UZO-513 Insect Structure and Function Cr. (2)

Course Objectives:
To provide students with an understanding of the comparative morphology of insect organ systems. To help students understand how the morphology of a structure is related to its function.

Course contents
General characteristics of insects. Relationship with other Arthropoda.
Hard Parts: General segmentation, Cuticle: Detailed structure. Epidermal layer; its structure and function. Basement membrane.Colours of insects.Cuticular outgrowths and appendages, sclerotization.Metamorphosis.
Head: Cephalization, Sclerites, Modifications. Antennae: Different modes of ingestion and types of mouth parts.
Thorax; legs, their different modifications and functions.
Wings: Different regions. Development.Basal attachments. Main veins and their branches (generalized insects). Wing coupling apparatus.
Abdomen: Secondary appendages and external genitalia. Endoskeleton: Head, thorax and abdomen.
Comparative structure of all the systems, e.g., digestive, excretory, respiratory, circulatory, and nervous system and their physiology. Sense organs: sound and light producing organs. Exocrine and Endocrine glands including pheromones and their functions.
Reproduction: Reproductive organs and different types of reproduction in insects. Types of larvae and pupae.

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

Books Recommended

1. Imm. Richards and Davies, Vol.1.General Text Book of Entomology.
2. Chapman. 2000. The Insects: Structure and Function.
3. Wiggles Worth.Insect Physiology.
4. Pattons. Insect Physiology.
5. Price.Insect Ecology.
6. Krebs. Ecology: The Experimental Analysis Abundance.
7. Tembhare. 1997. Modern Entomology.
8. T.R.E. Southhood. 1978. Ecological Methods.
9. S.S. Yasbani and M.L. Agarwal. 1997. Elements of Insect Ecology.

UZO-514 Insect Structure and Function (Lab.) Cr. (1)

Course Objectives:
To provide students with an understanding of the comparative morphology of insect organ systems. To help students understand how the morphology of a structure is related to its function.

Course contents:
Preparation of permanent slides. All the hard parts (terminal segments, wings, antennae, legs, mouth

parts).Different systems, especially digestive, reproductive of the following insects. American cockroach, grasshopper, housefly, mosquito, any common beetle. Sympathetic nervous system of cockroach.

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

Books Recommended

1. Imm. Richards and Davies, Vol.1.General Text Book of Entomology.
2. Chapman. 2000. The Insects: Structure and Function.
3. Wiggles Worth.Insect Physiology.
4. Pattons. Insect Physiology.
5. Price.Insect Ecology.
6. Krebs. Ecology: The Experimental Analysis Abundance.
7. Tembhare. 1997. Modern Entomology.
8. T.R.E. Southhood. 1978. Ecological Methods.
9. S.S. Yasbani and M.L. Agarwal. 1997. Elements of Insect Ecology.