



**SARVODAYA KELAVANI SAMAJ MANAGED,
SHREE MANIBHAI VIRANI & SMT. NAVALBEN VIRANI SCIENCE
COLLEGE**

AN AUTONOMOUS COLLEGE- AFFILIATED TO SAURASHTRAUNIVERSITY, RAJKOT

Re-accredited at the 'A' Level (CGPA 3.28) by NAAC
'STAR' College Scheme & Status by MST-DBT
A College with Potential for Excellence - CPE (Phase-II) by UGC
UGC-DDU KAUSHAL Kendra
Accredited at the G-AAA Highest Grade 'A-1' Level by KCG, Govt. of Gujarat
UGC-DDU KAUSHAL Kendra
GPCB-Government of Gujarat approved Environment Audit Centre

Enclosure I (B)

**DSE – Allied ZOOLOGY
SEMESTER – II**

(With Biochemistry)

19UBCDA201	Zoology - I	3 Hrs/Week	3 Credits
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OBJECTIVE

- The students pursuing this course would have to develop in depth understanding various aspects of the Zoology.
- The working principles, design guidelines and experimental skills associated with different fields of Zoology.

Unit –I Animal Taxonomy

(09 Hrs)

- Basics of Taxonomy.
- An introduction to in-vertebrate and Vertebrate animals.
- Systematic of Non-chordate Animals.
- Systematic of Lower Chordate Animals.
- Systematic of Higher Chordate Animals.

Unit-II Forms & Functions in Animals (09 Hrs)

Type Study: Earth worm.

- External Characters
- Digestive system
- Reproductive system
- Nervous system
- Structure of Septal Nephridia

Unit-III: Developmental Biology (09 Hrs)

- Structure of Frog Sperm and Ovum.
- Fertilization in Frog.
- Cleavage in Frog.
- Blastula in Frog.
- Gastrula. in Frog.

Unit-IV: Evolution and Animal Behaviour (09 Hrs)

- Isolation
- Speciation
- Genetic Drift.
- Social Behaviour in Animals
 - (1) Termite
 - (2) Honey-bee
- Parental Care in Animals
 - (1) Pices
 - (2) Amphibia.

Unit-V Applied Zoology (09 Hrs)

A study of general structure and characters of following pathogenic animals.

- Entamoeba.
- Trypanosoma.
- Filarial worm.
- Guinea worm.
- Ascaris.

Text Books:

1. Jordan E. L & Varma P.S.(2010) Non-chordate Zoology, S.Chand & Co. Ltd. New Delhi, 4th edition.(for unit 1, 2 &5).
2. Gilbert S.F. (2010) Developmental Biology (Sinauer) 10th edition.(for unit 3).
3. Mathur R (2010) Animal Behaviour, Rastogi Publications, Merrut (for unit 4).
4. Rastogi, V. B. (1994) Organic evolution. Kedernath Ramnath, India.(for unit 4).

Reference Books:

1. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). *The Invertebrates: A New Synthesis*, III Edition, Blackwell Science.
2. Walter, H.E. and Sayles, L.P; *Biology of Vertebrates*, Khosla Publishing House

PRACTICALS:

19UBCDA202	Zoology-I Practical	6 Hrs/Week	2 Credits
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Objectives:

- The students pursuing this course would have to develop in depth understanding various aspects of the Zoology.
 - The working principles, design guidelines and experimental skills associated with different fields of Zoology.
1. Identification and Classification of Protozoa and Porifera.
 2. Identification and Classification of Coelenterate to Annelida.
 3. Identification and Classification of Arthropoda.
 4. Identification and Classification of Mollusc & Echinodermata.
 5. Identification and Classification of Protochordate and Pisces.
 6. Identification and Classification of Amphibia & reptiles.
 7. Identification and Classification of Aves and Mammal.
 8. Study of most diversified some animals.
 9. Systems of Earthworm.
 10. Developmental Biology of Frog.
 11. To compare embryonic development of Frog and Chick.
 12. Study of Animal Behaviour.
 13. To study the Learning behavior in animals.
 14. Study of Pathogenic Animals.
 15. Digestion of starch by salivary Amylase.
 16. To determine the presence of Lipid by qualitative test.
 17. Ascending paper chromatography
 18. Circular paper chromatography.

19. To study Mitosis division.
20. To study Meiosis division.
21. Isolation and identification of Chick embryo.
22. To study the isolation among Lung fishes.
23. Study of Zoogeography as reference to speciation.
24. Study of Living fossils and connective link.

References:

1. Lal S. S., Practical book of Non-chordate.
2. Lal S. S., Practical book of Chordate., 2014, Rastogi publication, Meerut .
3. Jaysurya, Arumugam A., Zoology Practical, 2015, Saras Publication, South India.