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| --- | --- | --- |
| EXC-01-02-02A | **Form Number** | **Form:**  **Course Syllabus** |
| 2963/2022/24/3/2  5/12/2022 | **Issue Number and Date** |
| 2/(10/12/2023) | **Number and Date of Revision or Modification** |
| 50/2023 | **Deans Council Approval Decision Number** |
| 26/12/2023 | **The Date of the Deans Council Approval Decision** |
| 06 | **Number of Pages** |

|  |  |  |
| --- | --- | --- |
| **1.** | **Course Title** | Medical and Veterinary Entomology |
| **2.** | **Course Number** | (606316) |
| **3.** | **Credit Hours (Theory, Practical)** | 3 |
| **Contact Hours (Theory, Practical)** | 3 |
| **4.** | **Prerequisites/ Corequisites** | **General Entomology (606212)** |
| **5.** | **Program Title** | BSc in Plant Protection |
| **6.** | **Program Code** |  |
| **7.** | **School/ Center** | The University of Jordan |
| **8.** | **Department** | Agriculture |
| **9.** | **Course Level** | Plant Protection |
| **10.** | **Year of Study and Semester (s)** | BACHLER |
| **11.** | **Other Department(s) Involved in Teaching the Course** | / |
| **12.** | **Main Learning Language** | English |
| **13.** | **Learning Types** | ☐Face to face learning ☐Blended  Fully online |
| **14.** | **Online Platforms(s)** | Moodle  Microsoft Teams |
| **15.** | **Issuing Date** |  |
| **16.** | **Revision Date** |  |

**17. Course Coordinator:**

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| --- |
| Name: Prof. Salah Araj Contact hours:  Office number: Phone number: +962 6 5355000 Ext. 22520  Email: s.alaraj@ju.edu.jo |

**18. Other Instructors:**

|  |
| --- |
| Name:  Office number:  Phone number:  Email:  Contact hours:  Name:  Office number:  Phone number:  Email:  Contact hours: |

**19. Course Description:**

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| --- |
| The aim of the course is to provide basic information about the recognition of arthropods of medical and veterinary importance, their biology and life cycles, their role in disease transmission and their control. Collecting and persevering such arthropods is also discussed. |

**20. Program Intended Learning Outcomes:** (To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

1. Demonstrate a depth in understanding of the fundamental knowledge and skills required in the field of Plant Protection sciences, which include weeds, insects, mites, fungi, bacteria, viruses and nematodes.

2. Identify and distinguish harmful and beneficial weeds, insects, mites, fungi, bacteria, and nematodes.

3. Predict the outbreaks of pests and determine the level of infection based on skills gained in the field of Plant Protection Sciences.

4. Recognize different techniques (biological, chemical, cultural, and physical) in pest control.

5. Design and develop appropriate management strategies of pests in an environmentally friendly manner.

6. Participate efficiently in agricultural projects in the field of pest management in various public and private sectors in Jordan and worldwide.

7. Communicate effectively in written, oral, and graphical forms.

8. Employ the gained skills in communication and serving different communities.

9. Commit to ethics and compliance responsibilities for being an agricultural engineer, especially with regard to agricultural sector, environment and society.

**21. Course Intended Learning Outcomes:** (Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

1. Stimulate the interest in the biology and behaviour of medical and vet insects
2. Awareness of students with the major orders and families of insects of medical and veterinary importance
3. Develop a knowledge and understanding the role of insects in disease transmission
4. Sensitize students to the importance of appropriate control measures for managing medical and veterinary insects

**22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Program ILOs | ILO (1) | ILO (2) | ILO (3) | ILO (4) |
| Course ILOs |
| 1 | √ |  |  |  |
| 2 | √ |  |  |  |
| 3 | √ |  |  |  |
| 4 |  |  |  | √ |
| 5 |  | √ |  |  |
| 6 |  |  |  |  |
| 7 |  | √ |  |  |
| 8 |  |  |  |  |
| 9 |  |  | √ |  |

**23. Topic Outline and Schedule:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Week** | **Lecture** | **Topic** | **ILO/s Linked to the Topic** | **Learning Types**  **(Face to Face/ Blended/ Fully Online)** | **Platform Used** | **Synchronous / Asynchronous Lecturing** | **Evaluation Methods** | **Learning Resources** |
| 1 | 1.1 | Introduction to the arthropods of medical and veterinary importance |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 1.2 | Introduction to the arthropods of medical and veterinary importance |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 1.3 | Introduction to the arthropods of medical and veterinary importance |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 2 | 2.1 | Introduction to the arthropods of medical and veterinary importance |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 2.2 | Introduction to the arthropods of medical and veterinary importance |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 2.3 | Introduction to the arthropods of medical and veterinary importance |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 3 | 3.1 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 3.2 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 3.3 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 4 | 4.1 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 4.2 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 4.3 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 5 | 5.1 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 5.2 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 5.3 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 6 | 6.1 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 6.2 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 6.3 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 7 | 7.1 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 7.2 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 7.3 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 8 | 8.1 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 8.2 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 8.3 | ***Diptera***  Culicidae, Psychodidae, Ceratopogonidae, Simulidae, Tabanida, Glossinidae  Muscidae , Calliphoridae, Scarcophagidae  Cuterebridae, Oestridae, Gastrophilidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 9 | 9.1 | ***Siphonaptera***  ***Pulicidae, Leptopsyllidae and Ceratophilidae*** |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 9.2 | ***Siphonaptera***  ***Pulicidae, Leptopsyllidae and Ceratophilidae*** |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 9.3 | ***Siphonaptera***  ***Pulicidae, Leptopsyllidae and Ceratophilidae*** |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 10 | 10.1 | ***Phthiraptera***  Pediculidae and Phthiridae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 10.2 | ***Phthiraptera***  Pediculidae and Phthiridae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 10.3 | ***Phthiraptera***  Pediculidae and Phthiridae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 11 | 11.1 | ***Hemiptera***  Cimicidae, Reduviidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 11.2 | ***Hemiptera***  Cimicidae, Reduviidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 11.3 | ***Hemiptera***  Cimicidae, Reduviidae |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 12 | 12.1 | ***Blattaria***  **Order Metastigmata**, Argasidae, soft ticks |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 12.2 | **Order Metastigmata**  ***Argasidae, soft tocks*** |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 12.3 | **Order Metastigmata** Ixododae, hard ticks |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 13 | 13.1 | **Order Astigmata**, Sarcoptidae, Scabies mite |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 13.2 | **Order Prostigmata**, Trombiculidae Scrub typhus mite, and **Scorpions** |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |
| 13.3 | **Order Prostigmata**, Trombiculidae Scrub typhus mite, and **Scorpions** |  | Fully Online | MS Teams | Synchronous | Homework, Quiz, Presentations | 1-8 |

**24. Evaluation Methods:**

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Evaluation Activity** | **Mark** | **Topic(s)** | **ILO/s Linked to the Evaluation activity** | **Period (Week)** | **Platform** |
| First midterm exam | 35 | According to lecturing schedule | 1 to 5 | To be agreed upon | Face to Face |
| Lab midterm exam | 15 | According to lecturing schedule | 1 to 5 | To be agreed upon | Face to Face |
| Lab final exam | 15 | According to lecturing schedule | 1 to 5 | To be agreed upon | MS Teams |
| Final Exam | 35 | According to lecturing schedule | 1 to 5 | To be agreed upon | Face to Face |

**25. Course Requirements:**

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| Students should have a computer, internet connection, webcam, account on a specific software/platform MS Teams) |

**26. Course Policies:**

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| A- Attendance policies:  B- Absences from exams and submitting assignments on time:  C- Health and safety procedures:  D- Honesty policy regarding cheating, plagiarism, misbehavior:  E- Grading policy:  F- Available university services that support achievement in the course: |

**27. References:**

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| --- |
| A- Required book(s), assigned reading and audio-visuals:   1. Mullen, G. and L. Durden. 2009. Medical and Veterinary Entomology, 2nd Edition,Academic Press, London.   B- Recommended books, materials, and media:  **References:**   1. Amr, Z. 2000. Arthropods of Medical importance in Jordan. United Nations   development program. Amman 68 pp. 2000.   1. Furman, D.P and E. P. Catts. 1982. Manual of Medical Entomology. 4th edition. Cambridge University Press, London 2. Herms, W. B. and M. T. James. 1968. Medical entomology. The McMillan Company.   New York 616 pp.   1. Kettle, D. S. 1995. Medical and Veterinary Entomology. 2nd edition. CAB   international. Wallingford. UK. 725 pp.   1. Lane, R. P. and R. W. Crosskey 1993. Medical insects and Arachnids. Chapman Hall,   London. UK. 723 pp   1. Mullen, G. and L. Durden. 2009. Medical and Veterinary Entomology, 2nd Edition,Academic Press, London. 2. Service, M. W. 1980. A guide to medical entomology. McMillan Press. London.   266 pp. |

**28. Additional information:**

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| Name of the Instructor or the Course Coordinator:  ………………………………………………… | Signature:  …………...……………… | Date:  ……..………… |
| Name of the Head of Quality Assurance Committee/ Department  …………………………………………………. | Signature:  …………...……………… | Date:  ……..………… |
| Name of the Head of Department  …………………………………………………. | Signature:  …………...……………… | Date:  ……..………… |
| Name of the Head of Quality Assurance Committee/ School or Center  …………………………………………………. | Signature:  …………...……………… | Date:  ……..………… |
| Name of the Dean or the Director  …………………………………………………. | Signature:  …………...……………… | Date:  ……..………… |