

**SCHEME OF EXAMINATION  
&  
DETAILED SYLLABUS  
For  
PRE Ph.D.  
COURSE WORK  
OF  
ZOOLOGY  
(PPCW3-U)**



**KALINGA  
UNIVERSITY**

**Kalinga University, Naya Raipur  
Chhattisgarh**

## **Program Outcome**

- Develop substantive knowledge in their area of specialization
- Master the analytical and methodological skills required to evaluate and conduct research in their area of specialization and related areas.
- Design and conduct original research in their area of specialization.
- Demonstrate the ability to communicate the results of their research in a clear and effective manner.
- Demonstrate an ability to work effectively with other people from various ethnic, educational, and work experience backgrounds.
- Demonstrate an understanding and concern for the high ethical standards in business research, teaching and service.
- Demonstrate the ability to teach college-level courses in their area of specialization.

## **Program Specific Outcome**

- Distinguish various aspects of higher education-including perspectives on its past, present, and future.
- Interpret and communicate knowledge of higher education that informs research, policy, and professional practice.
- Demonstrate competence in designing, conducting, and communicating (including written form) research that generates new knowledge.
- Identify and address ways in which power operates in higher education, and has been differentially distributed by race and by other marginalized social identities.



**ZOOLOGY**

**Unit – I**

Binomial concept, nomenclature and concepts of genus and species. Classification and general organization of animal kingdom , up to class of both Invertebrates and vertebrates Cell organization EM structure of cell, cell organelle, PM, Golgi bodies, Mitochondria, Lysosome and Ribosomes tissue concept and its various types. Cell cycle and cell division.

**Unit – II**

Brief knowledge of carbohydrate, protein, fat, amino acids, vitamins, DNA and RNA.

**Unit – III**

Physiology of digestion, respiration, excretion, enzymes and endocrine gland.

**Unit – IV**

Tools and techniques – General principle, types and methodology of chromatography, electrophoresis centrifugation and spectroscopy.

**Unit – V**

Ecology and biodiversity, concept of ecology-Biotic and abiotic factors, Biodiversity conservation methods: in-Situ and ex-Situ , population dynamics , community ecology , pollution.

**REFERENCES :**

Principal of Systematic Zoology By Ernst Mayr

Fundamental of Ecology By E.P. Odun

Ecology & Environment By P.D. Sharma

Cell Biology By C.B. Powar

Principle & Techniques of Biochemistry & Modern Biology

By Keith Wilson , John Walker

Animal Physiology By Richerd W. Hill, Gordon A. Wayre  
Lehninger “ S Principle of Biochemistry 4<sup>th</sup> Edition , Nelson & Cox  
Biosystematics & Taxonomy By Dr. RC. Thripati  
Invertebrate & vertebrate By R.L. Kotpal  
Molecular Celbiology By Lodis & Baltimore

