



# 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

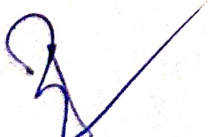
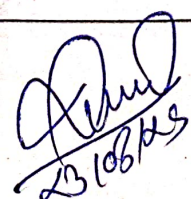
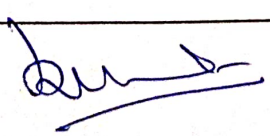
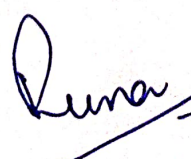
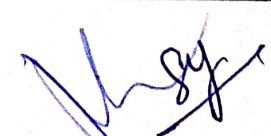


## Theory Syllabus

Part A- Introduction				
Program: Diploma		Class: B.Sc.	Semester : III	Session: 2025-26
Subject: Zoology				
1	Course Code		S2-ZOOL1T	
2	Course Title		Diversity of Chordates and Comparative Anatomy	
3	Course Type		Core Course-Major/Minor	
4	Pre-requisite (if any)		To study this course, a student must have had the subject Zoology in class B.Sc. III Sem .	
5	Course Learning outcomes (CLO)		After completion of the course the students will able to: 1. Understand chordate diversity of animals and their taxonomic positions. 2. Identify the morphological and anatomical features and basis of chordate classification. 3. Know economic importance and present status that will develop positive attitude towards conservation of biodiversity. 4. Differentiate the organism belonging to different taxa, by studying comparative anatomy. 5. The project, assignment will give them a flavor of research in studying biodiversity, taxonomy besides improving their writing skills and lay foundation of career in Zoology.	
6	Credit Value		4	
7	Total Marks:		Max. Marks: 60+40      Min. Passing Marks:35	

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Part B – Content of the course		
Total No of lectures-Tutorials-Practical: 02 hours per week		
LTP- No. of Lectures = 60		No. of Lectures
Unit	Topics	No. of Lectures
I	<p>1. Introduction to Chordates</p> <p>1.1 Traditional Knowledge on Animal Science in ancient Indian Civilization</p> <p>1.2 Origin of Chordates, General characteristics and outline classification of Phylum Chordata up to orders according to Parker and Haswell, Seventh Edition</p> <p>2. Protochordata</p> <p>2.1 General characteristics and classification of Sub- Phylum Urochordata and Cephalochordata.</p> <p>2.2 Type study of Herdmania and retrogressive metamorphosis in ascidian tadpole.</p>	12
	<p>2.3 Type study of Amphioxus and its Affinities.</p> <p>3. Agnatha</p> <p>3.1 Comparison of Petromyzon and Myxine.</p> <p>Keywords/Tags: Chordata, Herdmania, Amphioxus, Cephalochordata, Petromyzon.</p>	
II	<p>1. Pisces</p> <p>1.1. General characteristics and classification of Pisces.</p> <p>1.2. Accessory respiratory organs, Parental care in fishes.</p> <p>2. Amphibia</p> <p>2.1 General characteristics and classification of Amphibia.</p> <p>2.2 Parental Care in Amphibia and Paedomorphosis</p> <p>3. Reptilia</p> <p>3.1. General Characteristics and classification of Reptilia.</p> <p>3.2. Difference between Poisonous and Non-Poisonous snakes, Venom and Antivenom</p> <p>3.3. Poison apparatus and biting mechanism in snake.</p> <p>Keywords/Tags: Pisces, Parental care, Amphibia, Reptiles, Poison apparatus.</p>	12
III	<p>1. Aves</p> <p>1.1 Brief Introduction of "Birdman" of India - Dr. Salim Ali</p> <p>1.2 General characteristics and classification of Aves.</p> <p>1.3 Migration of birds, principles and aerodynamics of flight.</p> <p>1.4 Flight adaptation in birds.</p> <p>2. Mammalia</p> <p>2.1 General characteristics and classification of mammals.</p> <p>2.2 Adaptive radiation in mammals with reference to locomotory appendages.</p> <p>2.3 Introduction of ZSI (Zoological Survey of India)</p> <p>Keywords/Tags: Aves, Aerodynamics, Flight Adaptation, Mammalia, Adaptive Radiation, Locomotory Appendages.</p>	12



IV	<b>Comparative Anatomy of Vertebrates.</b> <ol style="list-style-type: none"> <li>1. Comparative study of integument and its derivatives of Vertebrates.</li> <li>2. Comparative study of appendicular skeleton (Limb and girdles) of Vertebrates.</li> <li>3. Comparative study of digestive system of Vertebrates.</li> <li>4. Comparative study of respiratory system of Vertebrates</li> </ol> <b>Keywords/Tags:</b> Integument, Derivatives, Girdles, Digestive System, Respiratory System.	14
V	<b>Comparative Anatomy of Vertebrates.</b> <ol style="list-style-type: none"> <li>1. Comparative study of aortic arches and heart of Vertebrates.</li> <li>2. Comparative study of Brain of Vertebrates.</li> <li>3. Comparative study of Urinogenital System of Vertebrates</li> <li>4. Study of Eye and Ear of mammals</li> </ol> <b>Keywords/Tags:</b> Heart, Brain, Kidney, Urinogenital System, Eye, Ear.	10

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## Part C-Learning Resources

### Text Books, Reference Books, Other resources

#### Suggested Readings:

1. Dhami, P.S., and Dhami, J.K. "Chordate Zoology" R.Chand & Co.(2006)
2. Young J.Z. "The Life of Vertebrates. III Edition", Oxford University Press. (2004)
3. Parker T.J. & Haswell, W.A., "Textbook of Zoology- Vertebrates", VII Edition, Volume II. (1972)
4. Hyman, L.H. "Hyman's Comparative Vertebrate Anatomy" Third Edition, Univ. of Chicago Press, Chicago & London
5. Kent, G.C., Cart R.K., "Comparative Anatomy of the Vertebrates" 9<sup>th</sup> Edition, McGraw Hill, Boston, USA. (2015).
6. Jordan and Verma; "Chordate Zoology". Revised & enlarged edition, S. Chand & Co. (1965)
7. Jordan E.L., "Chordate Zoology" S. Chand & Co., New Delhi (2009 reprint),
8. Kotpal, R.L. "Modern Textbook of Zoology- Vertebrates", Rastogi Publications, Meerut (2000)
9. Tortora, G.J. & Derrickson, B.H. "Principles of Anatomy & Physiology", Global Edition, John Wiley & Sons, Inc. (2017)
10. Kotpal, R.L. "Chordate and Comparative Anatomy" Edition-I, Rastogi Publications, Meerut (2017).
11. Sinha A.K., Adhikari S., Ganguly B.B "Biology of Animals" Vol II, New Central Book Agency, Calcutta (2012).
12. Deoras, P.J., "Snakes of India" National Book Trust of India, (1981)
13. Kotpal, R.L., Shastri. Shukla. "Comparative Anatomy and Developmental Biology", Edition-I, Rastogi Publications, Meerut (2019).
14. Banerjee, Ananda., "Common Birds of the Indian Subcontinent" A field Guide, II Edition, Rupa & Co., New Delhi (2008).
15. Ali, Salim., "The Book of Indian Birds", 12th Edition, Bombay Natural History Society, Mumbai (1968)
16. Kulshreshtha, S.K., "Comparative Anatomy of Vertebrates", II revised Edition, Anmol Publications Pvt Ltd, New Delhi, 2004
17. जैकब डेनिस, शर्मा आशा, नंदचहल कुमकुम, "कोर्डेटा, संरचना एवं उद्विकास", रमेश बुक डिपो, जयपुर
18. कोटपाल, आर.एल., "कशेरुकी प्राणी विज्ञान" रस्तोगी पब्लिकेशंस, मेरठ (2018)
19. शर्मा, डा. आशा, कौशिक, राजेंद्र, "कोर्डेटा, संरचना व कार्य" रमेश बुक डिपो, जयपुर
20. Books Published by MP Hindi Granth Academy, Bhopal

#### 2. Suggestive digital platforms web links.

1. <https://opentextbc.ca/biology2openstax/chapter/chordates/>
2. SWAYAM (functional anatomy and regulation of vision, hearing, taste, smell and touch. Link -[https://www.swayamprabha.gov.in/index.php/program/current\\_he/9](https://www.swayamprabha.gov.in/index.php/program/current_he/9)

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3. [www.prodissector.com](http://www.prodissector.com)
4. <http://www.ignouhelp.in/ignou-lse-10-study-material/>
5. <https://animaldiversity.org/site/accounts/information/Chordata.html>
6. <https://www.mphindigranthacademy.org/>

Suggested equivalent online courses:

SWAYAM (Chordates) Link

1. <https://www.youtube.com/embed/M2uE0CW83NE>
2. <https://www.youtube.com/embed/tFy9D5Eo-dc>
3. <https://www.youtube.com/embed/gq1KPQCtNcQ>

#### Part D-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):30	Class Test Assignment/Presentation	Total - 30
External Assessment : University Exam Section: 70 Time : 03.00 Hours	Section(A) : Objective Type Question Section(B) : Short Question Section(C) : Long Questions	Total 70

Any remarks/suggestions:

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