

ZOOLOGY COMPLEMENTARY COURSE FOR BOTANY**MODEL I AND SIMILAR PROGRAMMES (HOME SCIENCE/
BIOLOGICAL TECHNIQUES AND SPECIMEN PREPARATION)****Semester I****ZY1C01U Animal Diversity – Non Chordata**

2 hrs/week

36/hrs

Credit – 2

Objectives

1. To acquire knowledge on the taxonomic status of various Invertebrate animals and animal groups.
2. To familiarize the students with the diverse group of organisms around us.
3. To develop an aptitude for understanding nature and its rich bio-diversity.

Module 1

General Introduction

1 hr

5 Kingdom classification, Classification in general

Core Readings

Ekambaranatha Ayyer M (1990) A Manual of Zoology, Volume 1.

Invertebrate Part I and Part II S Viswanathan printers 7 Publishers

Pvt.Ltd

Vijayakumaran Nair, Jayakumar J & Paul P I (2007)

Protista & Animal Diversity Academica Publications. Zoological Society of Kerala.

Animal Diversity (2002). Published by Zoological Society of Kerala.

Module 2

Kingdom Protista

7 hrs

Salient features and classification up to phyla

1. Phylum Rhizopoda : Amoeba
2. Phylum Actinopoda : Actinophrys
3. Phylum Dinoflagellata : Noctiluca
4. Phylum Parabasalia : Trychonympha
5. Phylum Metamonada : Giardia
6. Phylum Kinetoplasta : Trypanosoma
7. Phylum Euglenophyta : Euglena
8. Phylum Cryptophyta : Cryptomonas
9. Phylum Opalinata : Opalina
10. Phylum Bacillariophyta : Diatoms
11. Phylum Chlorophyta : Volvox
12. Phylum Choanoflagellata : Proterospongia
13. Phylum Ciliophora : Paramecium
14. Phylum Sporozoa : Plasmodium
15. Phylum Microsporidia : Nosema
16. Phylum Rhodophyta : Red Alga

(Mention any five general characters for each phylum. Detailed accounts of examples are not necessary.)

Pathogenic protista – Plasmodium, Entamoeba.

Core Readings

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Module 3

Mesozoa – eg. Rhopalura (mention 5 salient features)

2 hrs

Parazoa

Phylum Porifera – eg Leucosolenia

Phylum Placozoa – e.g. Trycoplax adherens.

Core Readings

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Module 4

Phylum : Coelenterata

3hrs

Salient features, Classification up to classes

1. Hydrozoa – Physalia
2. Scyphozoa – Aurelia
3. Anthozoa – Adamsia

Corals and coral reefs.

Core Readings

Ekambaranatha Ayyer M (1990) A Manual of Zoology, Volume 1.
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Zoological Society of Kerala. Animal Diversity (2002). Published by
Zoological Society of Kerala.

Module 5

Phylum - Platyhelminthes

2 hrs

Salient features, classification upto classes

1. Turbellaria – Planaria

2. Trematoda – Fasciola
3. Cestoda – Taenia solium

Core Readings

Ekambaranatha Ayyer M (1990) A Manual of Zoology, Volume 1.
Invertebrate Part I and Part II S Viswanathan printers 7 Publishers
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Zoological Society of Kerala. Animal Diversity (2002). Published by
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Module 6

Phylum Nematoda 2 hrs

Salient features, classification up to classes

1. Phasmidia - Wuchereria
2. Aphasmidia – Trichinella

Module 7

Phylum - Annelida 2 hrs

Salient features, classification upto classes

1. Polychaeta, - Nereis
2. Oligochaeta – Earthworm – Pheretima
3. Hirudinomorpha – Hirudinaria

Core Readings

Ekambaranatha Ayyer M (1990) A Manual of Zoology, Volume 1.
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Module 8

Phylum Arthropoda 10 hrs

Salient features

Type - Prawn - *Penaeus*

Classification upto classes

Subphylum Chelicerata

Class 1. Merostoma – *Limulus*

2. Arachnida – Spider

3. Pycnogonida – Nymphon

Subphylum Mandibulata

Class 1. Crustacea – *Daphnia*

2. Chilopoda - Centepede

3. Symphyla - *Scutigera*

4. Diplopoda - Millipede

5. Pauropoda - *Pauropus*

6. Insecta - Butterfly

(Detailed account of examples are not necessary)

Phylum Onychophora – eg. *Peripatus* (Mention its affinities)

Insect pests

1. Pests of coconut – *Oryctes rhinoceros*, *Rhynchophorus ferrugineus*, *Nephantis serinopa*, *Eriophid mite*
2. Pests of paddy – *Leptocorisa acuta*, *Spodoptera mauritius*
3. Pests of stored grains - *Trogoderma granarium*, *Tribolium castaneum*, *Sitophilus oryzae*

Core Readings

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Module: - 9

Phylum – Mollusca 3 hrs

Salient features and classification upto classes

1. Aplousobranchia – Neomenia
2. Monoplacophora – Neopalina
3. Bivalvia – Perna
4. Polyplacophora – Chiton
5. Gastropoda – Xancus
6. Cephalopoda – Sepia
7. Scaphopoda – Dentalium

Core Readings

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Module 10

Phylum - Echinodermata 3 hrs

Salient features , classification upto classes

Class 1. Asterozoa – Astropecten

2. Ophiurozoa - Ophiothrix
3. Echinozoa – Echinus
4. Holothurozoa – Cucumaria
5. Crinozoa – Antedon

Core Readings

Ekambaranatha Ayyer M (1990) A Manual of Zoology, Volume 1.
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of Kerala.

Animal Diversity (2002). Published by Zoological Society of Kerala.

Module 11

Phylum Hemichordata

1 hr

Salient features eg: Balanoglossus

Core Readings

Ekambaranatha Ayyer M (1990) A Manual of Zoology, Volume 1.

Invertebrate Part I and Part II S Viswanathan printers 7 Publishers

Pvt.Ltd

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Protista & Animal Diversity Academica Publications.

Zoological Society of Kerala. Animal Diversity (2002). Published by

Zoological Society of Kerala.

Selected Further Readings

Barnes, R.D. , 1987. Invertebrate Zoology (W.B. Saunders, New York).

Barrington, E.J.W., 1967. Invertebrate Structure and function (ELBS and Nelson , London).

Dhami, P.S. and Dhami, J.K. 1979. Invertebrate Zoology (R. Chand and Co. New Delhi).

Ekamberanatha Ayyar M. (1990) A Manual of Zoology, Volume I. Invertebrate Part I and Part II S. Viswanathan Printers & Publishers Pvt. Ltd.

Groove, A.J. and Newell, G.E. 1974. Animal Biology – Indian Reprint (University Book Stall, New Delhi).

Hyman, L.H. The Invertebrate vols. (McGraw-Hill) 1942. Comparative vertebrate Anatomy (The University of Chicago Press).

James R.D. (1987). Invertebrate Zoology, W.B. Saunders, New York.

Kapoor V.C. (1994). Theory and Practice of Animal Taxonomy.

Kapoor, V.C. 1994. Theory and Practice of Animal Taxonomy (Oxford and IBH Publishing Co., New Delhi.)

Kotpal R.L. Agarwal S.K. and R.P. Khetharpal (2002). Modern Text Book of Zoology.

- Parker T.J and Haswell W.A. (1962). Text Book of Zoology Vol. I. Invertebrate (ELBS & Macmillan, London).
- Marshall, A.J. and Williams, W.D. 1972. Text Book of Zoology Vol. Invertebrates (ELBS and Macmillan, London).
- Mayer, E. 1980. Principles of Systematic Zoology (Tata McGraw Hill Publishing Co., New Delhi.)
- Nair, K.K. Ananthakrishnan, T.N. David, B.V. 1976. General and Applied Entomology (T.M.H. New Delhi).

Practicals

ZY1C01U [P] ANIMAL DIVERSITY – NON CHORDATA

2 hr/week,
36 hrs
Credit – 1

1. Scientific drawing - 5 specimens
2. Simple identification – 25 invertebrates (Out of which 15 by their scientific names)
3. T.S - Earthworm, T.S Fasciola
4. Dissection - Prawn Nervous system
5. Dissection - Cockroach Nervous system
6. Mounting – Prawn Appendages
7. Mounting – Cockroach Mouth parts