



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

SUBJECT: Zoology

Theory syllabus

Scheme B-1 (For course of science Practical Discipline having Major Practicum Component)

Part A – Introduction

PROGRAMME: UG Diploma		Class: B.Sc.	2 Year/ III Semester	Session – 2026-27
		Subject – Zoology		
1	Course Code	Animal diversity of Chordates		
2	Course Title	Core Course - I (C-4)		
3	Course Type			
4	Pre – requisite (if any)	To Study this course student should have studied Zoology in B.Sc. I Year.		
5	Course Learning Outcomes (CLO)	After completion of this course student will be able to- 1. Integrate traditional Indian knowledge with modern principles of chordate biology. 2. Learn about the importance of systematic taxonomy and phylogeny to get a concrete idea of evolution of chordate. 3. Understand Various morphological anatomical Structure and function of animals of different phyla. 4. Understand chordate diversity of animals and their taxonomic position. 5. Identify the morphological and anatomical features and basis of chordate classification. 6 Know economic importance and present status of animals that will develop positive attitude towards conservation of biodiversity.		
6	Credit Value	04		
7	Total Marks	Max. Marks: 70+30		Min. Passing Marks: 35

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Part B- Content of the Course

Total No. of Lectures- Tutorials- Practical (in hour per week): 3 hour per week L-T-P

Unit	Topics	No. of Lectures
I	• Introduction to Chordates and Ancient Indian Animal Science: 1.1 Traditional knowledge on Animal Science in ancient Indian Civilization. 1.2 Contribution of Indian Scientist in the field of taxonomy — Sundar Lal Hora and Beni Charan Mahendra. • Dashavatara (Matsya , Kurm , Varah etc.) described in Indian - literature from a scientific and evolutionary perspective. • Origin of Chordates, General Characteristics and Classification of Chordata up to Class (As per Parker & Harwell, 7th Edition). • Classification of Urochordata and Cephalochordata up to Order. • Type study of Herdmania. • Type study of Amphioxus. • Suggested Activity: Prepare a chart showing the hierarchical classification of Phylum Chordata up to order. • Keywords: Chordata, Urochordata, Cephalochordata, Agnatha, Herdmania, Amphioxus.	12
II	Agnatha and Pisces 2.1 Classification of Agnatha up to order. 2.2 Study of external features of Petromyzon and Myxine. 2.3 Comparative study of Petromyzon and Myxine. 2.4 General Characteristics and Classification of Pisces up to Orders. 2.5 Type study of Scoliodon. 2.6 Accessory Respiratory Organs in Fishes. 2.7 Development of Placoid Scales. Suggested Activity: 1. Visit a local fish farm or fisheries department to study traditional aquaculture techniques. 2. Importance of fishes in Ancient Indian culture. • Keywords: Agnatha, , Petromyzon, Myxine, Pisces, Scoliodon, aquaculture	12
III	Amphibia And Reptiles 3.1 General Characteristics and Classification of Amphibia up to Orders. 3.2 Type study of Frog. 3.3 Paedomorphosis in Amphibia. 3.4 General characters and Classification of Reptiles up to order. 3.5 Type study in Uromastix. 3.6 Poisonous and non-poisonous Snake. 3.7 Poison apparatus and biting mechanism of poisonous snakes.	12

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	Suggested Activity: 1. Importance of Amphibia in Ancient Indian culture. 2. Importance of Reptiles in Ancient Indian Culture. Keywords- Amphibia, Reptiles, Paedomorphosis, Poisonous Apparatus, Snake, Venom.	
IV	Bird 4.1 Brief Introduction to "Birdman of India" — Dr. Salim Ali. 4.2 General Characteristics and Classification of Aves up to Orders. 4.3 Type study of Columba livia. 4.4 Flight Adaptations in Birds. 4.5 Types and development of the Feathers. Suggested Activity: 1. Conduct a field observation or documentation of local bird species and their flight or migratory behaviour. 2. Importance of Birds in Ancient Indian Culture. Keywords: Aves, Dr. Salim Ali, Flight Adaptation, Columbia livia, Feathers.	12
V	Mammals 5.1 General Characteristics and Classification of Mammals up to Order. 5.2 Type study of Lepus. 5.3 Adaptive radiation in mammals with reference to locomotory appendages. 5.4 Dentition in mammals, 5.5 Introduction to Zoological Survey of India (ZSI) and Its Role. Suggested Activity: 1. Importance of Mammals in Ancient Indian Culture. Keywords: Mammalia, Adaptive Radiation, locomotory, Appendages, Evolution, ZSI.	12

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Part D-Assessment and evaluation		
Suggested Continuous evaluation method		
Maximum marks 100		
Continuous comprehensive examination (CCE) 30 marks		
University Exam (70 marks)		
Internal Assessment: Continuous Comprehensive Evaluation (CCE)		30
External Assessment: University Exam Section 'time: 03 Hours	Section(A): Very Short Questions Section (B): Short Questions Section (C): Long Questions	70

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B.Sc. III Semester
SUBJECT: Zoology

Practical syllabus

Scheme B-1 (For course of science Practical Discipline having Major Practicum Component)

Part A – Introduction

PROGRAMME: UG Diploma		Class: B.Sc.	2 Year/ III Semester	Session – 2026-27
Subject – Zoology				
1	Course Code	Practical of Animal Diversity Of Chordates		
2	Course Title			
3	Course Type			
4	Pre – requisite (if any)	To study this course a student must have had subject of the zoology in B. Sc. I year		
5	Course Learning Outcomes (CLO)	Upon completion of this course, students will be able to: 1. Integrate traditional Indian knowledge systems with modern scientific understanding of Animal Diversity of Chordates. 2. Comprehend the diversity, organization, and taxonomic position of various chordate groups. 3. Identify and describe the morphological features that form the basis of chordate classification 4. Recognize the economic importance and conservation value of different chordate groups, fostering a positive attitude toward biodiversity conservation		
6	Credit Value	02		
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 hour per week) : 3 hour per week L-T-P

Unit	Topics	No. of Lectures
1	Study of museum specimens:- • Protochordata: Herdmania, Amphioxus. • Fishes: Scoliodon, Stegostoma, Torpedo, Heteropneustes, Labeo, Exocoetus, Hippocampus, Anabus, Eel, Flat fish. • Amphibia: Necturus, Bufo, Rana, Salamander. Hyla, Axolotl larva, midwife toad, Ichthyophis • Reptilia: Chelone, Trionyx, Hemidactylus, Varanus, Chameleon, Draco, Viper, Naja, Hydrophis • Aves Local birds, Vulture, Great Indian Bustard, Lesser Frigatebird. • Mammals: Bat, Funambulus, Platypus, Rat	15
2	• Identification of poisonous and non-poisonous snakes using head scale features and models of poison Apparatus	10
3	• Demonstration of Fish Dissection (Using commercially available local fish/computer simulation YouTube videos / models and charts) • Study of general viscera and arterial system. • Study of cranial nerves V, VII, IX, and X	10
4	• Study of scales of fishes (Cycloid, Ctenoid, Ganoid, and Placoid) using permanent slides or models	05
5	• Study of different types of Feathers Beaks of birds	05
6	• Study of flight adaptations in birds or models	05
7	• Collection	10
	Keywords: Chordate Specimens. Feathers, Cranial Nerves, Amphibia, Reptile, Birds, Mammals.	

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