##

**Department of plant protection**

**College of Agriculture**

**University of Salahaddin**

**Subject: Medical Entomology**

**Course Book (Year 4)**

**Lecturer's name: Prof. Dr. Nabeel Abdul Kadir Mawlood**

**Assistant Lecturer : Noor Nadhir Polus**

**Academic Year: 2018 /2019**

**Course Book**

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| **1. Course name** |  **Medical Entomolgy** |
| **2. Lecturer in charge** | **Nabeel Abdul Kadir Mawlood****Noor nadhir polus** |
| **3. Department/ College** | **plant protection/ Agriculture**  |
| **4. Contact** | **e-mail: nabeel.mawlood@su.edu.krd** **Nabeel\_akm57@yahoo.com** **Tel: (optional) : 07503706215****e-mail:** **Noor.kunda@su.edu.krd****Tel: 07504676885** |
| **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**A. Undergraduate students

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| Stage | Subject | No. |
| 2nd Year | Insect Structure  | 1 |
| 2nd Year | Insect Taxonomy | 2 |
| 4th  Year | Medical Entomolgy | 3 |

B. Postgraduate students

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| Stage | Subject | No. |
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| **7. Course code** |  |
| **8. Teacher's academic profile**  | * Date of Birth: 2 / 5 / 1957
* Sex: Male
* Nationality: Iraqi
* Marital Status: Married

 Address: Rasti Q. -Erbil –Kurdistan Region-Iraq Telephone : 00964 750 370 6215 E-mail: Nabeel\_akm57@yahoo.com ; nabeel.mawlood@su.edu.krd Certifications :* B.SC : College of Agriculture ,Mosul University/ Iraq (1980) .
* M.Sc. : College of Agriculture ,Baghdad University /Iraq (1985)

Taxonomic study of the beetles Family Dermestidae ( Insecta : Coleoptera ) in Baghdad University Iraq(1985) .* PhD. : College of Agriculture ,Baghdad University/Iraq(2001)

Taxonomic study of the blowflies ( Diptera : Calliphoridae) in middle of Iraq . / Baghdad University (2001). General Specialty : Agriculture –Plant ProtectionSpecialty : Entomology ( Insects Taxonomy ) Dipterology Job TitleProfessor in Department of Plant protection / College of Agriculture / Salahaddin UniversityScientific Titles

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| --- | --- |
|  Title |  Date |
|  Assistant Lecturer |  1986 |
|  Lecturer |  1990 |
|  Assistant Professor |  1994 |
|  Professor |  2002 |

Description of Main Duties & Responsibilities:* Head of Community Health Department / Technical Institute - Baquba / Diyala / 1997
* Head of Biology Sciences Dept. / College of Education - University of Diyala /2005
* Chairman of the Scientific Promotion Committee in College of Science/ Diyala University / 2004 – 2007
* Member of the Central Committee of Promotions - University of Diyala , 2003 - 2005
* Secretary Editor of Diyala Journal - College of Education, University of Diyala, 2005-2006
* Editor of Diyala journal - College of Education / University of Diyala / 2006 -2007
* Editor of the Al- Yarmouk University Journal / University of Diyala / 2006 -2007
* Member of the examination Committee for Graduate Studies - College of Agriculture - University of Salahaddin 2008 -2009
* Member of scientific Committee in the College of Agriculture, University of Salahaddin / 2009 -2018
* Member of scientific committee in the Department of Plant Protection ,College of Agriculture, University of Salahaddin / 2009 -2018
* Chairman of the Quality Assurance Committee in the College of Agriculture - Salahaddin University / 2009 – 2010
* Member of the Joint Committee of Higher Education (Board) - University of Dohuk College of Agriculture from 2010 to 2011
* Member of the Quality Assurance Committee in the plant protection department of College of Agriculture - Salahaddin University / 2010 - 2011

MEMBERSHIP OF PROFESSIONAL ASSOCIATION:* Member of the Syndicate of Agricultural Engineers / Baghdad -1980
* Member of the Association of Agricultural Engineers of Baghdad , 1980
* Member of the Association of Agricultural Engineers of Erbil , 2008
* Member of Teachers Syndicate / Erbil -1986

Number of published researches : More than ( 90 )Numberof MSc and PHD students : ( 26 )* Date of Birth: 8 / 10/ 1985
* Sex: female
* Nationality: Iraqi
* Marital Status: Married

 Address: new azadi -Erbil –Kurdistan Region-Iraq Telephone : 00964 750 4676885 E-mail: Noor.kunda@su.edu.krd Certifications :B.SC : College of Agriculture , Plant Protection Department Salahaddin University/ Erbil/ Iraq* 2006-2007

M.Sc. : College of Agriculture, Plant Protection Department , Salahaddin University/ Erbil/ Iraq* 2014.

 General Specialty : Agriculture –Plant Protection Department Specialty: Entomology (Plant Protection) ;Medical entomology .Job TitleAssistant Lecturer in Department of Plant protection / College of Agriculture / Salahaddin University . |
| **9. Keywords** | **, Orders , Families , Genera and species ,Characters , Life cycle, Medical importance and Control**  |
| **10. Course overview:**  The discipline of **medical entomology**, or **public health entomology**, and also veterinary entomology is focused upon [insects](https://en.wikipedia.org/wiki/Insect) and [arthropods](https://en.wikipedia.org/wiki/Arthropod) that impact human health. Veterinary entomology is included in this category, because many animal diseases can "jump species" and become a human health threat, for example, bovine encephalitis. Medical entomology also includes scientific research on the behaviour, ecology, and [epidemiology](https://en.wikipedia.org/wiki/Epidemiology) of arthropod disease [vectors](https://en.wikipedia.org/wiki/Vector_%28epidemiology%29), and involves a tremendous outreach to the public, including local and state officials and other stake holders in the interest of public safety, finally in current situation related to one health approach mostly health policy makers recommends to widely applicability of medical entomology for disease control efficient and best fit on achieving development goal and to tackle the newly budding zoonotic diseases. Thoughtful to have and acquaint with best practice of Med. Entomologist to tackle the animal and public health issues together with controlling arthropods born diseases by having Medical Entomologists’ the right hand for bringing the healthy world .This course is a general introduction to medical entomology with an emphasis on insect diversity. Lectures provide an basic characters , habits, morphology, medical importance life cycle , prevention and control . |
| **11. Course objective:**Entomology is the science that studies insects and arthropods. In the case of medical entomology, it specifically refers to those insects and arthropods that affect human beings and may produce human disease. This complex science comprises the biomedical study of insects and arthropods and their morphology, biology, and systematics. The main objective of Medical Entomology are:1.Describe the different types of medically related effects caused by arthropods (direct and indirect) 2. Define the terms associated with disease transmission 3. Describe the family , genera and the species with the characteristics of the diseases.4. study of life cycle of the insect and the pathogens5. Listing the prevention and the control of the insect and the pathoges  |
| **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 The marks is divided as follow :10 marks for 1st monthly exam and 10 marks for 2nd 3 marks for daily quiz 2 for reportsFinal examination 20 practical part , 40 for theoretical par15 marks for practical part The marks is divided as follow :10 marks for 1st monthly exam.2 marks for daily quiz 2 for sample 1 for reports |
| **15. Student learning outcome:**Be sufficiently knowledgeable about the basic medical importance of insects that you can explain it to and discuss it with other entomologists, non-entomological scientists, fellow students, first graders, and the general public., … have developed an extensive new vocabulary of terms related to insect anatomy and morphology that will allow you to read the descriptive scientific literature of entomology with considerable understanding. ,… be familiar enough with the fundamental medical importance of insects.  |
| **16. Course Reading List and References‌:**▪ <https://insects.tamu.edu/students/undergrad/ento305/index.html>;**\*http://www.entsoc.org/Pubs/Periodicals/JME/index.htm****\*https://en.wikipedia.org/wiki/Medical\_entomology** |
| **17. The Topics:** | **Lecturer's name** |
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| **Lecturer** |  **Subject**  |  **Weeks**  |
| **Prof. Dr. Nabeel Abdul Kadir Mawlood** | **Introduction to medical entomology** **Medical importance of insects**  | **1st**  |
|  **=** | **Phylum Arthopoda ; Arthropoda cause and carry disease , Medical pests ;**  |  **2nd**  |
|  **=** | **Insects Mouthparts ; Order Dictoptera , Cockroaches , medical importance , life cycle , control**  | **3rd**  |
|  **=** | **Order Anoplura ,Sucking lice , General characteristics , medical importance , life cycle , control** | **4th**  |
|  **=** | **Order Mallophaga ,Chewing lice ,General characteristics , medical importance , life cycle , control** | **5th**  |
|  **=** | **Order ,Hemiptera , General characteristics , medical importance of Families Reduviidae ; Cimicidae , life cycle , control****Order : Coleoptera , General characteristics , medical importance of Family Meloidae , life cycle , control** | **6th**  |
|  **=** | **Order Siphonoptera , General characteristics , medical importance , life cycle , control** | **7th**  |
|  **=** | **Order Diptera , General characteristics , medical importance of Mosquito , Family Culicidae ,m *Anopheles* sp. *Culex* sp. , *Aedes* sp. life cycle , control**  | **8th**  |
|  **=** | **Order Diptera , medical importance of Sand fly , Family Philotominidae , *Philobotomus* sp*.* life cycle , control** | **9th**  |
|  **=** | **Order Diptera , medical importance of Black fly , Family Simiulidae , *Simiulium* sp. life cycle , control** | **10th**  |
|  **=** | **Order Diptera , medical importance of Tse Tse fly , Family Glossinidae *. Glossina* sp. life cycle , control ; medical importance of Horse fly , Family Tabanidae , *Tabanus* sp*.*  life cycle , control**  | **11th**  |
|  **=** | **Order Diptera , medical importance of Family : Muscidae , *Musca domestica*  ; medical importance of Doge fly , Hippoboscidae , *Melophagus ovinus* , life cycle , control ,**  | **12th**  |
|  **=** | **Order Diptera , medical importance of blow fly , Family Calliphoridae , *Chrysomya* *bezziana* ,*.* life cycle , control ; medical importance of Flesh fly , Family Sarcophagidae , *Sarcophaga* sp., W*ohlfahrtia* sp. life cycle , control**  | **13th**  |
|  **=** | **Order Diptera , medical importance of Family Oestridae , *Oestrus ovis* , G*astrophilus intestinalis* , life cycle , control ; Myiasis in human and animals .** | **14th**  |
|  **=** | **Class Archnidae , Ticks and Mites , General characteristics , medical importance of hard tick , Ixodidae , Soft tick , Argasidae , Sarcoptidae , life cycle , control** |  **15th**  |

 | Lecturer's nameex: (2 hrs)ex: /12/2018 |
| **18. Practical Topics (If there is any)** |  |
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| **Assistant lecturer Noor nadhir polus** | **Introduction to medical entomology**  |
|  **=** | **Insects Mouthparts ; Order Dictoptera , Cockroaches , morphology, medical importance**  |
|  **=** | **Order Anoplura ,Sucking lice , General characteristics , medical importance**  |
|  **=** | **Order Mallophaga ,Chewing lice ,General characteristics , medical importance**  |
|  **=** | **Order ,Hemiptera , General characteristics , medical importance of Families Reduviidae ; Cimicidae** **Order : Coleoptera , General characteristics , medical importance of Family Meloidae l** |
|  **=** | **Order Siphonoptera , General characteristics , medical importance**  |
|  **=** | **Order Diptera , General characteristics , medical importance of Mosquito , Family Culicidae ,m *Anopheles* sp. *Culex* sp. , *Aedes* sp**  |
|  **=** | **Order Diptera , medical importance of Sand fly , Family Philotominidae , *Philobotomus* sp** |
|  **=** | **Order Diptera , medical importance of Black fly , Family Simiulidae , *Simiulium* sp.**  |
|  **=** | **Order Diptera , medical importance of Tse Tse fly , Family Glossinidae *. Glossina* sp. ; medical importance of Horse fly , Family Tabanidae , *Tabanus* sp*.***  |
|  **=** | **Order Diptera , medical importance of Family : Muscidae , *Musca domestica*  ; medical importance of Doge fly , Hippoboscidae , *Melophagus ovinus***  |
|  **=** | **Order Diptera , medical importance of blow fly , Family Calliphoridae , *Chrysomya* *bezziana* ,*.* ; medical importance of Flesh fly , Family Sarcophagidae , *Sarcophaga* sp., W*ohlfahrtia* sp** |
|  **=** | **Order Diptera , medical importance of Family Oestridae , *Oestrus ovis* , G*astrophilus intestinalis* ; Myiasis in human and animals .** |
|  **=** | **Class Archnidae , Ticks and Mites , General characteristics , medical importance of hard tick , Ixodidae , Soft tick , Argasidae , Sarcoptidae ,**  |

 | Lecturer's nameex: (3-4 hrs)ex: /11/2018 |
| **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** Practical: **Question sample:**1. Draw the following.
2. Fill the blanks.
3. **Mention medical importance of following**
4. **Compare between the following.**
5. **Define the following**
6. **Enumerate the following**
7. Identify the following ,write scientific name, family and order.
 |
| **20. Extra notes:** |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ** 1. 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.‌‌  |