Programme outcome, Programme Specific outcome and Course Outcome of M.Sc. Zoology

Program Outcomes of M.Sc.

PO 1: Provide an in-depth knowledge in Life Science and allow the apprentices to take Master's degree certification in Zoology.

PO 2: Allow the students to specialize in a given branch of Zoology as an elective course.

PO 3: Provide opportunities in higher education and development in the professional front. It also gives opportunity of career advancement in teaching, research and industries.

PO 4: Inculcating Scientific Ethics and Temper.

PO 5: Integration of Interdisciplinary thinking and practice.

Program Specific Outcomes M.Sc. ZOOLOGY

PSO 1: Provide opportunities to gain knowledge in the field of non-chordate and chordate biology, ecological theories, cell biology, genetics, parasitology, insect biology, developmental biology, immunology, biochemistry, genetic engineering, endocrinology, and aquatic biology

PSO 2: Provide practical knowledge on handling of animals, using them as model organism, mammalian tissue section identification and preparation of mammalian histological sections, karyotyping, chromosome preparation, DNA isolation, gel electrophoresis, restriction digestion.

PSO 3: Providing an in-depth knowledge on using tools and techniques required for the experiments for molecular biology, immunology, endocrinology, biochemistry, parasitology, and aquaculture and fisheries biology.

PSO 4: Provide understanding on Taxonomy and biometry, Animal behaviour, Wild life biology and conservation, biodiversity, vast area of ecosystem, reproductive endocrinology, genomics, transcriptomics, genomics, molecular cell biology, aquatic biology, biotechnology and translational biology.

PSO 5: Providing detailed insight into the concepts of applied ecology, evolution, biostatistics and animal physiology, different ecological model, interaction between animal and ecosystem, trait analysis and construction of phylogenetic tree.

Programme Outcome and Programme Specific Outcome Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
PO1					
PO2					
PO3					
PO4					
PO5					

Outline Structure of M.Sc. (ZOOLOGY) SEMESTER COURSE (Session 2018-2020)

Calcutta University

- ZCT 101 Non-Chordate Biology
- ZCT 102 Ecological Theories
- ZCT 103 Cell Biology
- ZCT 104 Genetics
- ZCT 105 Parasitology
- ZCT 106 Insect Biology
- ZCP 107 Laboratory Course for Core Subjects
- ZCT 208 Chordate Biology
- ZCT 209 Developmental Biology
- ZCT 210 Immunology
- ZCT 211 Biochemistry and Genetic Engineering
- ZCT 212 Endocrinology
- ZCT 213 Aquatic Biology
- ZCP 214 Laboratory Course for Core Subjects
- ZCT 315 Taxonomy and Biostatistics
- ZCT 316 Animal Behaviour and Wildlife Biology
- ZCP 317 Laboratory Course for Core Subjects
- ZET 325 Molecular Cell Biology
- ZET 330 Reproductive Endocrinology
- CBCC A Human Physiology
- CBCC B Biology and application of flowering plants
- ZCT 432 Applied Ecology
- ZCT 433 Evolution
- ZCT 434 Comparative Animal Physiology
- ZCP 435 Laboratory Course for Core Subjects
- ZLI 436-449 Lab Internship (Internal Assessment, Dissertation & Seminar)*
- ZCP 450 Grand Viva

**Abbreviations: ZCT: Core Theory, ZET: Elective Theory, CBCC: Choice Based Credit Courses

Course outcome of M.Sc. Zoology

Course	Outcome
ZCT 101 Non-Chordate Biology	To understand the biology, anatomy, physiology of various systems of invertebrates.
ZCT 102 Ecological Theories	To understand the basic and advanced theories and concepts of ecology.
ZCT 103 Cell Biology	To understand the structure, intra and inter cellular mechanisms of cell.
ZCT 104 Genetics	To understand the advanced mechanisms of genetic regulations of cell.
ZCT 105 Parasitology	To understand the host-parasite interactions and patho-physiology of different parasitic diseases.
ZCT 106 Insect Biology	To understand the physiology of insects.
ZCP 107 Laboratory Course for Core Subjects	*To understand the various anatomy of different invertebrate specimens.* To analyze the different habitats of ecosystem. *To study histology. *Genetic analysis of chromosomes, DNA isolation and Agarose Gel Electrophoresis
ZCT 208 Chordate Biology	To understand the biology, anatomy, physiology of various systems of vertebrates.
ZCT 209 Developmental Biology	To study and understand the developmental process of animal world.
ZCT 210 Immunology	To study and understand the immune response in invertebrates and vertebrates.
ZCT 211 Biochemistry and Genetic Engineering	Basic and advanced understanding of biochemical processes of cell and modern applications of Genetic Engineering.
ZCT 212 Endocrinology	To study and understand the hormone synthesis and its regulation.
ZCT 213 Aquatic Biology	Understanding of the environment and biology of life under water.
ZCP 214 Laboratory Course for Core Subjects	* Morphometric study of various specimens. * To study the immunological response of peritonitis in model organisms. * Identification of endocrine glands and reproductive stages in vertebrates. *Demonstration of ELISA,. Immunofluorescence and chromatography.
ZCT 315 Taxonomy and Biostatistics	* To understand the various taxonomic nomenclature for construction of phylogenetic tree and establish the evolutionary relationship from the supplied data. *Application of different statistical methods for biological data analysis.
ZCT 316 Animal Behaviour and Wildlife Biology	To Study the biology of wild animals, their behaviour, environment and conservation.

ZCP 317 Laboratory Course for Core Subjects	* Application of different methods for biodiversity analysis.
ZET 325 Molecular Cell Biology	An in-depth knowledge of molecular cell biology.
ZET 330 Reproductive Endocrinology	An in-depth knowledge of reproductive endocrinology of vertebrates.
CBCC A Human Physiology	Understanding of different physiological mechanisms in human.
CBCC B Biology and application of flowering plants	To understand the concept and propagation methods of plants.
ZCT 432 Applied Ecology	Study of various applications of ecology in our daily life.
ZCT 433 Evolution	To understand the evolutionary concepts and its applications.
ZCT 434 Comparative Animal Physiology	To study and compare the different physiological systems of both invertebrates and vertebrates.
ZCP 435 Laboratory Course for Core Subjects	To study and analyze various ecological parameters of animals and plants and Construction of phylogenetic tree for evolutionary relationships.
ZLI 436-449 Lab Internship (Internal Assessment, Dissertation & Seminar)*	To develop on hand training in handling instruments and submission of project report.
ZCP 450 Grand Viva	To assess the overall knowledge learned throughout the course.

Course Outcome and Programme Specific Outcome Mapping

COURSE	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
ZCT 101					
ZCT 102					
ZCT 103					
ZCT 104					
ZCT 105					
ZCT 106					
ZCP 107					
ZCT 208					
ZCT 209					
ZCT 210					
ZCT 211					
ZCT 212					
ZCT 213					
ZCP 214					
ZCT 315					
ZCT 316					
ZCP 317					
ZET 325					
ZET 330					
CBCC A					
CBCC B					
ZCT 432					
ZCT 433					
ZCT 434					
ZCP 435					
ZLI 436-449					
ZCP 450					