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| E:\nubip_logo_new_poisk_18_2.png | **SYLLABUS OF THE COURCE****“AGRICULTURAL ENTOMOLOGY”** |
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| Educational – Professional level- undergraduate/ **Bachelor**Major 202 “ Plant protection and quarantine” ; Field of knowlege “Agrarian sciences and food production” **Classification major: bachelor in Plant Protection and quarantine** |
| **Study year – 4, семестр − 1,2 2021-2022****Type of study − regular** |
| **Cedits ESTS\_6\_\_\_** |
| **Language of teaching − English** |
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| **Lecturer:** | **PhD in Biology. Associate Professor Stefanovska Tatyana**  |
|  **Contact information (e-mail)**  | **tstefanovska@nubip.edu.ua** |
| **Сторінка курсу в eLearn** |  |

**COURCE DESCRIPTION**

*(up to 1000 symbols)*

The cource is desighned to teach students to identify insect pests, to check and monitort pest an various fields, perennial plantations, green houses, storages; to determine type of plant damage; the nature of insect colonization at high and low degree; to study situations under which the application of different methods and measures of insect pest managment to or existence of beneficial fauna is planned with its further use.

**Course task:**

The protection of plants to reduce or prevent the loss of crop crops from harmful insects in agricultural landscapes and systems. The nature of damages and the quantity of ungraded harvest are related not only to pest behavior, but also with the appropriate reaction of the plant to damage caused by its varietal characteristics, economic conditions, etc.

The cource “Agriculturel Entomology” contributes (according to the educational program of this major ) to the forming of teorhetical and applied professional skills ЗК1, ЗК5, ЗК9, ФК2 and achevements of study perfirmence ПР6, ПР9, ПР11,according to which student have:

**To know** :

**1**. Species composition of insect pests of economical importance in Ukraine;

**2.** How to identify pests based on their morphological features, biological characteristics, damages, their phenology and ecology;

**To be able**:

**1**.Analyse information on dominant pest types and their threat level for agricultural crops;

**2.** Assess the actual phytosanitary state of different field and horticultural crops in various phenological and calendar periods; **3.** Considering of Economic thresholds correctly to choose the most effective set of measures to control pest population;

**4**.To plan crop protection measures and to adjust them according to changes in phytosanitary condition of agrocenosis during the vegetation period on the basis of systematic observation of pests development and spread;

**5**.Provide pest control pests in accordance with economic, environmental and toxicological requirements;

**6**.To determine the technical efficiency of the pest control.

**Cource suructure**

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| **Topic** | **Hours** (lectures/ laboratory, practical sections) |  **Study outcomes** | **Tasks** |  **Evaluation** |  |
| **1 semester** |  |
| **Module 1** |  |
| 1.1. Introduction to “Agricultural Entomology”Polyphagous pests fromOrder OrthoptersPolyphagous pests from order Coleoptera |  6/10 | To know and understand the task and history of agricultural entomologyTo know morphology, biology , damage and control of pests from three families Acrididae, Cryllotalpidae, Gryllidae To know morphology, biology and damage of pests from Scarabaeidae, Tenebrionidae, Elateridae | Study theoretical lecture part using text book and lectures notesLaboratory session“Polyphagous pests from order Orthoptera” Study theoretical part using text book and lectures notesLaboratory session“Polyphagous pests from order Coleoptera | **Multiple choice test****5** |  |
| 1.2. Polyphagous pests from Order Lepidoptera and their control | 6/8 | To know morphology, biology , damage and control of pests from Noctuidae and Pyralidae | Study theoretical lecture part using text book and lectures notesLaboratory section “Leaf-biting and ground-biting Leopidoptera polyphgous pests” | **Multiple choice test****10** |  |
| 1.3. Pests of cereal, and their control | 6/8 | To know morphology, biology, damage and control of cereal pests from orders Coleoptera, Homoptera, Diptera, Hymenoptera, Lepidoptera | Study theoretical lecture part using text book and lectures notes Laboratory sections “Piercing- sucking cereal crops pests”Laboratory section “Cereal pests with chewing moth parts | **10** |  |
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| 2.1. Pests of annual and perennial legumes and its control  | 6/8 | To know morphology, biology, damage and control of annual pest and perennial ( vegetative and reproductive organs) legume pests  | Study theoretical part using text book and lectures notes Laboratory sections“Annual legume pests”“Perennial legume pests” | **5** |  |
| 2.2. Pests of sugar beet. potato , flax/hemp and san-flowers technical crops  | 6/8 | To know morphology, biology, damage and control of sugar beet. potato , flax/hemp and san-flowers pests | Study theoretical part using text book and lectures notes Laboratory sections“Pests of sugar beets”“Pests of potato”Pests of sunflowers”“Pests of flax and hemp”. | **Multiple choice test****10** |  |
| **Module 3** |  |
| 3.1 Pests of vegetables in open field and their control  | 6/8 | To know morphology, biology, damage and control of cabbage, carrot, onion, and squash pests | Study theoretical part using text book and lectures notes Laboratory sections‘Pests of cabbage with piercing sucking and chewing moth parts”“Pests of carrot, onion and squash” | **Multiple choice test****10** |  |
| 3.2. Pests of storage products and its control  | 6/8 |  To know morphology, biology, damage and control of cabbage, tomato, cucumber pests and its controlTo know morphology of lepidoptera and coleopteran pests that can damage stored products | Study theoretical part using text book and lectures notesLaboratory section“ Pest of vegetables”Laboratory sectionPests of stored products | **10** |  |
| **Module 4** |  |
| 4.1. Foliage eating orchard insect pest with perceiving- and chewing sucking moth part with  | 6/8 | To know morphology, biology and damage of orchard fruit pests and its control | Laboratory section“ Orchard fruit pests of vegetative organs”“Orchard fruit pests of reproductive organs” | **Multiple choice test****10** |  |
| 4.2.Orchard pests | 4/8 | To know morphology, biology and damage of stone orchard fruit pests and its control | Study theoretical part using text book and lectures notesLaboratory section“Stone orchard fruit pests” |  |  |
|  4.3.Pests of berries  | 4/8 | To know morphology, biology and damage of berries fruit pests and its control | Study theoretical part using text book and lectures notesLaboratory section:“Berries (small fruits) pests” | **Multiple choice test** |  |
| 4.4. Pests of grape wines  | 4/8 | To know morphology, biology and damage of grape-wine pests and its control | Study theoretical part using text book and lectures notesLaboratory section“Wine- grape pests” |  |  |
| **Total for the first and second semester** | **60/90** |  |  | **70** |  |
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|  **Total****Exam** |  |  |  |  **30** |  |
| **Всього за курс** | **100** |  |

**Evaluation policy**

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|  ***Dedlineas and make-up policy*** | Laboratory sessions that seem to be in breach of dedlineswithout valid reason are evaluated at a lower rating. The modules reassembly occurs with the permission of the lecturer if there are valid reasons (for example, hospital). |
|  ***Academic honesty policy:*** | Cheating during tests using different tools, including mobile devices is strictly prohibbited. Additional Research papers to make-up missing classes should have sufficient references list.  |
|  ***Attendance policy***  | Regular attendance is expected and considered mandatory. Each student is allowed four absences from class for the entire semester without direct penalty to his or her grade (this does not include penalties that may result from missing in-class writings or project deadlines). |

 **Evaluation is based in the following grading scale**

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| **Scale**  |  **National evaluation**  |
| **Final exam** | **Test** |
| 90-100 | Excellent | Passed |
| 74-89 | Good |
| 60-73 | Sufficiently |
| 0-59 | Failed | Not- passed  |