



Department of Biology

College of Education

University of Salahaddin

Subject: General Entomology

Course Book – (Year 3)second semester

Lecturer's name: Wand Khalis Ali , PhD

Academic Year: 2023/2024

Course Book

1. Course name	Medical Entomology
2. Lecturer in charge	Dr.Wand Khalis Ali
3. Department/ College	Biology-Education
4. Contact	e-mail: wand.ali@su.edu.krd Tel: (optional) 07504899859
5. Time (in hours) per week	2 h (for each group) Practical: 3h
6. Office hours	Wednesday 8.30am – 10.30am 10.30 – 12.30pm (two group A,B) or by appointment
7. Course code	BE340
8. Teacher's academic profile	<p>First assignment in the University as assist Lecturer. Biology Dept. was at 17/4/1996.</p> <p>2007 awarding Ph D. Zoology (Insects Taxonomy) / Department of Biology- College of Science –Baghdad University-Baghdad, Iraq.</p> <p>1996 awarding M Sc. Entomology (Insect Biology) / Department of Biology - College of Science – Salahaddin University-Erbil, Iraq.</p> <p>1993 awarding B Sc. Biology/ Department of Biology– College of Science - University of Salahaddin – Erbil Iraq.</p> <p>You can follow me at: https://www.researchgate.net/profile/Wand_Ali3</p>
9. Keywords	
10. Course overview:	<p>The importance of the role played by insects in the world of living things is becoming more appreciated each year not only because of the attention given to the species which act as pests, but because of the increasing realization that insects play many important roles in transmitting the diseases , its worthy to study them in this line</p> <p>The study of insects is an important part of the training of every biology teacher, and student of nature.</p> <p>This course is intended to serve as a guide for students and others interested in the study of insects and will help to begin a fascinating study, insects should be observed and studied in the field as well as in the classroom and laboratory so this course will involve field and laboratory work and will give students a better understanding of the medical important role of insects.</p>
11. What is the main purpose for this course?	<p>This course is offered to teach students the following concepts:</p> <ul style="list-style-type: none"> - The relation between humans, animals, arthropod and non – arthropod pests of medical and veterinary importance, and their role on public health. - Role of arthropods of medical and veterinary importance in disease transmission to humans and animals; and their control. <p>The relation between poisonous pests and environmental health.</p>

12. Course objective:

It is very necessary that biologist students have basic information about such a huge group of organisms(insects) and some of the main objectives in this course should be as follow:

1-students learn how to recognize insects from their relatives depending on the general structure of insects and their life cycle. (Know the basic form and structure (morphology)

2- The advantage and disadvantage of insects to man and their role in the environment its necessary that student try to make connections with their knowledge) Demonstrate an ability to apply graduate coursework in an area of specific professional or personal interest to the student.)

3-students should be familiar with terms, abbreviations, figures and scientific names ...etc. used in this subject. (Demonstrate a command of entomological knowledge and scientific principles.)

4- Studying the development and general information's about their biology, behavior, anatomy and physiology.

5-understanding the basic principle of insects borne diseases and their classification

6- be familiar with each medical important insect order samples

13. Student's obligation

Students will be asked to prepare research papers on selective topics. There will be classroom discussions and the lecture will give enough background to evaluate problems sets, and different issues discussed throughout the course. To get the best of the course, it is suggested that you attend classes as much as possible, read the required lectures, teacher's notes regularly as all of them are foundations for the course. Lecture's notes are for supporting and not for submitting the reading material including the handouts. try as much as possible to participate in classroom discussions, preparing the assignments given in the course. using exams, a laboratory practical and an insect collection. students will become comfortable working with and handling live and/or pinned insects, identifying basic insect structures, performing dissections, collecting insects in the field and identifying specimens to the level of Order.

14. Forms of teaching

Different forms of teaching will be used to reach the objectives of the course: 'power point presentations for the head titles and definitions and summary of conclusions, classification of materials and any other illustrations.

15. Assessment scheme

Basis for Student Grades:

mid-term lecture exams at 50%	50%
Reports	25%
quizzes and other activities	25%
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Total	100%

For the final grade, the grades will be converted to Average of 13% and the practical degree will be added which is in 27%, and the total final effort mark will be on 40%. Students who miss one or no lectures will receive 2% . Students who attend all but miss 2 lectures will receive 1%. Missing 3 lectures will result in no points and no subtraction of points. Excused absences are considered the equivalent of attendance; absence is excused if it is the result of a conflict for another class or university event (communicated in advance) or caused by an illness (physician's statement required) or family emergency. Those who register late will be excused from early absences. Attend class. Doing so is a key part of learning and will be reflected in your grade.

16. Student learning outcome:

- Recognize a brief history of arthropods of medical and veterinary importance, their classification
- List insects related to human and animal hygiene and the role of arthropods in pathogens transmission
- Differentiate between representative orders of medical and veterinary importance
- Be able to identify the potential impact of different insect species on human health, and society in general; to be knowledgeable about potential control strategies.
- Explain different ways for control of medical and veterinary pests.

17. Course Reading List and References:

- Key references: entomology, insect ,class hexapoda
- Useful references:

Some textbooks that should be depended:

1-Gillott,C.(2005)Entomology.Third edition.Springer,netherland.834P.

2-Imms,A.D.(1970)A general Textbook of Entomology. Ninth edition, London: Methuen & Co LTD.886P.

3- Eldridge B.F., Edman J.D. (2000) Introduction to Medical Entomology. In: Eldridge B.F., Edman J.D. (eds) Medical Entomology. Springer, Dordrecht. https://doi.org/10.1007/978-94-011-6472-6_1

5- توفيق, محمد فؤاد(1976) علم الحشرات العام. الطبعة الرابعة, دار المعارف بمصر. 490 صفحة

18. The Topics:	Lecturer's name
<p>Week 1 Course book introduction ,What is an insect, what is Entomology, with its disciplines</p> <p>Week 2 Introduction of medical entomology , , general characteristics of insects. And the classification of insects</p> <p>Week 3 Completing the remain lessons of the classification of insect and the major medical important insect orders</p> <p>Week 4 Medical Entomology defining of the medical entomology and clarify its importance</p> <p>Week 5 - insects Transmission of Vertebrate Parasites (Methods of Transmission Disease Agents by insects)</p> <p>Week 6 - Management of insect Diseases by Vector Control Prevention and Control of insect Diseases</p> <p>Week7 1 Types of myiasis 2 Classification of flies 3 Calliphoridae: non-metallic flies</p> <p>Week8 .4 Calliphoridae: metallic flies .5 Sarcophagidae: flesh-flies 6 Oestridae: bot-flies 7 Other myiasis-producing flies</p>	<p>Wand Khalis Ali</p>

Week9

mosquitoes

1.1 External morphology of mosquitoes

1.2 Life cycle

1.3 Classification of mosquitoes

1.4 Mosquito control

Week10

Medical importance of mosquito , Malaria and the role of mosquito

Week11

Mid term exam

Week12

Cockroaches

1 External morphology

2 Life cycle

3 Medical importance of cockroaches

Week13

Fleas

1 External morphology

2 Life cycle

3 Medical importance of fleas

Week14

Lice

1 External morphology

2 Life cycle

3 Medical importance of lice

Week15

Bugs (bedbugs and triatomine bugs

1 External morphology

2 Life cycle

3 Medical importance of lice

19. Practical Topics	
contact with responsible assistant lecturer	
20. Examinations: 1.Compositional: Q1/ why insects are the most diverse and abundant of all groups of arthropods? Q2/ How insect transmitted diseases? Q3/ What are the important distinguishing features of insects? 2. True or false type of exams Q/Answer these statements with (T) or (F) letter and correct all the false ones: 1-Three pairs of jointed leg regarded as one of the main important character of the phylum arthropods? 2-medical Entomology is the study of honey bees and honey production and marketing? 3-Insects considered highly successful due to its molting? 4-Some insects are important vectors of human disease? 5-Insects are the most important animal pollinators? 3. Multiple choices: Q/choose the correct answer: 1-External openings in the insect integument that allow entry of air into insect tracheae are called A)Taenidia B)Tracheole C)Spiracle D) Atrium 2- In which of these orders adult insect not feeding A) Dermaptera, B) Thysanura C) Collembola, D) Ephemeroptera 3- Which of the following is true about the insect circulatory system? A. The circulatory system delivers oxygen and removes carbon dioxide. B. It is an “closed” circulatory system. C. It is comprised of a ventrall heart and anterior aorta. D. Insect “blood” is called hemolymph.	

4- The genital segments involve the segments from

A) 8-9

B) 1-7

C) 10-11

D) all of them

5-The main function of the claspers

A) Eat food

B) Mate

C) Escape from enemies

D) Grasp the female

(10 mark)

21. Extra notes:

22. Peer review

پیداچوونەوێ هاون

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching; he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

ئەم کۆرسبووکە دەبێت لەلایەن هاونێکی ئەکادیمیەوه سەیر بکەیت و ناوەڕۆکی بابەتەکانی کۆرسەکە پەسەند بکات و جەند ووشەیەک بنووسێت لەسەر شیاوی ناوەڕۆکی کۆرسەکە و واژووێ لەسەر بکات. هاونێ ئەو کەسەیە کە زانیاری هەبێت لەسەر کۆرسەکە و دەبێت پلەێ زانستی لە مامۆستا کەمتر نەبێت.