Course Objectives:

The course aims to:

1. Provide in-depth knowledge of Taxonomy in animal sciences
2. Develop concepts about importance of the Systematics.
3. Study the history of Systematics with basic rules
4. Demonstrate about identifications and naming of the organisms according to international code of zoological nomenclature.

(Note: Principles of Systematic Zoology 60% and 40% weightage, respectively).

Course Contents:

1. **Importance and application**s **of systematics:** Taxonomy in Animal science, Systematics as a profession and its future perspectives.
2. **History of taxonomy**: Systematics, basic terminology of Systematics, theories of biological classifications.
3. **Taxonomic characters**: Kinds and weightage, micro taxonomy, taxonomic categories: specific category, intraspecific category, higher categories; Species concept.
4. **Typological species concept**: Nominalist species concept, biological species concept, Evolutionary species concept. Kinds of different species, Speciation,
5. **Taxonomic procedures**, taxonomic collection; their preservation and duration, Taxonomic keys, different kinds of keys and their merits and demerits.
6. **Formation of specific names,** brief concept of cladistics, phylogenetics. Theory and practice of cladistics and phylogenetic systematics.
7. **Systematics publications**: International code of zoological nomenclature; its objective, principles, interpretation, application of important rules, with reference to: Zoological nomenclature, law of priority and validity of names.

Practicals:

1. Study of preserved invertebrate species and their classification upto class level.
2. Collection, preservation and identification of common species with the help of keys.
3. Preparation of keys for the identification of specimens.
4. Methods of statistical analysis of samples from populations T-test, Analysis of variance etc.

Books Recommended:

1. Wiley, E. O. and Lieberman, B. S. 2011. Phylogenetics: Theory and practice of phylogenetic systematics. 2nd Ed. Wiley-Blackwell.
2. Hill, New York.
3. Mayer, E. and Asblock, P.D. Principles of Systematic Zoology. 1991. McGraw-Hill, New York

4. Mayr, E. *Animal Species and Evolution,* 1985.Harvard University Press.
5. Heywood, V.H. *Taxonomy and Ecology.* 1975. Academic Press, London.
6. Whili, M.J.D. *Modes of Speciation,* 1978. W.H. Freeman and Co., San Francisco.