

DEPARTMENT OF ZOOLOGY
TARAKESWAR DEGREE COLLEGE

**Programme And Course Outcomes of B.Sc. Zoology (General) Programme
[CBCS] [The University of Burdwan]**

Programme Outcome of B.Sc. (General) Science

1. **Basic Knowledge of Science:** Students acquire fundamental knowledge of science, enabling them to comprehend the multitude of occurrences transpiring in their immediate environment.
2. **Development of Disciplinary Expertise and Knowledge:** To attain a profound apprehension and holistic understanding of significant ideas, theoretical tenets, and empirical discoveries in the realm of science and its various subdivisions, one must delve into comprehensive learning. This encompassing knowledge should extend to broader interdisciplinary branches including physics, chemistry, zoology, botany, mathematics, computer science, and more.
To enhance aptitude for utilizing contemporary instrumentation in order to leverage advanced technology.
3. **Formulating Real Time Solutions:** It is essential to create a thorough approach using real-time solutions. By the conclusion of the program, participants will gain the ability to generate successful resolutions for complex problems and establish customized procedures to meet specific needs.
4. **Managing Unanticipated Circumstances:** Basic scientific knowledge enables individuals to effectively handle unexpected incidents in their community, such as sudden chemical explosions, the misuse of hazardous substances, excessive rainfall, or drought. By possessing a fundamental understanding of science, individuals are equipped to effectively manage these situations.
5. **Environmental Awareness:** Nowadays, the primary focus of society lies in addressing environmental pollution. It is crucial for students to raise awareness among the community regarding the detrimental pollutants and their impact on the environment as a whole, as well as their specific effects on human health.
6. **Effective Communication Skills:** By the conclusion of the program, participants will possess the skills to engage in both oral and written communication. They will demonstrate their ability to think critically and operate autonomously. Moreover,

learners will be proficient in effectively communicating scientific matters with both the scientific community and society as a whole. This will be achieved through the creation of well-crafted reports and documentation, delivering impactful presentations, and effectively giving and receiving instructions.

7. **Employability:** Given the diverse range of long-term professional goals our learners have, many are attracted to professions that demand scientific skills, technical expertise, or strong quantitative reasoning abilities. Consequently, upon completing the program, students will enhance their employability by acquiring subject knowledge and additional skills.
8. **Soft Skill Development:** In addition to gaining knowledge and practical skills, learners must also develop soft skills and values to function effectively in diverse teams. These skills include leadership, teamwork, project management, positive mindset, innovative thinking, and effective communication. Upon completion of this program, students can refine these skills to enhance their academic, professional, and personal endeavours, contributing to personal growth and societal progress.
9. **Ethical Development:** By the conclusion of this program, students will possess the capability to cultivate, assimilate, and implement ethical principles in both their professional and personal endeavours.

Course Outcomes of B.Sc. Zoology (General)

Course Structure

SEM I: CC1A

SEM II: CC1B

SEM III: CC1C

SEM IV: CC1D

SEM V: DSE1A

SEM VI: DSE1B

NOTE: Students must opt one SEC Course in each semester from Sem-III to Sem-VI from any discipline.

SEM-I (CC1A) :Animal Diversity

COURSE OUTCOMES: On completion of the course students will be able

- To discuss the evolutionary history of the animal kingdom
- To prepare chart animal phylogeny
- To describe the various types of body plans that occur in animals
- To discuss the tissue structures found in animals
- To discuss methods and features of animal reproduction
- To discuss the importance of homeostasis in animals

SEM-II (CC1B) : Comparative Anatomy and Developmental Biology of Vertebrates

COURSE OUTCOMES: This course will help the students

- To Understand comparative account of the different vertebrate systems □
- To Understand the pattern of vertebrate evolution, organization and functions of various systems. □
- To Learn the comparative account of integument, skeletal components, their functions and modifications in different vertebrates. □
- To Understand the evolution of heart, modification in aortic arches, structure of respiratory organs used in aquatic, terrestrial and aerial vertebrates; and digestive system and its anatomical specializations with respect to different diets and feeding habits. □
- To Learn the evolution of brain, sense organs and excretory organs to a complex, highly evolved form in mammals; □
- To Learn to analyze and critically evaluate the structure and functions of vertebrate systems, which helps them to discern the developmental, functional and evolutionary history of vertebrate species. □

- To Understand the importance of comparative vertebrate anatomy to discriminate human biology.
- This course will help the students to understand the development of multicellular organisms from a single cell zygote.
- Students will be able to appreciate the mechanisms that support growth and development.
- They will learn interesting and unique post embryonic development that happens in other animals
- It will help them to understand the concept of aging and the relevance of this knowledge in several medical applications.

SEM-III (CC1C): Physiology and Biochemistry

COURSE OUTCOMES: After completion of this course, students will be able to

- Describe the classification of biomolecules.
- Describe the properties of biomolecules.
- Describe the reaction of biomolecules.
- Understand the structure of various types of biomolecules.
- Explain the functions of all the biomolecules.
- Analyze the biochemical reaction of biomolecules.
- Understand the relationship between different biomolecules.
- List down functions of various hormones.
- Describe the mechanism of action of hormones.
- Describe the disorders related to hormones.
- Draw structure of vitamins.
- Describe functions of vitamins.
- Explain deficiency disorders of vitamins.

SEM-IV (CC1D): Genetics and Evolutionary Biology

COURSE OUTCOMES: On successfully completing the module students will be able to:

- Demonstrate the ability to predict outcomes in monohybrid and dihybrid crosses using Mendelian genetics.
- Demonstrate a basic understanding of patterns of inheritance that do not obey Mendelian Principles.
- Demonstrate the ability to analyse pedigrees and predict the inheritance of human genetic disease.
- Demonstrate a basic understanding of DNA mutation and of horizontal gene transfer and their role in evolution.
- Demonstrate a basic understanding of Darwin's observations and the role of genetics in speciation and evolution.
- Demonstrate an ability to quantify the distribution of genes in populations.

SEM-V (DSE COURSE) DSE 1A: Applied Zoology

COURSE OUTCOMES: **After** successfully completing this course, students will be able to:

- Understand processes of fisheries, sericulture, along with crop pest management techniques
- Students gain knowledge about various disease related vectors and their impact on human
- Understand concepts of apiculture, poultry, dairy along with tissue and cell culture techniques

Skill Enhancement Course- III (SEC COURSE): Sericulture

COURSE OUTCOMES: On completion of the Sericulture course, students will be able to

- understand overall aspects of Sericulture, namely, Mulberry and non mulberry silkworms and their food plants, Rearing of the silkworm, Silkworm pathology, Process of silkworm seed production and silk technology.
- This course creates awareness among students about the economic importance and suitability of Sericulture in Indian conditions.
- Students will learn various technologies involved in Sericulture.
- Students will get hands-on training on Mulberry nursery management, Silkworm rearing, and Silk reeling.

SEM-VI DISCIPLINE SPECIFIC ELECTIVE COURSES (DSE) DSE 1B: Immunology

COURSE OUTCOMES: At the end of this course students will be able to

- explain the immunological terms.
- Defines the concept of immunology.
- Interpret the concept of immunogen.
- Discuss the concepts of antigen and antibody.
- Will be able to explain the immune system.
- Interpret the organs of the immune system.
- Explain the concept of vaccine and serum.
- Interpret vaccine and serum types.
- Discuss the differences between vaccine and serum.

Skill Enhancement Course- IV

(SEC COURSE): Community Nutrition and Health Statistics

COURSE OUTCOMES: At the end of the course, the student will have knowledge of

- What is under nutrition and malnutrition – causes, prevalence and its consequences.
- Methods of nutritional assessment of individual and group both directly and indirectly.
- The major nutritional problems existing in India- causes, effects, prevention and control measures.
- Various national nutritional programmes existing in India to combat malnutrition.
- Role of national and international agencies in improving the nutritional status of population.