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|  | **COURSE SYLLABUS**  **«** **PLANT SCIENCE AND THE BASICS OF FODDER PRODUCTION»** |
| **Degree of higher education - Bachelor** |
| **Specialization 202 Protection and Plant Quarantine** |
| **Educational programme «** **Protection and Plant Quarantine »** |
| **Academic year 3, semester 5**  **Form of study \_\_** full-time |
| **Number of ECTS credits\_\_\_4\_\_\_** |
| **Language of instruction** English |
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| **Lecturer of the course** | **Bohdan Mazurenko, PhD in Agronomy** |
| **Contact information of the lecturer (e-mail)** | **mazurenko.bohdan@nubip.edu.ua** |
| **Course page on eLearn** | [**https://elearn.nubip.edu.ua/course/view.php?id=459**](https://elearn.nubip.edu.ua/course/view.php?id=459) |

**COURSE DESCRIPTION**

*(up to 1000 printed characters)*

Purpose of the course is to provide the theoretical knowledge and practical skills of the production of plant products, skills in the rational choice and effective use of various elements of technology in order to increase the productivity of culture and reduce the cost of production

Objectives is to develop the students' knowledge and skills in the based on the study of plant biological characteristics, students will be able to further develop measures and methods for optimizing environmental factors to maximize the potential of agricultural crop productivity. The discipline is based on the knowledge about the plants of field culture, the peculiarities of their development, the requirements for environmental factors, modern techniques and technologies for the cultivation of high yields of high quality at the lowest cost of labor and funds. In turn, crop production is the basis for such sciences as economics and organization of agricultural production.

**Competencies of the educational programme:**

*Integrative competency (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 competencies (GC):*

GC 4. The ability to communicate in the official language both orally and in writing.\_

GC 6. Skills in using information and communication technologies for professional activities.

**Program learning outcomes (PLO) of the educational programme:** *\_\_*

PLO 3. Ability to forecast the development and spread of harmful organisms, enabling the implementation of state policies in the field of plant protection and quarantine.

**COURSE STRUCTURE**

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| **Topic** | **Hours**  (lecture/laboratory, practical, seminar) | **Learning outcomes** | **Tasks** | **Assessment** |
| **Semester 1** | | | | |
| **Module 1 Management of the production process of cultivation technologies of cereals** | | | | |
| Topic 1. Plant science as branch of agriculture. Condition of modern plant science in Ukraine and world.  Topic 2. Technology of crop production |  | **To know** about the current state and prospects for the development of the agriculture sector; the importance, distribution, morphological and biological characteristics of agricultural crops; modern technologies for growing field crops and peculiarities of their implementation in soil-climatic zones of Ukraine; ways to improve the quality of agricultural products; sources of expenses for growing agricultural crops and ways to optimize them.  . | Submitting laboratory work.  Completing independent work (including in eLearn)  Pass module control (more than 60 % of maximum points is a check point) | **35** |
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| Topic 3. Cereals is a basis of agriculture. |  |
| Topic 4. Legumes: value, biological characteristics, growth technology |  |
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| **Module 2. Organization of cultivation of industrial crops (raw materials) for processing industry.** | | | | |
| Topic 5. Tuber and taproot crops |  | **To be able** to plan and organize the implementation of technological processes in agriculture; to apply innovative elements in crop cultivation technologies; to program crop yields for agricultural crops; to plan the production of high-quality, ecologically safe products with minimal energy costs per unit of output; to prevent yield losses during cultivation, harvesting, and storage; to use operational information for timely and high-quality implementation of complex agricultural work.  **To distinguish** between crops and the products obtained from them. **To use acquired knowledge and skills** in production during internships and other practical experiences | Submitting laboratory work.  Completing independent work (including in eLearn)  Pass module control (more than 60 % of maximum points is a check point) | **35** |
| Topic 6. Oil crops |  |
| Topic 7. Fiber crops |  |
| Topic 8. Medicinal and aromatic crops |  |
| **Total for 1 semester** |  |  | **70** |
| **Exam** |  |  |  | **30** |
| **Total for course** | | | | **100** |

**ASSESSMENT POLICY**

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| ***Policy regarding deadlines and resits:*** | * 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 honesty 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 OF ASSESSMENT OF STUDENT KNOWLEDGE**

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| **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**

1. CROP PRODUCTION GUIDE AGRICULTURE. Tamil Nadu Agricultural University. 2020. 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., М. Я. 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)

**Additional sources of information:**

1. Crop production manual. FAO. 2020. Available at: <https://www.fao.org/3/ca7556en/CA7556EN.pdf>
2. Statistics in Agriculture. Available at: <https://fao.org/faostat>
3. Ministry of Agriculture Politics <http://www.minagro.kiev.ua/>
4. Technology of cultivation (field crops) <http://agro-business.com.ua/>
5. Technology of cultivation (field crops) <https://www.agronom.com.ua/>
6. Precision farming (Demo tools for studying) <https://www.agrivi.com/blog/precision-farming/>
7. All about pesticides <https://pesticidestewardship.org/homeowner/understanding-pest-management/>