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**Department of: Forestry**

**College of : Agricultural Engineering Science**

**University of : Salahaddin-Erbil**

**Subject : Forest Entomology**

**Course Book : 2nd Year Student**

**Lecturer's name: Assist.Prof.Dr. Abdulbaset M. Amin**

**Academic Year : 2023/2024**

**Course Book**

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| **1. Course name** | **Forest Entomology-Second semester/ Spring Semester** | |
| **2. Lecturer in charge** | **Abdulbaset M. Amin Mohammed\ Assist.Prof.** | |
| **3. Department/ College** | **Forestry, College of Agricultural Engineering Science** | |
| **4. Contact** | **e-mail:**[**Abdulbaset.Mohammed@su.edu.krd**](mailto:Abdulbaset.Mohammed@su.edu.krd)  **Tel: 07700435560** | |
| **5. Time (in hours) per week** | **Theory: 2**  **Practical: 3** | |
| **6. Office hours** |  | |
| **7. Course code** | **-** | |
| **8. Teacher's academic profile** | B. Sc. In Science College (Biology), Sulaimani University. Sulaimany. 1981. MSc. in Entomology, Honey bee classification-Science College- Salahaddin University. Erbil. Ph.D. in Insect Biology –Ebin-Alhaethem College –University of Baghdad 2000.Title of M.Sc. Thesis:  Morphometric Studies on the Honey bees *Apis mellifera* of the Northern Iraq area. 1991.Title of Ph.D. Thesis: Seasonal Occurrence of the Sunn Pest *Eurygaster integriceps* Puton with Remarks On its Natural Enemies in Erbil- Iraq .2000. Lecturing different subjects in Biology, Plant Protection, Plant Production, Agroforestry, and Horticulture department for under students, Salahaddin University-Erbil. In 2015 - till now The Head of Horticulture Department of the College of Agriculture – Salahaddin University. Teaching Experience: | |
| **9. Keywords** |  | |
| **10. Course overview:**  In addition to the major pests of forest trees, there are many kinds of insects that live in forests without occurring in damaging numbers. However, a few may develop occasionally into serious local infestations. Since both major and occasional pests tend to be cyclic and often scattered, ongoing surveys and monitoring by trained foresters are an essential part of forest pest management. Early detection of pests is essential to the prevention of economic losses due to serious outbreaks.  Sound forest management practices are basic to effective integrated pest management. Proper site selection, stand density control, stand and tree vigor and proper sanitation are among the most important. Under poor management and inadequate protection practices, salvage operations may be the only recourse. Pesticide applications may be utilized for the prevention of potential insect population buildup and suppression of outbreaks that threaten the vigor as well as the survival of trees. However, use of pesticides is not recommended without knowledge of pest status. Use pesticides only if pests are present or are predicted to be present from a standard or systematic sample survey. They should be used in settings where compatible with management and of limited risk to the environment.  Technical assistance is available from the Virginia Department of Forestry and the U.S. Forest Service, as well as the Virginia Cooperative Extension Service. State and federal forestry agencies may provide control services on a cost-sharing basis as well as survey and detection programs in cooperation with public and private forest land owners. Control programs for new, introduced, or as yet not established pests such as the gypsy moth are conducted by the Bureau of Plant Protection and Pesticide Regulation of the Virginia Department of Agriculture and Consumer Services with the Cooperation of the Animal and Plant Health Inspection Service, the USDA, the US Forest Service, the Virginia Department of Forestry, and Virginia Cooperative Extension.  Internet resources on forest insect pests:  In the beginning as a source of energy or a hunting habit, for commensalism affairs. Some countries that never plan for a forest future should lose a lot of natural source products. The important factor that takes part in forest disturbance by neglect of the forest as prey to enemies. A high percentage of work is being spent on planting the forest for concentrate to protect it from enemies in case of pests, disease, and fire. For example, Craft, 1958 communicated that the losses in USA forests as a result of insect injuries were twice in loss which was produced by plant disease, and seven times by fire. | | |
| **11. Course objective:**  **The main aim of this important subject is to maintain our great forests for our people and visitors and resolve most forest problems in Kurdistan.** | | |
| **12. Student's obligation**  The student has to prove their presence in the lecture by taking the percentage of attendance by me and be prepared in every lecture for the weekly course and the form of attending a report at the end of the term on relevant lessons and lectures taken by the students subject and in the end are the student’s exam monthly and final exam. | | |
| **13. Forms of teaching**  The use of the following methods in the teaching process:   1. Data Show 2. Presentation 3. Coursebook 4. Whiteboard. | | |
| **14. Assessment scheme**   |  |  |  | | --- | --- | --- | | Assignment | Point Each | Total Points | | cuisse | 1 | 5 | | Exams #1, #2 | 20 | 20 | | Lab Base | 10 | 10 | | Lab cuisse | 1 | 5 | | **Total** |  | **40** |   ‌ | | |
| **15. Student learning outcome:**   1. Helping the students in acquiring the required skills. 2. Easy to do very rapid prototyping 3. Quick to learn, and good documentation 4. A good library of image-processing functions 5. The student learns how to get accurate results and their use in matters concerning the market. 6. Students learn programming and agriculture engineering in a way. 7. Students learn the difference between different forest tree pests. | | |
| **16. Course Reading List and References‌:**  Useful references:  Principles of Forest Entomology, Graham S.A.  2- Insects that feed on Colorado trees and Shrubs Whitney Cranshaw, David  Leatherman and Boris Kondratieff.  3- Field Guide to Insects and Diseases of Arizona and New Mexico Forests,  Joel McMillin, Terry Rogers, Dave Conklin, and Bobbe Fitzgibbon.  4- Field Guide to diseases and insects Rocky Mountain Region, Kurt K.  Allen James T. Blodgett and Kelly S. Burns | | |
| **17. The Topics:** | | **Lecturer's name** |
| 1st Week :  The insect body structure in this lecture is divided into two parts:  A-External Morphology.  B-Internal structure. | | Abdulbaset M.Amin  2hrs  24/01/2024 |
| 2nd Week:  **-**The relationship between humans and the forest.  -Developmental stages of forest entomology. | | Abdulbaset M.Amin  2hrs  31/01/2024 |
| 3rd Week:    -Effect of insects on forest  -Developmental stages of forest trees in association with the insect invasion. | | Abdulbaset M.Amin  2hrs  07/02/2024 |
| 4th Week:  -Injuries caused by insects in the forest.  -Insect infestation about tree growth.  - The forest is a place of picnics.  - Conservation and protection of the forest soil.  -Insect and Ecology. | | Abdulbaset M.Amin  2hrs  14/02/2024 |
| 1st monthly Examination  5th Week:    -Reproductive potential depends on several factors.  - Environmental Resistance.  -Biotic factors.  -The insects and outbreak. | | Abdulbaset M.Amin  2hrs  21/02/2024 |
| 6th Weak:    -Evaluation of infestation.  -The survey of forest insects.  -Survey of insects in Large areas. | | Abdulbaset M.Amin  2hrs  28/02/2024 |
| 7th Week:  -Methods for controlling the insects.  -Reasons for insect resistance.  -How to protect the mature trees | | Abdulbaset M.Amin  2hrs  06/03/2024 |
| 8th Week:  The insect is controlled by law.  -Quarantines.  - Direct control.  -Biological control. | | Abdulbaset M.Amin  2hrs  13/03/2024 |
| 2nd monthly examination  9th Week:  The insect orders.  -the type of Aphids.  -The Gall aphids.  -Poplar leaf aphid.  -Wooly apple aphids.  -The Cicada.  -Oak leaf aphids.-*Chromaphes juglandica* kalt. | | Abdulbaset M.Amin  2hrs  20/03/2024 |
| 10th Week:    -Types of plant bugs.  -Poplar branch lace bug.  -Types of mealy bug. | | Abdulbaset M.Amin  2hrs  27/03/2024 |
| 11th Week:  -Poplar scale insect.  -The oriental yellow scale (Citrus scale).  -Wax insect.  -*Euproctis melania*. | | Abdulbaset M.Amin  2hrs  03/04/2024 |
| 12th Week:  -Gypsy moth.  -*Epinotia trimaculata* Den.  -Southern Apple worm.  -Roots poplar beetle.  -Poplar leaf beetle.  -Leaf curl psyllid. | | Abdulbaset M.Amin  2hrs  10/04/2024 |
| 13th Week:  -Gall leaf poplar psyllid.  -Gall branches poplar psyllid.  -Olive psyllid.  -Pinus bud weevil. | | Abdulbaset M.Amin  2hrs  17/04/2024 |
| 14th lecture  -Pistachio bark beetle.  -Oak fruit moth.  -Gall Oak Wasps. | | Abdulbaset M.Amin  2hrs  24/04/2024 |
| 15th lecture  -Types of bark beetles.  - *Dendractonus frontalis* | | Abdulbaset M.Amin  2hrs  08/05/2024 |
| **18. Practical Topics (If there is any)** | |  |
| ***Course overview:***  All the practical lectures applied in the laboratory | | Assistant lecturer: Hero Mohiuddin  (3 hrs.)  23/01/2024 To  08/05/2024 |
| **19. Examinations:**  The examination :  The examination manner is as follows:  Q1/Define the following.  Q2/What is the justification for the following?  Q3/ Draw and fully labeled.  Q4/ Explain the……...  Q5/ Mention the functions of.  Q6/ Compare between.  Q7/Answer with True or False.  Q8/Complete the following sentences. | | |
| **21. Peer review.** | | |