze and synthesize acquired knowledge; Ability to search, process and analyze information from various sources.	Master the provided materials and study the main provisions of the topics of the content module "Scientific foundations of herbology". Performing independent work on elearn	0-100
Topic 2. The concept of plant groups. Agrophytocenoses and the history of their formation.	2/-	Mastering the mandatory in-depth and comprehensive knowledge of basic concepts in herbology, laws and rules for the formation of plant groups, their classification, the object of regulation, etc.	Take the test.	
Topic 3. Composition and structure of agrophytocenoses, their variability	2/-	Understanding the peculiarities of the formation of agrophytocenoses		
Topic 4. Agricultural crops are dominant agrophytocenoses. Competitive ability of cultivated plants in agrophytocenoses.	2/-	Evaluation of the competitive ability of the cultural component of agrophytocenosis and ways of its regulation. Understanding the dynamics of the appearance of seedlings of various types of weeds and the possibilities of their presence in crops of a specific crop		
Module 2 SEGETAL VEGETATION IN AGROPHYTOCENOSES				
Topic 5. Segetal vegetation in agrophytocenoses. Weeds as a component of	2/14	Possession of mandatory in-depth and comprehensive	Master the provided materials and study the main provisions of	0-100

agrophytocenosis. The concept of weeds and their harmfulness. Agrobiological classification of weeds. Study of the main types of weeds, their seeds and seedlings. 1. Agrobiological Classification of weeds. Ephemera. Spring is early and late. 2. Winter, hibernating and biennial species. 3. Perennial species. Quarantine species. 4. Children's stairs. 5. Stairs of perennials. 6. Seeds of juveniles. 7. Perennial seeds.		knowledge of the object of regulation, its harmfulness and division according to various classifications. The ability to identify the main types of weeds in different phases of development, distinguish between their seeds and seedlings.	the topics of content module 2. Study the classification of weeds and weed groups. To study the taxonomy, morphology and ecological and biological features of 72 types of weeds. Learn and distinguish between weed seeds and seedlings. Submit: Herbarium of adult species, seedlings and seeds, identifying the object and verbally naming the Ukrainian and Latin names of the plants, family, biological group and class.	
Topic 6. Ecological and biological features of weeds. Analysis of agroclimatic conditions for the formation of agrophytocenosis and construction of a phenological map of the scheme of growth and development of rural areas. cultures	2/2	Using knowledge of the ecological and biological features of weeds in the development of strategies and tactics for controlling their number and assessing the possibilities of implementing measures in specific conditions	Analysis and assessment of agroclimatic conditions for the formation of agrophytocenosis and construction of a phenological map of the scheme of growth and development of rural areas. cultures, according to the student's individual task	
Module 3. CONTROL OF POLLUTION OF AGROPHYTOCOENOSES				
Topic 7. Methods of determining weediness of fields and its assessment. Forecast of weediness. Prediction of emergence of weeds.	2/2	Based on the accounting of potential and actual weediness of arable land, make a forecast and monitoring map of weediness of the fields Make a forecast of the emergence of weeds.	Carrying out individual tasks on the topics of module 3: To make a forecast of weediness and emergence of weeds in accordance with the individual task of the student. Based on the potential weediness, predict the number of weeds that will appear in crops during the growing season, the species composition of the weed community. Determine the degree	0-100

			of weediness.	
Topic 8. Weed control in agrophytocenoses. The systematicity of measures to control the weediness of arable land. Analysis of the species composition of weeds and determination of agrotypes and weediness class of crops	2/2	The ability to determine the type and class of weediness of crops.	Analyze the species composition of weeds and determine the agrotype and weediness class of crops	
Topic 9. Measures and methods of regulating the level of the presence of weeds and their classification.	2/-	Possession of information on available measures and methods of regulating the level of the presence of weeds and their classification.	To acquire information on available measures and methods of regulating the level of the presence of weeds and their classification	
Topic 10. Preventive method of controlling the presence of weeds in agrophytocenoses	2/-	Possess the method of creating a system of preventive measures to control the presence of weeds in agrophytocenoses, integrated into modern technologies for growing agricultural crops	Suggest possible preventive measures for weed control.	
Topic 11. Exterminating method of control of weediness of arable land. Mechanical exterminating anti-weed measures. Development of a system of mechanical weed control measures	2/4	Selection and development of a system of mechanical weed control measures taking into account the expediency, technological, economic, and economic effectiveness of anti-weed measures and their environmental acceptability	Taking into account the conditions for the formation of the weed community, propose possible methods of mechanical weed control and develop systems of main, pre-sowing and post-sowing soil cultivation where it will be possible to implement effective mechanical anti-weed measures.	
Topic 12. Destruction of weeds using chemical means./ Development of chemical measures to control weediness of crops.	2/4	Taking into account the economic thresholds of harmfulness, develop a system of chemical protection of crops against weeds	Select herbicides for crops according to the task and develop a system of chemical measures to control crop weediness.	
Topic 13. Classification of herbicides.	2/-	Possessing knowledge of the arsenal of available herbicides		
Topic 14. Physical and biological means of destroying weeds. Study of biological means of field weed control	2/2	Knowledge of biological means of field weed control	Choose effective physical and biological means of weed control.	
Topic 15. System of anti-weed measures in agrophytocenoses of various groups of agricultural crops.	2/2	The ability to select measures and methods of controlling the level of the presence of weeds in	Critical evaluation of the developed complex system of anti-weed measures in	

Evaluation of the optimality of the choice of field weed control measures		accordance with the type and class of weediness of crops, taking into account the peculiarities and expediency of each measure of its regulation. The ability to evaluate the created adaptive system of weed control measures in specific conditions	agrophytocenoses and ways of its improvement.	
Total for 1ˢᵗ semester				70
Examination				30
Total for the course				100

ASSESSMENT POLICY

Deadlines and exam retaking policy:	*EXAMPLE* 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).
Academic integrity policy:	*EXAMPLE* Cheating during tests and exams is prohibited (including using mobile devices). Term papers and essays must have correct references to the literature used
Attendance policy:	*EXAMPLE* Attendance is compulsory. For good reasons (e.g. illness, international internship), training can take place individually (online by the faculty dean's consent)

SCALE FOR ASSESSING STUDENTS 'KNOWLEDGE AND SKILLS

Student's rating, points	**National grading of exams and credits**	
	exams	**credits**
90-100	excellent	pass
74-89	good	
60-73	satisfactorily	
0-59	unsatisfactorily	fail

RECOMMENDED SOURCES OF INFORMATION

1. Косолап М.П., Примак І.Д., Іванюк М.Ф., Анісимова А.А., Бабенко А.І. Практикум з гербології. Навчальнтй посібник. – К.: 2018 р. – 581с.

2. Косолап М.П., Примак І.Д., Іванюк М.Ф., Анісимова А.А., Бабенко А.І. Практикум з гербології. Навчальнтй посібник 2-ге видання, доповнене і перероблене. – К.: 2019 р. – 931с.

3. Косолап М.П., Іванюк М.Ф., Примак І.Д., Анісимова А.А., Бабенко А.І. Практикум з гербології. Навчальнтй посібник 3-ге видання, доповнене і перероблене. – К.:НУБіП України, 2021 р. – 876с.

4. Косолап М.П., Іванюк М.Ф., Примак І.Д., Анісимова А.А., Бабенко А.І. Атлас бур'янів. К.:НУБіП України, 2022 р. – 112 с.

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7. http://mirslovarei.com
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10. https://elearn.nubip.edu.ua/course/view.php?id=3090
11. https://elearn.nubip.edu.ua/course/view.php?id=4335