FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF ZOOLOGY
COURSE CURRICULUM

PART- A: Introduction

Program: Bachelor in Life Science *(Diploma / Degree/ Honors)*		Semester - IV	Session: 2024-2025
1	Course Code	ZOSC-04T	
2	Course Title	Diversity of Chordates and Comparative Anatomy	
3	Course Type	Discipline Specific Course	
4	Pre-requisite (if, any)	*As per Program*	
5	Course Learning. Outcomes (CLO)	After successfully completing this course, the students will be able to: ➢ Develop understanding of the characters used to classify and differentiate the organisms belonging to different taxa and the evolutionary history and relationship between the different classes of chordates. ➢ Acquire knowledge and Develop critical understanding of the comparative anatomy and functioning of complex systems of Pisces to Mammalia. ➢ Learn the comparative account of Integument with its derivatives, digestive system and Skeletal and Muscular System. ➢ Understand the Digestive system and its anatomical specializations with respect to different diets and feeding habits and respiratory organs in vertebrates used in aquatic, terrestrial and aerial vertebrates. ➢ Understand the evolution of heart, aortic arches, and Learn the evolution of brain, sense organs and urinogenital system.	
6	Credit Value	3 Credits	*Credit = 15 Hours - learning & Observation*
7	Total Marks	Max. Marks: 100	Min Passing Marks: 40

PART -B: Content of the Course

Total No. of Teaching–learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

Unit	Topics (Course contents)	No. of Period
I	**Diversity in Protochordates and Chordates:** General characteristics & classification of Chordata up to orders with examples. **Cephalochordates:** Type study – Amphioxus and its affinities, **Agnatha:** Comparative account of Petromyzon and Myxine	11
II	**Structure and function of integument and skeletal systems Alimentary canal:** Structure of integument from fishes to mammals with an account on epidermal and dermal derivatives and their functional significance, Anatomy of Axial skeleton from fishes to mammals. Comparative anatomy of appendicular skeleton: limbs and girdles from fishes to mammals. Comparative account with structure of alimentary canal and digestive glands in vertebrates.	11
III	**Comparative anatomy and functional Significance of, Respiratory organs, Heart Aortic Arches and Endocrine Glands:** Structure of Gills, Lungs, Air sacs and Swim bladder in Vertebrates, Structure and evolution of heart in vertebrates, Evolution of aortic arches and their significance in vertebrates. Endocrine Glands & their function. Disorders of Thyroid, Adrenal, Pancreas and Pituitary.	11
IV	**Comparative anatomy and functional Significance of Urinogenital System, Brain & Sense Organ:** Types and development of kidneys and their ducts in anamniotes and amniotes. Nephron- structure, types and their function, Comparative anatomy of Urinogenital system. Comparative anatomy of Brain of vertebrates, Structure of Ear and Eye.	12
Keywords	*Chordates, Protochordates, Petromyzon And Myxine, Comparative Anatomy, Integument Lungs, Air Sacs Aortic Arches, Kidney, Brain*	

Signature of Convener & Members (CBoS) :

PART–C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –

- Jordan, E. L. and Verma, P. S. (2013) Chordate Zoology (14th edition).
- Saxena, R. K. and Saxena, S. (2015) Comparative Anatomy of Vertebrates (2nd edition).
- R.L. Kotpal, Modern Text Book of Zoology, Vertebrates, Rastogi Publication, Merut
- Tiwari, V.K. Unified Zoology, B.Sc. Part I, Shivlal Agarwal and Company, Indore

Reference Books Recommended –

- Young, J. Z. (2004). *The Life of Vertebrates*. III Edition. Oxford university press.
- Weichert, C.K. (1970) Anatomy of Chordates (4th edition).

Online Resources–
e-Resources / e-books and e-learning portal

- https://swayamias.com/zoology-optional-coaching/
- https://www.swayamprabha.gov.in/index.php/program/archive/9
- https://www.acsedu.co.uk/Courses/Environmental/VERTEBRATE-ZOOLOGY-BEN104-528.aspx
- https://www.nu.edu/degrees/mathematics-and-natural-sciences/courses/bio416/
- https://www.youtube.com/watch?v=qSY5iXHHi88
- https://www.youtube.com/watch?v=tz8ljJXbBCQ
  https://www.youtube.com/watch?v=mXECx3s8yEQ

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	**100 Marks**
Continuous Internal Assessment (CIA):	**30 Marks**
End Semester Exam (ESE):	**70 Marks**

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): **20** +**20** Assignment / Seminar - **10** Total Marks - **30**	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against **30** Marks
End Semester Exam (ESE):	**Two section – A & B** Section A: **Q1.** Objective – **10 x1= 10** Mark; **Q2.** Short answer type- **5x4 =20 Marks** Section B: Descriptive answer type qts.,**1out of 2** from each unit-**4x10=40 Marks**	

Name and Signature of Convener & Members of CBoS: