



जम्मू केन्द्रीय विश्वविद्यालय
Central University of Jammu

राया-सुचानी (बगला), जिला: सांबा-181143, जम्मू (जम्मू और कश्मीर), भारत
Rahya-Suchani (Bagla), District- Samba, 181143, Jammu (Jammu and Kashmir), India

2. Sokal, R., James, F. (1973) Introduction of Bio-Statistics, W.H. Freeman & co., Top Company Ltd., Tokyo, Japan.
3. Introduction to Bioinformatics (1st Edition) by Arthur M. Lesk, Oxford University Press, 2002
4. Bioinformatics: Sequence and Genome Analysis by Mount D., Cold Spring Harbor Laboratory Press, New York. 2004
5. Bioinformatics- a Practical Guide to the Analysis of Genes and Proteins by Baxevanis, A.D. and Francis Ouellette, B.F., Wiley India Pvt Ltd. 2009.
6. Orengo (2003) Bioinformatics, Genes, Proteins and Computers Garland Book Publishers.
7. Westhead et.al (2003) Bioinformatics Instant Notes, Viva Books (Indian edition).
8. Baxevanis A.D. and Francis Ouellette B.F. (2001) Bioinformatics: A practical guide to the analysis of genes & proteins John Wiley & Sons publication, New York.
9. Bioinformatics in the Post-Genomic Era by Jeffrey Augen, Addison-Wesley Publisher, 2004.

Course Title: Animal Taxonomy

Credit: 4 (L-4, T-0, P-0)

Course code:

Contact Hrs/Week: 4 Hrs

Course Outcomes

This course develops concepts in animal taxonomy and systematic, modern methods of taxonomy and systematics and their application. The student will get familiarized with different animal taxonomy techniques and their significance.

Course Learning Outcomes (CLO): The students will be able to:

1. Understand historical and modern methods of animal classification and systematics
2. Get acquainted with concepts and techniques including of basic and advance type used in studying animal taxonomy and systematics.
3. Apply the principles of taxonomy and its practical approach in biology
4. Communicate effectively the learnings of the subject and understand the significance and techniques of Animal systematics and taxonomy.
5. Will understand role of animal taxonomy in present scenario with the future dimensions

Unit I

Animal Taxonomy: Basic concepts, principles and methods. Animal systematics, historical resume of systematic, domain concept in systematics. Classification system types: two, three, four, five, and six kingdom classification. Concept of species-taxonomic diversity within species.

Unit II

Species concepts and Theories of biological classification. Evolutionarily significant units.

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Principles of classification; Linnean System of classification; Binomial Nomenclature. Taxonomy, Types of Taxonomy, Alpha Taxonomy, Beta Taxonomy, Pre-Linnean Taxonomy, Linnean Taxonomy, Nomenclature and Classification. Phylogenetic tree: types and role of phylogenetic tree construction in animal taxonomy

Unit III

Taxonomic procedures: collection, preservation, curation, Identification process. Taxonomic keys- types, merits and demerits. Systematic publications. Taxonomic Characters, types of lineages, lineage change, artificial lineage.

Unit IV

International Code of Zoological Nomenclature (ICZN), interpretation and application of important rules of zoological nomenclature. Formation of scientific names of various taxa.

Unit V

Modern trends in animal taxonomy - Numerical taxonomy, cytotaxonomy, chemotaxonomy, molecular taxonomy, cryo-taxonomy, neo-taxonomy, and behavioral taxonomy. Applications and significance of animal systematics and taxonomy in biology. Tree of Life. Geometric Morphometrics. Phylogenetic trees.

Suggested Readings:

1. M. Kato. 2000 The Biology of Biodiversity. Publisher Springer Verlag, Japan ISBN 978-4431659327
2. Pandit, D.N. Animal Taxonomy: Principles and Practices. Narendera Publishing House. ISBN 9789390309214.
3. G.G. Simpson. 2012. Principle of animal taxonomy, Scientific Publishers. ISBN 978-8172337636
4. Kapoor, V.C. 2019. Theory and Practice of Animal Taxonomy and Biodiversity, 8th Edition. Oxford & IBH Publishing. ISBN 9788120417991.

Course Title: Animal Taxonomy Lab

Credit: 2 (L-0, T-0, P-4)

Course code:

Contact Hrs/Week: 4 Hrs

Lab component

1. Preparation of Taxonomic keys for different animal group.
2. Preparation of taxonomic animal models for understanding various taxonomic attributes of animal classification.
3. Taxonomic procedures and systematic publication methods.
4. Animal taxonomic studies using geometric morphometrics.
5. Preparation of cladogram
6. Preparation of Tree of Life.