



### COURSE SYLLABUS “BOTANY”

**Degree of higher education** – Bachelor  
**Specialization** – 202 Plant protection and quarantine  
**Educational programme** – 20 Agrarian sciences and food  
**Academic year** – 1, **semester** – 1  
**Form of study** – full-time  
**Number of ECTS credits** – 4  
**Language of instruction** – English

**Lecturer of the course** Anatolii P. Tertyshnyi, Phd in Biology, Associate Professor, Department of Botany, Dendrology and Forest Tree Breeding,

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**Course page on eLearn**

<https://elearn.nubip.edu.ua/enrol/index.php?id=1085>

### COURSE DESCRIPTION

The study of educational materials of the discipline “Botany” helps future bachelors of speciality 202 Plant protection and quarantine to obtain the appropriate level of theoretical knowledge, formation and development of special skills, practical skills using the laws of development of plants as major components of biosphere.

#### Competencies of the educational programme:

*Integrative competency (IC):* Ability to solve complex specialized problems and practical problems of professional activity with protection and quarantine of plants and apply theoretical knowledge and methods of phytosanitary monitoring, review, analysis, expertise, which are characterized complexity and uncertainty of conditions.

*General competencies (GC):*

GC 2. Ability to apply knowledge in practical situations

GC 3. Knowledge and understanding of the subject area and understanding of professional activity.

*Professional (special) competencies (PC):* –

#### Program learning outcomes (PLO) of the educational programme:

PLO 4. Have knowledge of the fundamental sections of higher mathematics, biophysics, chemistry (analytical, organic, inorganic, physical and colloid), botany and agrozoology to the extent necessary for understanding the processes of the specialty protection and plant quarantine.

### COURSE STRUCTURE

Topic	Hours (lecture/practical)	Learning outcomes	Tasks	Assessment
Semester 1				
Module 1				
<b>Topic 1.</b> Introduction to Botany.	0,5/1	Know terms, systematic and main groups of plants;	Submitting practical work. Taking tests	2
<b>Topic 2.</b> Plant cell	0,5/1	Be able to operate on the botanical terminology and methods of investigation of plants that are necessary to study plants on practice.		2
<b>Topic 3.</b> Plant tissues.	0,5/1	The variety of plants induces the study of specific features of different groups of plants, their		2
<b>Topic 4.</b> Vegetative organs of plants.	0,5/1			2
<b>Topic 5.</b> Propagation of plants.	1/2			4
<b>Topic 6.</b> Genarative organs of angiosperm	1/2			2
<b>Topic 7.</b> Introduction to plant systematic. LUCA, Bacteria, Arkarya. Amorphea: Fungi. Archaeplastida: Glaucophyta,	1/2			

Rhodophyta, Viridiplantae.		development, phylogenetic relations and value for agriculture and plant protection.		
<b>Topic 8.</b> Marschantiophyta, Bryophyta, Anthocerotophyta, Lycophyta Euphylllophyta, Monilophyta, Spermatophyta: Gymnospermatophyta. Structure, life cycles, biology.	1/2			4
<b>Module 2</b>				
<b>Topic 9.</b> Angiosperm plants. (Magnoliophyta, APG IV): ANA GRADE, MAGNOLIDS, MONOCOTS, EUDICOTS, SUPERROSIDS.	6/12	Know terms, systematic and main groups of plants; Be able to operate on the botanical terminology and methods of investigation of plants that are necessary to study plants on practice. The variety of plants induces the study of specific features of different groups of plants, their development, phylogenetic relations and value for agriculture and plant protection.	Submitting practical work. Taking tests	20
<b>Module 3</b>				
<b>Topic 10.</b> SUPERASTERIDS, ASTERIDS	2/4	Know terms, systematic and main groups of plants; Be able to operate on the botanical terminology and methods of investigation of plants that are necessary to study plants on practice. The variety of plants induces the study of specific features of different groups of plants, their development, phylogenetic relations and value for agriculture and plant protection.	Submitting practical work. Taking tests	20
<b>Topic 11.</b> Phytogeography. Flora. Areal of plants. Main ecological factors and its influence on plants.	0,5/1			5
<b>Topic 12.</b> Phytocoenology. Vegetation. Types of vegetation. Systematic of phytocenosis.	0,5/1			5
<b>Total for 1 semester</b>				<b>70</b>
<b>Exam</b>				<b>30</b>
<b>Total for course</b>				<b>100</b>

## ASSESSMENT POLICY

<b>Policy regarding deadlines and resits:</b>	Assignments submitted after the deadline without valid reasons will be graded lower. Resitting of modules will be allowed with the permission from the lecturer and in the presence of valid reasons (e.g. medical reasons).
<b>Academic honesty policy:</b>	Cheating during tests and exams is strictly prohibited (including the use of mobile devices). Coursework and research papers must contain correct citations for all sources used.
<b>Attendance policy:</b>	Class attendance is mandatory. In case of objective reasons (such as illness or international internships), individual learning may be allowed (in online format by the approval of the dean of the faculty).

## SCALE OF ASSESSMENT OF STUDENT KNOWLEDGE

Student rating, points	National grade based on exam results	
	exams	credits
90-100	excellent	passed
74-89	good	
60-73	satisfactory	
0-59	unsatisfactory	not passed

## RECOMMENDED SOURCES OF INFORMATION

- Berg L.R. Introductory botany: Plants, people, and the environment. 2<sup>nd</sup> edition, Thompson Brooks/Cole, 2008.
- Simpson M. G. Plant Systematics. 3rd Edition, Academic Press, 2019.
- Singh G. Plant Systematics: An integrated approach. 3rd edition, Enfield, N.H.: Science Publishers, 2010.
- Tertyshnyi A.P. Botany. Current system of flowering plants. Part I. Methods handbook for students of the educational degree "Bachelor" of the specialty 202 "Plant protection and quarantine". Kyiv: Lira-K, 2022. 182 p.
- Tertyshnyi A.P. Botany. Part 1: tutorial. Kyiv: Lira-K, 2020, 250 p.
- Тертишний А.П. Ботаніка. Квіткові рослини Лісостепу України. Частина 1: навчально-методичний посібник для студентів освітнього ступеня "Бакалавр" спеціальності 202 "Захист і карантин рослин". Київ: Видавництво Ліра-К, 2022. 165 с.
- Тертишний А.П. Покритонасінні рослини Лісостепу України. Частина 1: Навчальний посібник. Київ: Видавництво Ліра-К, 2021. 706 с.
- Тертишний А.П. Покритонасінні рослини Лісостепу України. Частина 2: Навчальний посібник. Київ: Видавництво Ліра-К, 2022. 312 с.
- Якубенко Б.Є., Григора І.М. Польовий практикум з ботаніки. Навчальний посібник. 2-е видання, перероблене та доповнене. К.: Арістей, 2008. 260 с.
- Якубенко Б.Є. Алейніков І.М., Шабарова С.І., Машковська С.П. Ботаніка. Підручник (перевидання). Київ, Видавництво Ліра-К, 2021, 436 с.
- Якубенко Б.Є., Григора І.М., Мельничук М.Д. Геоботаніка. Навчальний посібник. К.: Арістей, 2008. 444 с.
- Якубенко Б.Є., Попович С.Ю., Григорюк І. П., Устименко П.М. Геоботаніка: тлумачний словник. Навчальний посібник. (перевидання). – К.: Ліра-К, 2021. – 485 с.

### Internet sources

- Angiosperm phylogeny website\_version <http://www.mobot.org/MOBOT/research/APweb/>
- Catalogue of life <https://www.catalogueoflife.org>
- Eurasian Dry Grassland Group <https://edgg.org/>
- European Vegetation Archive (EVA) <http://euroveg.org/eva-database>
- European Vegetation Survey <http://euroveg.org/>
- Global Biodiversity Information Facility (GBIF) <https://www.gbif.org>
- Global Index of Vegetation-Plot Databases (GIVD) <http://www.givd.info/>
- National Biodiversity Information Network <http://ukrbin.com>
- National Vegetation Classification (NVC) <https://incc.gov.uk/our-work/nvc/>
- Open data about biodiversity <https://www.inaturalist.org>
- Society for ecological restoration (SEP) <https://www.ser.org/default.aspx>
- The Gymnosperm Database <https://www.conifers.org/index.php>
- The International Association for Vegetation Science (IAVS) <http://iavs.org/>
- The WFO <http://www.worldfloraonline.org/>
- U.S. National Plant Germplasm System <https://npgsweb.ars-grin.gov/>
- Ukrainian geobotanical site <http://geobot.org.ua/>