

Part A: Introduction

Program: Certificate Course		Class: B.Sc. I st Year	Year: 2022	Session: 2022-2023
1	Course Code	ZOOL-1T		
2	Course Title	Animal Diversity: Non-Chordata and Chordata, Comparative Anatomy and Physiology of Non-chordates		
3	Course Type	Theory		
4	Pre-requisite (if any)	No		
5	Course Learning Outcomes (CLO)	Upon completion of the course students should be able to : <ul style="list-style-type: none"> • Learn about the importance of systemic, taxonomy and phylogeny to get a concrete idea of evolution of non-chordate phyla. • Understand the various morphological, anatomical structures and functions of animals of different phyla. • Get the knowledge about economic, ecological and medical significance of various animals in human welfare. • Understand the important parasites and their control measures. • Comparison of the anatomy and physiology of the different taxa of non-chordates. 		
6	Credit Value	4		
7	Total Marks	Max. Marks: 50	Min Passing Marks : 17	

Part B: Content of the Course

Total Lectures: 60

Unit	Topics	No. of Lectures
I	Taxonomy, Protozoa, Porifera Taxonomy - Elementary knowledge of Zoological Nomenclature and International Code. Classification of Animal Kingdom upto Phylum of acoelomate and coelomate non-chordates according to Parker and Haswell 7 th edition. Protozoa - Phylum Protozoa: General characters of the phylum and classification up to order with characters and suitable examples. Structure, life history and pathogenicity of malaria parasite (<i>Plasmodium vivax</i>). Protozoa and disease. Porifera - Phylum Porifera: General characters of the phylum and classification up to order with characters and suitable examples. Type study of Sycon.	12
II	Coelenterata, Platyhelminthes, Nemathelminthes : Coelenterata - Phylum Coelenterata: General characters of the phylum and classification up to order with characters and suitable examples. Type Study of <i>Obelia</i> . Platyhelminthes - Phylum Platyhelminthes: General characters of the phylum and classification up to order with characters and suitable examples. Type Study of Liverfluke. Nemathelminthes - Phylum Nemathelminthes: General characters of the phylum and classification up to order with characters and suitable examples. Pathogenic nematodes and diseases.	12
III	Annelida, Arthropoda, Mollusca : Annelida - Phylum Annelida: General Characters of the phylum and classification up to order with characters and suitable examples. Types study of Earthworm (<i>Pheretima</i>). Arthropoda - Phylum Arthropoda: General Characters of the phylum and classification up to order with characters and suitable examples. Type study of Prawn. Insects as a vector of human disease. Mollusca - Phylum Mollusca: General characters of the phylum and classification up to order with characters and suitable examples. Type study of <i>Pila</i> .	12


 Ar. K. R. Dalmia
 31.5.2022

IV	<p>Echinodermata, Hemichordata, Classification of Chordata :</p> <p>Echinodermata - Phylum Echinodermata: General characters of the phylum and classification up to order with characters and suitable examples. Type study of Starfish(<i>Asterias</i>).</p> <p>Hemichordata - Phylum Hemichordata: General characters of the phylum hemichordate and relationship with non-chordates and chordates. Type study of <i>Balanoglossus</i></p> <p>Classification of Chordata - Classification of Chordata up to order with characters and suitable examples. Brief account of Urochordata, Cephalochordata and Vertebrata.</p>	11
V	<p>Comparative Anatomy and Physiology of Non-chordates: Coelom and coelomducts in Non-chordate. Locomotory organs and locomotion in Non-chordate. Pattern of feeding and digestion in lower Metazoans. Comparative anatomy and physiology of respiration and excretion in Non-chordate. Primitive, diffused and advance nervous system in Non-chordate. Reproduction in Non-chordates.</p>	13
<p>Keywords : Locomotory organ, feeding and digestion, respiration, International Commission on Zoological Nomenclature (ICZN), Classification, Protozoa, Classification, Liver Fluke, Trochophore, Arthropoda, Crustacea larva, Echinodermata larva</p>		

Part C -Learning Resource

1. **Text Books, Reference Books, Other Resources –**
2. Parker, J, Haswell, WA, "A Text Book of Zoology", VII edition, Vol. I & II, Low Price Publications, Delhi, 1990.
3. Barnes, RD, "Invertebrate Zoology", VII Edition, Cengage Learning, India, 2006.
4. Pechenik, JA, "Biology of the Invertebrates" McGraw-Hill Education, VII Edition, 2015.
5. Sedgwick, A, "A Students Text Book of Zoology", Vol.I, II & Vol. III., Low Price Publications, Delhi, 1990.
6. Dhami and Dhami, "Invertebrate Zoology" R., Chand & Co., India, 2009.
7. Jordan and Verma, "Invertebrate Zoology," S. Chand & Company, New Delhi, 2013.
8. Agarwal, VK, "Zoology for Degree Students: Non-Chordata", S Chand & Company, 2017.
9. Kotpal, R, "Modem Text Book of Invertebrates", Rastogi Publications, Meerut, 2017.
10. Kotpal, R, "Protozoa to Echinodermata (Phylum Series)", Rastogi Publications, Meerut, 2017.
11. Kardong, K.V. (2006) Vertebrates: Comparative Anatomy, Function, Evolution (4th edition), McGraw-Hill
12. Jordan, E. L. and Verma, P. S. (2013) Chordate Zoology (14th edition).
13. Saxena, R. K. and Saxena, S. (2015) Comparative Anatomy of Vertebrates (2nd edition).

E- Resources –

1. SWAYAM- <https://swayam.gov.in/explorer?searchText=>
2. <https://academic.oup.com>
3. <https://medineplus.gov>
4. <https://ncin.nlm.nih.gov>
5. <https://zoologylearningpoint.wordpress.com>
6. <https://zoologyresources.com>
7. National digital library – <https://ndl.iitkgp.ac.in>
8. e-PG Pathshala (MHRD) Portal, <https://egpg.inflibnet.ac.in>
9. Science Direct Open Access Content – <https://www.sciencedirect.com/book/9781843342038/> open – Access
10. <https://egyankosh.ac.in>

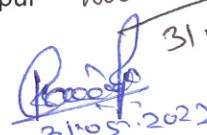
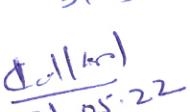
W.H
Dr. K. R. Dahay
31-5-2022

Part D: Assessment and Evaluation

Maximum Marks, University exam. - :50

DECLARATION

This is to certify that the syllabus is framed by the central board of the guidelines of the department of higher education, Chhattisgarh.

1. Dr. K. R. Sahu - Chairman -
Assistant Professor, Govt. Pandit Madhav Rao Sapre Collfge, Pendra Road 
31.05.2022
2. Dr. Ajit Hundet - Member --
Professor, Govt. D. B. Girls College, Raipur 
31.05.2022
3. Dr. Prem Praksah Singh - Member -
Professor, Govt. College, Kusmi 
31.05.2022
4. Dr. Shubhada Rahalkar - Member -
Professor, Govt. Bilasa Girls P. G. College, Bilaspur 
31.5.22
5. Dr. Anil Kumar Shrivastava - Member -
Professor, Govt. V. Y. T. P. G. Autonomous College, Durg 
31.5.22
6. Dr. R. K. Tamboli - Member -
Assistant Professor, Kirodimal Govt. Arts & Science College, Raigarh 
31.5.22
7. Dr. Parmita Dubey - Member -
Assistant Professor, Govt. J. Y. Chhattisgarh College, Raipur 
31.5.22
8. Dr. Shashi Gupta - Member -
Assistant Professor, Govt. Nagarjuna P. G. College of Science, Raipur 
31.5.22
9. Dr. L. P. Miri - Member -
Assistant Professor, Govt. J.P. Verma P. G. Arts & Commerce College, Bilaspur 
31.5.22
10. Dr. Rajesh Kumar Rai - Member -
Assistant Professor, Govt. Mahamaya College, Ratanpur, Bilaspur 
31.05.2022
11. Dr. Kavita Krishnamoorti - Member -
Assistant Professor, Govt. Lahiri P. G. College, Chirimiri, Koriya 
31.05.22

Date : 31.05.2022