CO, PO, PSO

Department of Zoology
Bankura Christian College

Programme Outcome of Zoology (PO)

P O	Programme Outcome	Description
PO. 1	Sound knowledge in different fields of Zoology	Students are expected to learn the fundamental concepts, principles and processes underlying the academic field of Zoology with special reference to the characteristics of animal diversity, ecological aspects, comparative anatomy and development , physiology and biochemistry, genetics and evolutionary biology, animal biotechnology, applied zoology, aquatic biology, immunology, reproductive biology, insect, vectors and diseases, apiculture, aquarium fish keeping, medical diagnostics, sericulture and microbiological relationship.
PO. 2	Professional skills	Professional skills in the field of Zoology in relation to academia and industry require sound knowledge of the core courses as well as related fields of study such as chemistry, physics, mathematics etc. and above all interest in studying with the habit of asking questions to find out the cause and effect. Therefore, there must be the sincerity from both the teachers and learners to extend curiosity and grasp knowledge.
PO. 3	Environmental awareness	Going through the courses as enshrined in the syllabus concerned students would generously and spontaneously develop the characteristics of thinking on the global environmental aspects.
PO. 4	Designing and conducting experiments to test a hypothesis	On obtaining wholesome knowledge from learning the courses it would be possible for the learners to step into higher learning which requires designing experiments to prove hypotheses.
PO. 5	Job opportunity	Biological Sciences today extend great opportunity towards sincere learners for healthy jobs in different fields beside academia such as health, medicines, research, biotechnological industry and such many. Therefore the students must be prepared in such a way so that they may able to face these competitive fields.

Programme Specific Outcomes of Zoology (PSO)

PSO	Description
PSO. 1	The core courses include diversified fields of life sciences viz: a) Overall concept of living organisms with special reference to animal kingdom; wherein it would be possible for the learners to have an idea of diverse group of animals, their structural aspects with functional anatomy . b) Concept of classifying these diversified groups of animals using taxonomical approaches. Evolution of animals are studied by following evolutionary principles. c) Idea of developing ecological concepts in relation to individual, population and community along with the roles in organizing ecosystems and other structural and functional components. d) Similarities in Biochemistry ,physiology and molecular aspects of all living organisms are taught in the light of modern approaches to develop the concept and generate interest . e) Molecular biological parameters in the form of DNA,RNA and proteins and their similarities and uniqueness in all living organisms. f) Protective approaches of animals against infectious diseases termed as immunity are studied to develop global concept of immunity following immunological principles. g) Development of animals from fertilized embryo is studied in relation to amphibian and avian embryonic development to have an overall concept of developmental pattern in animals.. h) Endocrine regulation and coordination of different physiological system are studied in an independent course in the form of endocrinology. i) Heredity and variation of animals are studied following the general principles of genetics. Therefore using these study materials it becomes possible for the learners to develop improved knowledge on the field.
PSO.2	Applied zoology in the form of fish farming, poultry etc. are studied independently by including separate programme called department specific elective in broader perspective so that the learners become seriously devoted to the subject.
PSO. 3	Skill enhancement courses are introduced such as medical technology……..etc. to develop specific skill in the area of self development to start the learners own laboratories.
PSO. 4	Generic Elective courses have been incorporated as interdisciplinary to teach overall concept of the subject so that student from other department of study may choose the courses according to their interest.
PSO. 5	Students ripen their investigative proficiency so that they can open up the entrances of the future knowledge world.
PSO. 6	To help the students for development of essential academic skills like critical thinking, analytical reasoning, research skills to identifying various Invertebrate and Vertebrate fauna and their classification as well as to understand the relations among these organisms with an evolutionary perspective.

PSO.7	Students will be able to analyze and solve the problems related to animal sciences without relying on assumptions and guesses.
PSO 8	Students will be able to make solutions of biological problems by experimentation and subsequent data processing by modern technologies and computer applications.
PSO 9	The programme will fortify the students to develop fundamental knowledge in biodiversity and their conservation, pollution of environment and their control measures.
PSO 10	They will able to understand the basic zoological principles with critical understanding and analytical skills as well as to develop effective methods for experimentation and problem solving.
PSO 11	The programme will help the students to learn the safety measures in animal handling and management programmes in laboratories. Students will be able to learn the field survey for ecological studies as well as they will be capable of designing precise experimental setup for studying animal behaviour.
PSO 12	The programme will strengthen the students for developing laboratory skills for Genetics and Molecular Biology. The laboratory programme will enable them to learn the techniques for the qualitative as well as quantitative assays of bio molecules.
PSO 13	They will understand the importance and role biodiversity and can recognize the economically important animals around us.
PSO 14	Students will be able to learn about different diseases, causative organisms, parasites, hosts, vectors as well as the basic principles of immunology including vaccinations and genetic basis several diseases like cancer.
PSO 15	The programme will strengthen the students to understand the structure and function of the gene, chromosomes, genome, cell, tissue, organ and organ-system.
PSO 16	They will understand the importance of the physiological adaptations, development pathways, hormonal regulation of reproduction and other physiological mechanisms.
PSO 17	Another important programme outcome will be the ability of students to estimate various important environmental parameters like O2, CO2 content, Ph, water turbulence, temperature, salinity, nutrient content .
PSO 18	Some special courses of the programme will help the students to develop essential skill and practical knowledge in application of economic Zoology in fishery, sericulture, apiculture which will provide gainful employment and economic development.
PSO 19	Project work and field study provide them with an encouragement for self-learning.
PSO 20	Research Motivation is also another significant outcome that the students are endowed with on the completion of the programme.

Course Outcomes (CO)

Paper	Course Outcome
Paper I : Non chordate Diversity (Theory)	1. This course includes the concept of living organisms which are grouped into six kingdoms and the idea behind such grouping. Knowing the differences among other five non-animal to that of animal kingdom enables to have a clear idea of animal characteristics. 2. To study animals in systematic pattern it needs to classify animal groups using taxonomical principles. Therefore Taxonomy is incorporated in the course. 3. The common structural pattern of all animals is considered in the form of symmetry. 4. The protozoans are animal protists therefore these find inclusion in studying zoology and this course includes Protozoans to Pseudocoelamates. Pseudocoelmates are triploblastic animals without true coelom and therefore the topic of development of coelome is also included. Thus non-chordate I contents teaches on the basics of animal characters and their organized study methods. 5. Non-chordates includes topics of metamerism in animals with special reference to annelids to know the metamerism in all higher groups which is not present in earlier groups already studied in non-chordate-I. 6. The course also includes classificatory schemes ,structural and functional aspects of the non-chordate groups from annelids to echinoderms.
Paper I : Non chordate Diversity (Practical)	The Laboratory on the course approaches to teach the diverse kinds of animals from protozoans to Hemichordata by observing the real animal groups and their identifying characters.
Paper II : Chordate Diversity and Comparative Anatomy of Vertebrate (Theory)	This course is intended to provide students with a fundamental grasp of the diversity of the Phylum Chordata, with a focus on their origin, major traits, classification, distribution, and functioning. This course will enlighten students on the concept of Chordate diversity, organisation, adaptation, and taxonomic position. The course will teach students about chordate systemic physiology and comparative anatomy of chordates. There will be a discussion regarding the chordate's affinities to various groups. Students learn about venom's composition and significance. Learn about the structural characteristics of birds that will aid them in Poultry (commercial a pplication). Mammal adaptive radiation will shed light on the diversity and distribution of mammals.
Paper II : Chordate Diversity and Comparative Anatomy of Vertebrates (Practical	Students will learn how to explain the differences between Protochordates and Chordates. Students can able to recognise chordates' taxonomic place, diversity, and distribution. Learn about the economic value and significance of fishes. Identify and differentiate deadly and non-poisonous snakes by examining distinguishing characteristics.