

Course objective

1. Knowledge about arthropods and especially insects with their morphological and life history features
2. Identification of insects of economic importance

Learning Outcomes:

The students would be able to:

1. Know about arthropods and especially insects with their morphological features
2. Identify insects of economic importance and acquire working skills for collecting, mounting, and preserving insects

Course Content):

1. Introduction

- Economic importance of insects

2. Phylum Arthropoda and its classification

Salient characteristics of phylum arthropoda

- Paupoda
- Symphylan
- Chilopoda
- Diplopoda
- Arachnida
- Crustacea
- Insecta

3. External morphology and appendages of a typical insect

- Head
- Thorax
- Abdomen

4. Anatomy/physiology of a typical insect

- Endoskeleton
- Digestive system
- Excretory system
- Circulatory system
- Reproductive system
- Respiratory system
- Nervous system

5. Metamorphosis and its types

- Ametamorphosis
- Hemimetamorphosis
- Holometamorphosis

6. Insect classification, salient characters of insect orders; examples from major families of economic importance.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work:	25 marks
Midterm Exam:	35 marks
Final term Exam:	40 marks

Recommended Books:

1. Ahmad, I. 2010. Hashriat "Insects". National Book Foundation, Lahore
2. Awastheir, V.B. 2009. Introduction to General and Applied Entomology. Scientific Publisher, Jodhpur, India.
3. Dhaliwal, G.S. 2007. An Outline of Entomology. Kalyani Publishers, Ludhiana.
4. Elzinga, R.J. 2003. Fundamentals of Entomology. Prentice Hall.
5. Gullan, P. J. and P. S. Cranston. 2010. The Insects: An Outline of Entomology. 4th edition. Wiley-Blackwell. A John Wiley & Sons, Ltd., Publication, UK.
6. Lohar, M.K. 2001. Introductory Entomology. Department of Entomology, Sindh Agriculture University Tandojam Sindh, Pakistan.
7. Richards, O.W. and Davies, R. G. 2004. Imm's General Text-book of Entomology, Vol. I. and II, 10th Ed. Chapman & Hall, London, N.Y.
8. Romoser, W. S. and Stoffolano, J. G. 1998, The Science of Entomology, WCB McGraw-Hill.
9. Triplehorn, C.A. and Johnson, N.F. 2005. Borror and DeLong's Introduction to the study of Insects. Brooks Cole. 7th Ed.
10. Trigunayat, M.M. 2009. A Manual of Practical Entomology. 2nd Edition Scientific Publisher (India) Judhupur.
11. Yousuf, M. Tayyab, M. and Shazia, Y. 2007. Manual of Introductory Entomology, University of Agriculture, Faisalabad.
12. Pedigo, L.P. and Marlin, E. R. 2009. Entomology and Pest Management, 6th Edition, Person Education Inc., Upper Saddle River, New Jersey 07458, U.S.A

UZO-524 Introductory Entomology (Lab.)

Cr. 1

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2. Identify insects of economic importance and acquire working skills for collecting, mounting, and preserving insects

Course Content):

1. Characters of classes of Arthropoda
2. Collection and preservation of insects
3. Morphology and dissection of a typical insect (digestive, reproductive, excretory, nervous, circulatory and tracheal systems)
4. Temporary mounts of different types of appendages of insects
5. Observations for types of metamorphosis

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