



ST. ALOYSIUS' COLLEGE (AUTONOMOUS), JABALPUR

Reaccredited 'A++' Grade by NAAC(CGPA:3.58/4.00)

College with Potential for Excellence by UGC

DST-FIST Supported & STAR College Scheme by DBT

Syllabus of Theory

PART 'A' – Introduction

Program: Certificate Course		Class: B.Sc.	Semester: II	Session: 2025-26
Subject: Zoology				
1	Course Code:			
2	Course Title:	Animal Diversity II - Higher Non-Chordates		
3	Course Type:	Major- II		
4	Pre-requisite:	To study this course a student must have had the subject Biology in 12th Class		
5	Course Learning Outcome (CLO):	<p>Upon completion of the course students should be able to</p> <ol style="list-style-type: none">1. Learn about the importance of systemic, taxonomy and phylogeny to get a concrete idea of evolution of non-chordate phyla.2. Understand the various morphological, anatomical structures and functions of animals of different phyla.3. Get the knowledge about economic, ecological and medical significance of various animals in human welfare.4. 4. Understand the important parasites and their control measures.		
6	Credit Value:	6 (4+2)		
7	Total Marks:	Max Marks: 30+70		Min. Passing Marks: 35

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PART 'B' - Content of the Course

Total No. of Lectures - Tutorials - Practical (in hours per week) 2 hours /Week

Total No. of Lectures = 60

Unit S.No.	Topics	No. of Lectures
I	<p>Annelida</p> <p>1.1 Classification of higher non-chordates as mentioned in Vedas, particularly Rigveda and Yajurveda.</p> <p>1.2 Phylum Annelida: General Characters of the phylum and outline classification up to classes with distinctive characters and suitable examples.</p> <p>1.3 Structure and life cycle of Earthworm (Pheretima)</p> <p>1.4 Structure and significance of Trochophore larva</p> <p>1.5 Contribution of Annelids to Agricultural and Medical Science since ancient times</p> <p>1.6 Hirudo or Leech therapy (Mentioned in Sushruta Samhita an ancient medical text)</p> <p>Keywords/Tags: Classification, Annelida, Pheretima, Trochophore.</p> <p>Suggested Activity: Submission of a project report on contribution of Annelids to Agricultural and Medical Science since ancient times.</p>	12
II	<p>Arthropoda</p> <p>2.1 Phylum Arthropoda: General Characters of the phylum and outline classification up to classes with distinctive characters and suitable examples.</p> <p>2.2 Morphology, Appendages and Development of Prawn</p> <p>2.3 Larval forms of crustacea</p> <p>2.4 Ayurvedic and Agricultural importance of some species of Phylum Arthropods</p> <p>2.5 Insect as a vector of human disease</p> <p>Keywords/Tags: Arthropoda, Prawn, Crustacea larva, Insects</p> <p>Suggested Activity: Submission of a album containing photographs, cut outs with appropriate write up of some species of Phylum Arthropods</p>	12

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III	<p>Mollusca</p> <p>3.1 Phylum Mollusca: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>3.2 External and Internal structure and development of Pila</p> <p>3.3 Structure and Significance of Glochidium larva Keywords/Tags: Mollusca, Pila, Glochidium.</p> <p>Suggested Activity: Preparation of charts based on nervous system of Mollusca</p>	12
IV	<p>Echinodermata</p> <p>4.1 Phylum Echinodermata: General characters of the phylum and outline classification up to classes with distinctive characters and suitable examples</p> <p>4.2 External and Internal Structure of Starfish (Asterias)</p> <p>4.3 water vascular system of Starfish</p> <p>4.4 Development and Larval forms of Echinodermata</p> <p>Keywords/Tags: Echinodermata, Asterias, Echinodermata larvae</p> <p>Suggested Activity: Study of various species of Echinodermata and water vascular system using computer aided techniques</p>	12
V	<p>Hemichordata</p> <p>5.1 Phylum Hemichordata: General characters of the phylum Hemichordata and relationship with non-chordates and chordates</p> <p>5.2 Balanoglossus - External morphology</p> <p>5.3 Structure and significance of Tornaria larva</p> <p>Keywords/Tags: Hemichordata, Balanoglossus, Tornaria.</p> <p>Suggested Activity: Study of Hemichordata through Power Point Presentation</p>	12

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Part C-Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks : 100

Continuous Comprehensive Evaluation (CCE) : 30 Marks University Exam (UE): 70 Marks

Internal Assessment : Continuous Comprehensive Evaluation (CCE)	Class Test Assignment/Presentation	30
External Assessment : University Exam Section Time : 03.00 Hours	Section(A) : Very Short Questions Section (B) : Short Questions Section (C) : Long Questions	70

Any remarks/ suggestions:

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Part - A: Introduction (Practical)

Program: Certificate Course

Class: B.Sc.

Semester: II

Session: 2025-26

Subject: Zoology

1	Course Code:	
2	Course Title:	Animal Diversity II - Higher Non-Chordates
3	Course Type:	Major - II
4	Pre-requisite:	To study this course a student must have had the subject Biology in 12th Class
5	Course Learning Outcome (CLO):	<p>Upon completion of the course students should be able to understand</p> <ol style="list-style-type: none">1. Identify invertebrate animals of different phyla and their histology through study of museum specimens and slides2. Learn their different systems through dissections3. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.
6	Credit Value:	2
7	Total Marks:	Max Marks: 30+70 Min. Passing Marks: 35

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Part B - Content of the Course		
Total No. Of Lectures-Tutorials-Practical (2 hours per week)		
LTP: Total Number of Lectures:30		
Unit/S.No.	Topics	No. of hours
I	Study of museum specimens and slides relevant to the invertebrates	10
II	Dissection (Demonstration Only-Through You Tube Video or Models or Charts) a. Earthworm-Digestive system, Nervous system, Reproductive system b. Prawn-Nervous system and appendages c. Pila-Nervous System d. Cockroach-Digestive System, Nervous System (Easily available animal in residential areas which can be used for dissection and mounting)	04
III	Mounting a. Locally available small non-chordates, their larvae b. Mouth Parts of Insects	04
IV	Study of larval forms of Prawn and Starfish	04
V	Economic importance of insect	04
VI	Medicinal and Agriculture importance of Leech. Earthworm	04
Keywords/Tags:		

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Part -C: Assessment & Evaluation (Practical)

Suggested Continuous Evaluation Methods:

	Internal Assessment	Marks	External Assessment	Marks
1	Class Interaction/Quiz	30	Viva Voce on Practical	70
2	Attendance		Practical Record File	
3	Assignments (Charts/Model Seminar/Rural Service /Technology Dissemination/ Report of Excursion /Lab Visit/Survey/ Industrial visit)		Table work/Experiments	
	Total	30		70

Any remarks/Suggestions: e- Demonstrations & e- procedures can be opted.


23/08/23

