SYLLABUS OF AN ACADEMIC DISCIPLINE
SYSTEMS OF TECHNOLOGIES: CROP PRODUCTION

Academic degree - Bachelor's
Specialty 073 Management
Academic programme Management

Year of study 1**, semester** 1
Form of study full-time, part-time
Number of ECTS credits 4
Language of instruction English

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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=459

ACADEMIC DISCIPLINE DESCRIPTION

The main goal of the discipline is to provide knowledge on creating optimal technological (agroecological) conditions for producing the required amount of high-quality plant products based on intensive photosynthesis in field crops while maintaining or increasing soil fertility. The main task is to acquire practical skills in producing high-quality, environmentally friendly products with minimal energy and labor costs while maximizing their output per unit of time and per unit of land, which requires the wide implementation of varietal, intensive, energy- and resource-saving, and ecologically appropriate technologies. Theoretical foundations of labor protection, legal foundations of labor protection for workers in crop production, safety techniques in crop production, and fire safety in crop production are covered in the course.

Competences of the discipline:

Integral competence (IC): The ability to solve complex specialized tasks and practical problems characterized by complexity and uncertainty in the field of management or in the process of learning, which involves the application of theories and methods of social and behavioral sciences.

General competences (GC):

GC 4. Ability to apply knowledge in practical situations.

Special (professional) competences (SC):

SC 1. Ability to identify and describe the characteristics of an organization.

SC 2. Ability to analyze the performance of an organization and compare it with the factors of influence from the external and internal environment.

SC 6. Ability to act socially responsibly and consciously.

SC 10. Ability to evaluate the performed work, ensure its quality, and motivate the organization's personnel.

SC 12. Ability to analyze and structure organizational problems, formulate well-founded decisions.

SC 16. Ability to identify and analyze new market opportunities, including the international business environment, formulate new ideas, develop projects, and organize business process management.

Expected Learning Outcomes (ELO):

ELO 4. Demonstrate skills in identifying problems and justifying managerial decisions.

ELO 5. Describe the content of the functional areas of an organization's activities.

ELO 6. Demonstrate skills in searching for, collecting, and analyzing information, and performing calculations.

ELO 12. Evaluate the legal, social, and economic consequences of an organization's functioning.

ACADEMIC DISCIPLINE STRUCTURE

Topic	**Hours** (lecture/laboratory, practical, seminar)	Learning outcomes	Tasks	Assessment
Semester 1				
Content Module 1: Features and prospects of using marketing tools in crop production				
Topic 1. The development of plant science and agriculture as a production industry. The current state of plant production in Ukraine and worldwide.	**2/2**	To know about the current state and prospects of development in the field of crop production	Perform laboratory work 1. General characteristics of cereal crops.	**11**
Topic 2. Cereals is a basis of crop production	**2/2**	To know the significance, distribution, morphological, and biological characteristics of agricultural crops.	Perform laboratory work 2. Characteristics of crops and growth stages of cereal crops. Independent work 1.	**11** **5**
Topic 3. Organizational principles of effective winter wheat cultivation.	**2/2**	To know modern technologies for cultivating field crops and the peculiarities of their implementation in the soil-climatic zones of Ukraine.	Perform laboratory work 3. Botanical and morphological characteristics of wheat.	**11**
Topic 4. Early and late spring cereals – organizational principles of effective cultivation	**2/2**	To know the ways to improve the quality of agricultural products.	Perform laboratory work 4. Features of the morphological structure of corn. Independent work 2.	**11** **5**
Topic 5. Legumes. Management in cultivation technologies of peas and soybean	**2/2**	To know the sources of costs for cultivating agricultural crops and ways to optimize them.	Perform laboratory work 5. Leguminous crops. Growth and development features. Independent work 3.	**11** **5**
Module 2. Organization of cultivation of industrial crops (raw materials) for processing industry.				
Topic 6. The tuber market. general characteristics and features of using marketing tools in their cultivation technology.	**2/2**	Being able to plan and organize the implementation of technological procedures in crop production.	Perform laboratory work 6. Potato. Botanical characteristics. Independent work 4.	**12** **5**
Topic 7. Root crops. Sugar beets as the primary raw material for sugar production in Ukraine.	**2/2**	Understanding and being able to apply innovative elements in crop cultivation technologies.	Perform laboratory work 7. General characteristics of root crops. Independent work 5.	**12** **5**
Topic 8. The role of oilseed crops in the market in Ukraine and the World.	**2/2**	Being able to program the yield of agricultural crops.	Perform laboratory work 8. Characteristics of representatives of the oilseed group. Independent work 6.	**13** **5**
Topic 9. Sunflower and	**2/2**	Knowing and being able to	Perform laboratory work	**13**

rapeseed – the main oilseed crops of Ukraine and the World.		plan the production of high-quality, environmentally safe products with minimal energy costs per unit of output.	9. Sunflower. Morphological structure. Independent work 7.	**5**
Content Module 3. Mechanization in crop production. Theoretical basis of Labor protection				
Topic 10. Organization of Labor Protection in Crop Production	**2/2**	Students will be able to identify and implement safety measures and protocols to ensure the protection of workers engaged in crop production activitie	Perform laboratory work 10. Independent work 8.	**8** **10**
Topic 11. General issues of the discipline. Tractors and cars. Machines for tillage, fertilization and planting of crops.	**2/2**	Students will gain a comprehensive understanding of the types and functionalities of tractors, cars, and various agricultural machines used for soil preparation, fertilization, and crop planting.	Perform laboratory work 11.	**7**
Topic 12. Machines for plant protection, green harvesting and harvesting of cereal crops	**2/2**	Students will be equipped with the knowledge to operate and maintain machines designed for crop protection, green harvesting, and harvesting of cereal crops efficiently and effectively.	Perform laboratory work 12.	**8**
Topic 13. Machines for post-harvest processing of cereals, harvesting corn and potatoes	**2/2**	Students will develop proficiency in utilizing machines for post-harvest processing of cereals as well as harvesting corn and potatoes.	Perform laboratory work 13. Independent work 9.	**7** **10**
Topic 14. Machines for harvesting root crops of beets, flax, vegetables and fruit and berry crops	**2/2**	Students will learn to operate and manage machines specialized in the harvesting of root crops, including beets, flax, various vegetables, and fruit and berry crops, while maintaining quality.	Perform laboratory work 14.	**10**
Topic 15. Labor Protection when Working with Mechanisms	**2/2**	Students will acquire the necessary skills and knowledge to ensure the safety of personnel when operating machinery,	Perform laboratory work 15.	**10**
Total for 1 semester	**30/30**			**70**
Exam				**30**
Total for course				**100**

ASSESSMENT POLICY

Deadlines and exam retaking policy:	• Tasks must be submitted on time, according to the delivery schedule. • Penalty for delay: - 10% – less 1 month - 20% – more 1 month Re-assessment will be allowed if you pass all tasks in module

Academic integrity policy:	Plagiarism and re-delivery tasks don`t allow
Attendance policy:	Attendance is mandatory. For objective reasons (for example, illness, international internship) training can take place individually (in online form in consultation with the dean of the faculty)

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. *CROP PRODUCTION GUIDE AGRICULTURE. Tamil Nadu Agricultural University. Link: https://www.freebookcentre.net/biology-books-download/gotoweb.php?id=13855*
2. Graham Thiele, Michael Friedmann, Hugo Campos, Vivian Polar, Jeffery W. Bentle. Root, Tuber and Banana Food System Innovations. Springer, 2022. DOI: https://doi.org/10.1007/978-3-030-92022-7
3. Kalenska S., Dmytrishak M., Antal T., Mazurenko B., Crop production with basis of fodder production, Kyiv, 2021. [In Ukrainian]
4. Petrichenko V.F., Lykhochvor V.V. Roslynnytstvo. Novi tekhnolohii vyrashchuvannia polevykh kultur: pidruchnyk. - 5-te vid., vyrav., dopov. Lviv: NVF "Ukrainski tekhnolohii", 2020. 806 p. (Title: Crop Production. New Technologies for Field Crop Cultivation: Textbook)
5. Crop production manual. FAO. 2020. Available at: https://www.fao.org/3/ca7556en/CA7556EN.pdf
6. Statistics in Agriculture. Available at: https://fao.org/faostat
7. Ministry of Agriculture Politics http://www.minagro.kiev.ua/
8. Technology of cultivation (field crops) http://agro-business.com.ua/
9. Technology of cultivation (field crops) https://www.agronom.com.ua/