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**Department of Plant Protection**

**College of Agriculture**

**University of Salahaddin**

**Subject: Horticulture insects**

**Course Book – (Year 4)**

**Lecturer's name: Gona Sirwan Sharif / PhD Assistant Lecturer: Noor nadhir polus/ MSc Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Medical and veterinary insect**  |
| **2. Lecturer in charge** | **Gona Sirwan Sharif** |
| **3. Department/ College** | **Plant protection / Agriculture** |
| **4. Contact** | **e-mail: gona.sharif@su.edu.krd****Tel: (optional): 07702155967** |
| **5. Time (in hours) per week**  | **For example Theory: 2** **Practical: 3**  |
| **6. Office hours** | **Monday and Tuesday**  |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | Date of Birth: 17 January 1984Place of Birth: SulaymaniyahNationality: IraqiMarital Status: MarriedSex: FemaleEducation:\*B.Sc., Agriculture Plant Protection, University of Salahaddin-Erbil, 2004-2005)\*M.Sc., Agriculture Science/Plant Protection, University of Salahaddin-Erbil, 29 November 2012\* PhD Economic Entomology, Agriculture Science/Plant Protection, University of Salahaddin-Erbil, 2020Work History:(A) 2020-2021Performing lecturer at plant protection department of agricultural college-University of Salahaddin with following responsibilities:\*Teaching of Medical and veterinary insects for 4th grade college students. \*Horticulture insects for 4th grade college students.\*Member of dormitories committee.\*Member of entomology museum committee.\*(B)2015-2019\*PhD student at plant protection department of agriculture college-university of Salahaddin(C)2012-2015 Performing Assistant lecturer in plant protection department of Agriculture college-university of Salahaddin with following responsibilities;\*Teaching Insect physiology for college 3rd grade students (2012-2013).\* Teaching Field crop insects for college 4th grade students (2013-2014).\*Teaching insect storage for college 4th grade students (2014-2015)\* Member of examination committee 2nd trial (first & second semester on 2012-2013).\*Member of examination committee (2013-2014 semester).\* Member of quality assurance committee in plant protection department (2013-2014).(D)2009-2011M.Sc. student at university of Salahaddin-Erbil(E)2008-2009Performing assistant agricultural engineer at university of Salahaddin-Erbil with following responsibilities;\*Assisting in teaching biological control.\*Assisting in teaching field crop disease.\*Assisting in teaching bee breeding.\*Assisting in teaching medical and veterinary insects.\*Assisting in teaching forest insects.\*Assisting in teaching insect physiology.\*Member of welcoming committee of new students (2008-2009).(F)2006-2008Performing assistant agricultural engineer at university of Sulaymaniyah with following responsibilities;\*Assisting in teaching Insect morphology.\*Assisting in teaching Insect taxonomy.MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS.\*Kurdistan teachers union (2007)\*Kurdistan Agricultural Engineers Syndicate Iraq (2005)Number of published researches: (3)  |
| **9. Keywords** | Orders, Families , Genera and species ,Characters , Life cycle, Medical importance and Control. |
| **10. Course overview:**  The courseis designed to provide students with an overview of pest insects and pest management strategies, emphasizing ecological principles and their applications within the major agro-ecosystems of fruit trees cultivation. Pest insect biology and management of the fruit production systems in temperate regions will be considered, as apple, grape, cherry, plum, peach, strawberry and other small fruit. Specific attention will be given to beneficial insects, biological control and IPM strategies.The course will cover the following topics: Overview on general entomology; Key pest insect species of apple, grape, cherry, plum, peach, strawberry and other small fruit; Synthetic insecticides and Integrated Pest Management; Biological Control, Benefical Insects in Organic Farming and Botanical Insecticides; Pollination Services.  |
| **11. Course objective:**The course entitled “ Horticulture insects ” has been designed with a primary objective of imparting adequate knowledge to students, both in theory and practice, to diagnose a variety of horticultural crop problems related to insect, to comprehend their life histories and damages and to be able to recommend management strategies  |
| **12. Student's obligation**In this part the role of students is as follow: Student Attendance in lecture and examination, preparing reports about some important course subjects, writing an assignment on any field visiting, doing daily quiz, giving samples. |
| **13. Forms of teaching**Teaching methods are, using data show ways, power point, white board, giving hand note.  |
| **14. Assessment scheme**Breakdown of overall assessment and examination25 marks for theoretical part Breakdown of overall assessment and examination, the practical part has 15 marks The marks is divided as follow:5 marks for 1st monthly exam and 5 marks for 2nd 3 marks for daily quiz 2 for reports Final examination 20 practical part, 40 for theoretical part  |
| **15****. Student learning outcome:**Detailed information has been provided on all major pests of crops as regards their taxonomic position, distribution, host range, life history, nature and symptoms of damage, seasonal abundance and their management. However, for minor pests their taxonomic position, nature and symptoms of damage and management have been covered with additional information wherever necessary. Major and minor pests have been differentiated by their text format. |
| **16. Course Reading List and References‌:** Cubero, S., Marco-Noales, E., Aleixos, N., Barbé, S. and Blasco, J., 2020. RobHortic: A Field Robot to Detect Pests and Diseases in Horticultural Crops by Proximal Sensing. Agriculture, 10(7), p.276.Pruthi, H.S., 1969. Textbook on agricultural entomology. Textbook on agricultural entomology.Vänninen, I., Worner, S., Huusela-Veistola, E., Tuovinen, T., Nissinen, A. and Saikkonen, K., 2011. Recorded and potential alien invertebrate pests in Finnish agriculture and horticulture. Agricultural and Food Science, 20(1), pp.96-114. |
| **17. The Topics:** | **Lecturer's name** |
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| Lecturer | Subject | Weeks |
| Dr. Gona Sirwan Sharif |  Detailed Review of some basic terms about Economic entomology.Pests, entomology, economic entomology, characters of Class insecta, , characters contributing to the success of insect and Insects of economic importance.  | 1st |
| = |  Classification of insects Type of insect mouth parts and their metamorphosis  | 2nd |
| = | Identification of Typical Symptoms of Damage by various Phytophagous Insects | 3rd |
| = | Detection and monitoring the insect pests. Pests of Agricultural and Horticultural Crops (General pests | 4th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Apple tree | 5th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Citrus. | 6th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Pomegranate  | 7th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Fig tree. | 8th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Olive tree. | 9th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of stony seed fruit tree. | 10th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Grape vine  | 11th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Vegetable  | 12th |
| = | Identification, distribution, host range, nature of damage, biology and management of insect pests of Tomatoes.  | 13th |
| = |  distribution, host range, nature of damage, biology and management of insect pests of Cucumber | 14th |
| = |  Identification, distribution, host range, nature of damage, biology and management of insect pests of ornamental plants. | 15th |

 | Lecturer's nameex: (2 hrs) |
| **18. Practical Topics (If there is any)** |  |
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| Lecturer | Subject | Weeks |
| Dr. Gona Sirwan Sharif | Definitions of some scientific terms that related with horticulture entomology, metamorphosis and modification of insect mouthparts | 1st |
| = | Classification and separating of horticulture Insects with insects and other arthropods Types of insect larvae and pupae | 2nd |
| = |  Applying of methods of insect pest control, monitoring and inspection | 3rd |
| = |  Identification of Insect Pests of apple and Their Damage Symptoms | 4th |
| = | Identification of Insect Pests of Citrus and Their Damage Symptoms | 5th |
| = | Identification of Insect Pests of Pomegranate and Their Damage Symptoms | 6th |
| = | Identification of Insect Pests of Fig and Their Damage Symptoms | 7th |
| = | Identification of Insect Pests of Olive and Their Damage  | 8th |
| = | Identification of Insect Pests of Stone fruits and Their Damage Symptoms | 9th |
| = | Identification of Insect Pests of Grapevine and Their Damage Symptoms | 10th |
| = | Grape insects (Description, Signs of infestation and Nature of Damage)  | 11th |
| = |  Identification of Insect Pests of Vegetables and Their Damage Symptoms | 12th |
| = | Tomatoes insects (Description, Signs of infestation and Nature of Damage) | 13th |
| = | Insect pests of the family of Cucurbitaceae.  | 14th |
| = | Identification of Insect Pests of Ornamental Plants and Their Damage Symptoms | 15th |

 | **Lecturer's name****ex: (3-4 hrs)** |
| **19. Examinations:*****Compositional***Q1: Define five of the following terms.  Q2: Write the scientific name and the order of the following.

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|  Order |  Scientific name | Common name  |
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Q3: Enumerate the following. Q4: Explain the life cycle, medical importance, Treatments and prevention of … Q5: What are the medical importance of the following. Q6: Multiple choice  |
| **20. Extra notes:**The student in this course must visit fields and the places which damaged by these pests. |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ** * Borrer , D.J and Delong , D. ( 1954 ) . An Introduction to the study of insects . Holt , Rinehart and Winston New york.
* •Mullen, G. L., and Durden, L. A., eds. 2002. Medical and Veterinary Entomology, Academic Press, NY.
* Service, M. 2008. Medical Entomology for Students 4th Edition Cambridge University Press
* H:\biology\Diptera.htm
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