

**MAJOR COURSE
DEPARTMENT OF ZOOLOGY
BHATTADEV UNIVERSITY, BAJALI**

COURSE NAME: **DIVERSITY OF NON-CHORDATES**

1st Semester

Paper Code: ZOO1104C

Total Credits: 04

Total lectures: 45 (L+T) & 30 (P)

Credits:4 (Theory: 03, P: 01)

Course objectives: The course is aimed with the objective of providing knowledge of the diversity of Non-Chordates. The morphological and anatomical features of diverse animal groups, their economic and pathogenic significance and their relationships have been incorporated in order to create interest among the students. Tried to acquainted with the practical knowledge of Non-Chordates through different identifying characters

Learning Outcome:

On the completion of the course, the students will be able to:

- Demonstrate comprehensive identification abilities of non-Chordate diversity.
- Explain structural and functional diversity of non-Chordate diversity.
- Explain evolutionary relationship amongst non-Chordates group.
- Enable students to take up research in biological sciences.
- The practical will also give them an idea of classification of the animals and the basis on which they are classified into groups or taxa.

THEORY

CREDITS: 03

SECTION 1:

11L

Protista: General characters and classification up to Classes.

Study of Paramecium with particular reference to locomotion & Reproduction.

Porifera : General characters and classification up to Classes.

Canal system and spicules in Sponges.

SECTION 2:

10L

Cnidaria : General characters and classification up to Class.

Polymorphism in Hydrozoa, Coral and Coral Reef formation

Platyhelminthes : General characters and classification up to Classes.

Morphology , Life History and pathogenicity of *Taenia solium*

SECTION 3:**12L**

Aschelminthes: General characters and classification up to Classes; Morphology, life history and pathogenicity of *Ascaris lumbricoids*, Parasitic adaptation in Helminthes.

Annelida: General Characters and classification up to Classes;
Excretion in Annelida

SECTION 4:**12L**

Arthropoda: General characters and classification up to Classes;
Metamorphosis in Insects, Social life in Bees and Termites.

Mollusca : General character and classification up to Classes.
Torsion in Gastropod, Pearl formation.

Echinodermata : General characters and classification up to Classes;
Water-vascular system in Echinodermata.

Note: Classification to be followed from “Ruppert and Barnes (2006) *Invertebrate Zoology*, 8th edition, Holt Saunders International Edition”

DIVERSITY OF NON-CHORDATES**PRACTICAL****CREDITS: 1**

1. Identification and classification up to Class. Generic name must be given;
Obelia, Physalia, Aurelia, Corallium, Gorgonia, Metridium, Pennatula, Fungia, Madrepora, Aphrodite, Nereis, Pheretima, Hirudinaria, Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Cancer, Scolopendra, Julus, Bombyx, Periplaneta, termites and honey bees, *Chiton, Dentalium, Pila, Sepia, Octopus, Nautilus, Pentaceros/Asterias Echinus, Cucumaria*.
2. Mount Mouthparts and Dissection of Digestive system and Nervoussystem of *Periplaneta*.

3. Study of permanent slide : T.S. through Pharynx, Gizzard of *Pheretima*, Whole mount of *Amoeba Eugleia*, *Paramecium*.

SUGGESTED READINGS

- KOTPAL *Invertebrate Zoology*
- Ruppert and Barnes, R.D. (2006). *Invertebrate Zoology*, VIII Edition. Holt Saunders International Edition
- Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002).
- *The Invertebrates: A New Synthesis*, III Edition, Blackwell Science
- Barrington, E.J.W. (1979). *Invertebrate Structure and Functions*. II Edition, E.L.B.S. and Nelson