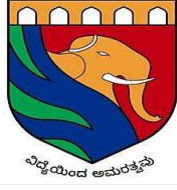


RAICHUR
UNIVERSITY



RAICHUR UNIVERSITY, RAICHUR

**Under Graduate Curriculum for Degree of
Bachelor of Science (B.Sc) in**

**ZOOLOGY
(I & II Semester)**

**As per Revised NEP 2024
With Effect from the Academic year from
2024-25 and onwards**

Zoology
B.Sc., Semester – II (SEP) w.e.f 2024-25
Theory Syllabus

Course Title: Biology of Chordates & Comparative Anatomy	Course Code:
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Course Outcomes (COs):

At the end of the course, students will be able to:

- 1. Group animals on the basis of their morphological characteristics.**
- 2. Demonstrate identification of characters among Chordates.**
- 3. Explain structural and functional differences among of non-vertebrate chordates and vertebrates.**
- 4. Establish the evolutionary relationship among classes of vertebrates.**
- 5. Understand basics of classification of Chordates.**
- 6. Learn the habit and habitat of the species.**
- 7. Develop the skills to identify the economic importance of different species.**
- 8. Distinguish uniqueness of a particular animal and appreciate its biological importance in the perspective of conservation point of view.**
- 9. Will be able to understand the physiology of certain organ systems.**
- 10. Appreciate the importance of every organism in the biosphere.**

Units	Description
1	<p>Origin of Chordates in the light of recent theories. General Characters of Chordata, Outline classification of Protochordates with examples. Life cycle of Salpa and Branchiostoma. Significance of retrogressive metamorphosis.</p> <p>Brief history of Agnatha and Gnathostomata.</p> <p>Pisces: Chondrichthyes and Osteichthyes, Lateral line sensory system, adaptations in fishes.</p> <p>Type study: Shark</p>
2	<p>Amphibia: Origin and classification of amphibia. Adaptive radiation in amphibia, Neoteny, Breeding behaviour and parental care.</p> <p>Type study: <i>Rana</i></p> <p>Reptilia: Origin, classification and adaptive radiation in living reptiles. Extinct reptiles. Economic importance of reptilian.</p> <p>Type study: <i>Calotes</i></p>

3	<p>Aves: Origin and brief classification of birds. Aerial adaptation and mechanism of flight, Courtship and breeding behaviour, Migration in birds. Economic importance of birds.</p> <p>Type study: Pigeon</p> <p>Mammalia: Origin, classification and evolution of mammalia, Aquatic mammals, economic importance of mammalian by-products.</p> <p>Type study: Rat</p>
4	<p>Comparative anatomy: Comparative axial and appendicular skeletal system in vertebrates. Comparative account on skin, brain, heart, aortic arches and kidneys in vertebrates.</p>

Suggested Reading:

- 1. Colbert *et al*: Colbert's Evolution of the Vertebrates: A history of the backbone animals through time. (V-Ed. 2002, Wiley-Liss).**
- 2. Hildebrand: Analysis of Vertebrate Structure (4th ed 1995, John Wiley)**
- 3. Ernst Mayer and Peter D. Ashlock: Principal Elements of Taxonomy.**
- 4. G. G. Simpson. Principle of animal taxonomy; Oxford IBH Publishing Company.**
- 5. Kenneth V. Kardong (2015) Vertebrates: Comparative Anatomy, Function, Evolution McGrawHill.**
- 6. McFarland et al.,: Vertebrate Life (1979, Macmillan publishing).**
- 7. Romer and Parsons: The Vertebrate Body (6th ed 1986, CBS Publishing Japan).**
- 8. Young: The Life of Vertebrates (3rd ed 2006, ELBS/Oxford).**
- 9. Parker T. S. and Haswell W. A. (1978). TextBook of Zoology, Vol. II, ELBS.**
- 10. R.L Kotpal Rastogi Publication.**
- 11. Jordan & Verma - S.Chand Publication.**
- 12. Nagabhushan C M (2019). Advanced Practical Zoology, Edurite publications, Delhi.**

Zoology
B.Sc., Semester – II (SEP)
Practical Syllabus

Course Title: Biology of Chordates and Comparative anatomy.	Course Code:
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Course Outcomes (COs):

At the end of the course, students will be able to:

1. Understand basics of classification of Chordates.
2. Learn the diversity of habit and habitat of the species.
3. Develop the skills to identify different species of animals.
4. Gain the skills in handling animal organisms.
5. Enhance basic laboratory skills, observation and drawing.
6. Demonstrate the structure and functions of internal organs among the vertebrates.
7. Explain structural and functional characteristics of vertebrates.
8. Understand evolutionary relationship among vertebrates.
9. Take up research in biological sciences.
10. Gain the skills in dissection and mounting of given species.

Expt. No.	List of Experiments
1.	Protochordates: Phylogenetic study of <i>Balanoglossus</i> , <i>Herdmania</i> and <i>Amphioxus</i> .
2.	Cyclostomes: <i>Petromyzon</i> and <i>Myxine</i> .
3.	Pisces: Cartilaginous fishes and bony fishes.
4.	Fishes of economic importance.
5.	Amphibia: Frog, Salamander, <i>Axolotl</i> larva, <i>Ichthyophis</i> . Parental care.
6.	Reptilia: Lizard, Gecko, <i>Chameleon</i> , Monitor, Iguana, Crocodile, Alligator, Tortoise, Turtle, Poisonous and non-poisonous snakes.
7.	Aves: Migratory birds and domestic birds.
8.	Mammals: Domestic animal husbandry animals, by-products.
9.	Virtual dissection/cultured specimens: to show different organ systems in Rat.
10.	Comparative account on Skin of Shark, Frog, Lizard, Bird and human.
11.	Comparative account on Brain of Fish, Frog, Lizard, Bird and human.
12.	Comparative account on Heart of Shark, Frog, Lizard, Bird and human.
13.	Axial skeletal system of Rabbit (vertebra, pectoral, pelvic and limb bones).

***Note: Students should draw the diagrams rather than just pasting the pictures in the records.**