****

**Department of Field Crops**

**College of Agricultural Engineering Sciences**

**University of Salahaddin**

**Subject: Technology of crop insect control**

**Course Book – (Year 4)**

**Lecturer's name Dr.Nawzad B. Kadir**

**Academic Year: 2022/2023**

**Course Book**

|  |  |
| --- | --- |
| **1. Course name** | **Field Crops Insects** |
| **2. Lecturer in charge** | **Dr. Nawzad B. Kadir** |
| **3. Department/ College** | **Field crops/ Agricultural Engineering Sciences** |
| **4. Contact** | **e-mail: nawzad.kadir@su.edu.krd****Tel: 07504482196** |
| **5. Time (in hours) per week**  | **For example Theory: 2** **Practical: 3**  |
| **6. Office hours** | **Availability of the lecturer to the student during the week** |
| **7. Course code** |  |
| **8. Teacher's academic profile**  | I have obtained Bachelor degree in the department of Biology, college of Education, University of Mosul in 1991. Since 1997 worked in the college of agriculture as a lab assistant. In 2002 graduated obtaining M.Sc. Degree in the field of Entomology. In 2014 awarded PhD from the University of Plymouth, School of Biosciences. (Plant mediated effects of Earthworms on aphid dynamic).I'm a lecturer staff at Plant protection Dept. Agricultural Engineering Sciences college. -member in Biology Society\ Kurdistan-Member in Royal Entomology Society\UK-Member in Soil Ecology Society\USAI have participated as a member in more than 20 Scientific Discussion committees |
| **9. Keywords** |  |
| **10. Course overview:** Entomology is the science which study insects (Morphology, taxonomy, physiology, ecology..ect).Economic Entomology: The science which study insects that negatively influence on plants (Bite the leaves, cut the root, borrow in the stem, attack the fruits, suck cell juices, ect..)Different insects from different orders have an effect on crops. And the type of injury depends on the mouthparts of insects. So It's very important for students to know the mouthparts of each orders, also studying the life cycle of insects in order to get information about the stage of insects that cause the damage to plant. These information will support their knowledge in term of controlling the insects and decreasing their damagesStudents will be familiar with the structure of mouthparts, distribution and the host plants of each insectsThe relationship or interaction between insects and plants depends on the structure and chemical changes in the plant, some insects defence themselves against insects by producing seta or hair on the leaves or stems of the plant, some insects produce chemical substance to prevent themselves from the attack of insects. By the end of this course the student will be familiar with the insects of different crops, their distribution, life cycle and different methods of controlling. |
| **11. Course objective:**The current course aims to:1-Students learn how to recognize field crop insects.2-Students will have knowledge about the direct and indirect effects of insects on plant.3-Student will learn kinds of damages caused by insects.4-Studying the distribution and host plants of each insect.5-Learning how to collect insect pests. 6- Learning how to control crop pests. |
| **12. Student's obligation**The student must have an important role:1-The students must contribute in the scientific discussions in the class or teaching hall.2-The students must know the importance of quizzes, homework, reports and exams. It is necessary to contribute the student in presenting a scientific subject |
| **13. Forms of teaching**There are different forms of teaching:1-Datashow and power point.2- White board.3-Lectures. |
| **14. Assessment scheme**‌ The course degree was divided as follow %50 of monthly exam , %15 for theoretical part 35 for practical part in theoretical part 10 marks for the monthly exam , 5 marks for daily quiz and preparing reports Final exam takes %50 for theory  |
| **15. Student learning outcome:**Course outcomes should clearly relate to topics, assignments, and exams that are covered in the present course. Course outcomes should be clear, measurable, use verbs (e.g., identify, explaination) |
| **16. Course Reading List and References‌:**1-Cloyd, R. A., Nixon, P. L., and Pataky, N. R. (2004). IPM for gardeners A guide to itegrated pest management. Timber Press, 191pp2-Horowitz, A. R., and Ishaaya, I. (2004). Biorational insecticides- Mechanisms, Selectivity and Importance in pest management. Springer-Verlag Berlin Heidelberg.3-Luff, M. L. (2007). The carabidae, ground beetles of Britain and Irland. Royal Entomology Society, 213pp.4- Parker, B. I., Bouhssini, M and Shinner, M. (2001). Field guide insect, International center for Agriculture Research in the Dry Areas, Aleppo, Syria, 120pp.4-White, R. E. (1983). A field guide to the beetles. New York. 368pp |
| **17. The Topics:** | **Lecturer's name** |
| 1st week Introduction, the importance of insects, metamorphosis and immature stages of insects.2nd week. The damages of insects to crops.3rd week. The differences between mouthparts of insects4rd week Cereal crop insects. 5th week Cereal crop insects.6th week Cereal crop insects7th week Insects of Leguminous.8th week Insects of Leguminous.9th week Insects of Leguminous.10th week Insects of industrial crops (cotton insects)11th week Insects of industrial crops (cotton insects)12th week Insects of industrial crops (Sugar beet insects) 13th week Insects of industrial crops (Sugar beet insects)14th week Insects of industrial crops (Oil crops insects)15th week Insects of Stimulants crops 16th course review | Lecturer's nameex: (2 hrs)ex:  |
| **18. Practical Topics (If there is any)** |  |
| In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture  | Lecturer's nameex: (3-4 hrs)ex: 14/10/2015 |
| **19. Examinations:*****1. Compositional:*** In this type of exam the questions usually starts with Explain how, What are the reasons for…?, Why…?, How….?With their typical answersExamples should be provided***2.******True or false type of exams:***In this type of exam a short sentence about a specific subject will be provided, and then students will comment on the trueness or falseness of this particular sentence. Examples should be provided***3. Multiple choices:***In this type of exam there will be a number of phrases next or below a statement, students will match the correct phrase. Examples should be provided. |
| **20. Extra notes:**Here the lecturer shall write any note or comment that is not covered in this template and he/she wishes to enrich the course book with his/her valuable remarks. |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ** ‌‌I agree that the course covers all aspects of the scientific subjectDr. Khalid Qadir  |