

Department of Zoology

School of Sciences

Bachelor of Sciences Programme: Zoology



Uttarakhand Open University
Teenpani Bypass, University Road, Behind T.P Nagar
Haldwani - 263139, Nainital
Uttarakhand

Programme Structure

B.Sc.I Year (Zoology)

Course 1: Non-Chordata Course Code-(BSCZO101)

Objective:

1. To comprehend the systematic position, functional morphology, mode of life and biodiversity of invertebrates
2. To study their economic importance, affinities and adaptations.
3. To study the parasitic forms of various invertebrate groups and their effect on human and animals.
4. Understand the general features of animal life cycles and forms of reproduction.
5. Describe the general features used to classify animal groups such as type of symmetry, number of tissue layers, body cavities, segmentation and cephalization and distinctive larval forms.

Syllabus

General characters Classification up to order. Study of Paramecium with particular reference to locomotion, nutrition, osmoregulation and reproduction. Germ layers, diploblastics and triploblastics organization. Theories on the origin of Metazoans. General characters and Classification up to order level. *Sycon* with special reference to structure, reproduction and development. Canal systems, affinities and economic importance of Porifera. General characters and Classification up to order level. Aurelia with special reference to structure, reproduction, development and polymorphism. A brief account of corals and coral reefs and their importance. General characters and Classification up to order level. Study of *Fasciola* with reference to structure, reproduction and parasitic adaptations. General characters and Classification up to order level. Study of *Ascaris* with special reference to structure, reproduction and development. General characters and Classification up to order level. *Nereis* with special reference to structure, reproduction and development. Metamerism and Parasitic adaptations in *Hirudinaria*. General characters and Classification up to order level. *Palaemon* with special reference to structure, reproduction and development. Zoological importance of *Peripatus*. Types of mouth parts in insects. Social insects and their economic importance. General characters and Classification up to order level. Pila with special reference to structure, reproduction and development. General characters and Classification up to order level. Asterias with special reference to structure, locomotion, mode of feeding and reproduction.

UNIT SCHEDULE

Block I: Lower Non chordate

Unit 1: Phylum Protozoa

Unit 2: Metazoa

Unit 3: Phylum Porifera

Unit 4: Phylum Coelenterate

Unit 5: Phylum Platyhelminthes

Unit 6: Phylum Nematelminthes

Unit 7: Phylum Annelida

Block II: Higher Non Chordata

Unit 8: Phylum Arthropoda

Unit 9: Phylum Mollusca

Unit 10: Phylum Echinodermata

Course 1: Non- Chordata (BSCZO101)

UNIT WISE CONTENTS (BSCZO101)

Block I: Lower Non chordate

Unit 1: Phylum Protozoa

General characters Classification up to order. Study of *Paramecium* with particular reference to locomotion, nutrition, osmoregulation and reproduction.

Unit 2: Metazoa

Germ layers, diploblastics and triploblastics organization.

Unit 3: Phylum Porifera

General characters and Classification up to order level. *Sycon* with special reference to structure, reproduction and development. Canal systems and affinities.

Unit 4: Phylum Coelentrata

General characters and Classification up to order level. *Aurelia* with special reference to structure, reproduction, development and polymorphism. A brief account of corals and coral reefs and their importance.

Unit 5: Phylum Platyhelminthes

General characters and Classification up to order level. Study of *Fasciola* with reference to structure, reproduction and parasitic adaptations.

Unit 6: Phylum Nematelminthes

General characters and Classification up to order level. Study of *Ascaris* with special reference to structure, reproduction and development.

Unit 7: Phylum Annelida

General characters and Classification up to order level. *Nereis* with special reference to structure, reproduction and development. Metamerism and Parasitic adaptations in *Hirudinaria*.

Block II: Higher Non Chordata

Unit 8: Phylum Arthropoda

General characters and Classification up to order level. *Palaemon* with special reference to structure, reproduction and development. Zoological importance of *Peripatus*. Types of mouth parts in insects. Social insects and their economic importance.

Unit 9: Phylum Mollusca

General characters and Classification up to order level. *Pila* with special reference to structure, reproduction and development.

Unit 10: Phylum Echinodermata

General characters and Classification up to order level. *Asterias* with special reference to structure, locomotion, mode of feeding and reproduction.

Suggested Readings:

1. Hickman C.P. Jr., Hickman, F.M. and Roberts, L.S.: Integrated Principles of Zoology, Mosby College Publication. East. Louis.
2. Ayyar, E.K. and Ananthakrishnan. I.N.: Manual of Zoology, Vol.1 (Invertebrata), Parts I & II S. Viswanatham (Printers and Publishers) Pvt. Ltd., Madras.
3. Jordan, E.I., and Verma, P.S.: Invertebrate Zoology, S. Chand & Co. Ltd., Ram Nagar, New Delhi.
4. Parker and Haswell : Text Book of Zoology, Vol.1, (Invertebrata), A.Z.T.B.S. Publishers and Distributors, New Delhi-110051.
5. Kotpal, Agarwal & Khetrapal : Modern text book of Zoology : Invertebrate, Rastogi Publications.
6. Nigam, H.C. : Biology of Non-Chordates, Shobam Lal Nagin Chand & Co. Rastogi, V.B. : Invertebrate Zoology, Kedarnath Ramnath
7. Jordon and Verma: Invertebrate Zoology (1995, S. Chand)
8. Kotpal. R.L. Modern Text Book of Zoology: Invertebrates. Rastogi Publications, Merruit.