

**ORIENTAL COLLEGE (AUTONOMOUS), TAKYEL,
IMPHAL
TEACHING PLAN
(B.A/B.Sc.)**

**Name of Department: Zoology
Semester –2nd Sem- 2022-23**

Paper Name: NON-CHORDATES II: COELOMATES Code: HC-503

No. of Hours per Week	Credits	Total No. of Hours	Marks
4	4	60	75

Learning Objectives:

- To understand the Animal diversity around us with their principles of classification and terminology. To enable the students to understand the difference in their morphology and functional anatomy. To impart in depth knowledge to students about the different modes of living and structural modification acquired to suit varied living conditions.

Learning outcomes:

- The student will be able to understand classify and identify the diversity of animals with the importance of classification.
- The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.

Unit	Section	Topic Lecture	Hours	Learning outcome	Pedagogy	Assessment / Evaluation
I	Introduction to Coelomates, Annelida					
	1	Evolution of coelom and metamerism	3	Made understand the students how advanced characters come into existence from the simpler lower animals	Lecture, PPT	Short answer, quiz, Assignment
	2	General characteristics and Classification up to classes	2	Recall the characters and classification of Annelida	PPT, Lecture	
	3	Excretion and Reproduction in Annelida	4	Learnt about the formation of urine and different forms of reproduction in Annelida	Lecture, PPT	
	4	Trochophore larva – Structure, affinities and evolutionary significance.	3	Studied in detail about trochophore larva and its importance in evolution	PPT, Lecture, Diagram	
II	Onychophora and Arthropoda					
	1	General characteristics and Evolutionary significance of Onychophora General characteristics and Classification up to classes.	7	Recalls the characters and classification .	Lecture, PPT	MCQ, Short answer, Assignment, Seminar presentation
	2	Mouth parts of insects, Vision and Respiration in Arthropoda	5	Explored the mode of feeding compound eyes and different modes of respiration in Arthropoda	PPT, Lecture, Picture	
	3	Metamorphosis in Insects, Social life in bees and termites	4	Studied different larval stages of insect. Learnt about the colonisation and division of labour in insects	PPT, Lecture, Diagram	
III	Mollusca					

	1	General characteristics and Classification up to classes in Mollusca	3	Recalls the characters and classification of Mollusca	PPT, Lecture	Objective question, Short answer, Assignment
	2	Respiration in Mollusca, Torsion and detorsion in Gastropoda	5	Learnt the respiration system in Mollusca. Studied the coiling and de-coiling of embryo in class Gastropoda	-Do-	
	3	Pearl formation in bivalves, Structure and affinities of Neopilina	4	Explored the formation of pearl in bivalves. Knowledge with respect to single value molluscs, Neopilina (a living fossil)	Lecture, PPT, Diagram	
IV	Echinodermata					
	1	General characteristics and Classification up to classes	4	Knowledge about the characters and classification of the Phylum	Lecture, PPT	MCQ, Seminar, Assignment, Short answer
	2	Water-vascular system in Asteroidea	3	Studied about the unique system which represent circulatory system in starfishes	PPT, Diagram	
	3	Larval forms in Echinodermata, Affinities with Chordates	5	Understand the various larva in different the relationship with the Chordates	Lecture, PPT, Picture	
V	Minor Phyla					
	1	Introduction to Minor phyla, Distinguishing characters and examples of Nemertinea, Rotifera, Acanthocephala	4	Introduced the students to different small Phyla and their characteristic	Lecture, PPT	Classroom interaction, oral test, Short answer
	2	Distinguishing characters and examples of Echiuroidea, Bryozoa, Brachiopoda, Sipunculida and Phoronida	4	Explored the characters and represented of five minor Phyla	-Do-	

SUGGESTED READINGS

- L.H. Hyman 'The Invertebrates' Vol I, II and V. – M.C. Graw Hill Company Ltd.
- Kotpal, R.L. 1988 - 1992 Protozoa, Porifera, Coelenterata, Helminthes, Arthropoda, Mollusca, Echinodermata. Rastogi Publications, Meerut.
- E.L. Jordan and P.S. Verma 'Invertebrate Zoology' S. Chand and Company.
- Parker, T.J. and Haswell 'A text book of Zoology' by, W.A., Mac Millan Co. London.
- 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

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