

## **DEPARTMENT OF ZOOLOGY**

### **BARBHAG COLLEGE**

#### **PROGRAMME OUTCOME:-**

#### **PROGRAMME :- B.Sc.( General) Zoology (CBCS)**

Graduates of the programme should be able to :-

- Learn and understand about animal diversity to appreciate the variability in relation to their morphology, anatomy and behaviour of different animals.
- Understand about the structural and functional properties of cell and metabolic activities of the cell .
- Acquire knowledge about different branches of zoology such as Animal diversity, Comparative Anatomy and Developmental Biology, Physiology and Biochemistry, Genetics and Evolutionary Biology, Applied zoology, Aquatic Biology, Ornamental Fish and Fisheries, Sericulture, Apiculture and Wildlife photography and Ecotourism.
- Awareness about environment and its conservation processes, pollution control and its importance.
- Gain knowledge and develop skill over animal sciences, internal structure and functions of different systems of the body.
  
- Gain knowledge of communicable and non-communicable diseases of man and other animals.
- Know basics of laboratory techniques and biochemical analysis.
- Acquire knowledge about handling and operation of laboratory instrument.
- Gain basic knowledge on Animal identification and classification.
- Work independently in the field of zoology.
- Pursue higher education in M.Sc.or may enter into some job oriented courses.

#### **PROGRAMME SPECIFIC OUTCOME:-**

- Acquire knowledge about experimental techniques and methods of Physiology, Cell biology, Genetics, Applied Zoology and Biological techniques.
- Understand the applications of biological sciences in Apiculture, Poultry, Fisheries, Aquaculture.
- Understand good laboratory practices.
- Students will understand ecological factors, environmental conservation and pollution control etc.
- They will be able to apply such knowledge in the practical field which helps them to engage in various jobs.

#### **COURSE SPECIFIC OUTCOME:-**

Barbhag College being affiliated to Gauhati University follows the course curriculum as designed by Gauhati University. The course specific outcome for the department of zoology hence expected from the provided course curriculum has been summarized as follows-

## **B.Sc. (General) Zoology (CBCS):-**

### **Semester-I.**

#### **Code- ZOO-RC/HG-1016:-**

##### **Animal Diversity**

- Students will be able to learn about classification of different phylum of Invertebrate and different classes of Vertebrate and their morphology, life history, organ system and the functions of such organ systems.
- They also acquire knowledge about identification and classification of different animals of animal kingdom.

#### **Code- ZOO-RC/HG-1012:-**

##### **Animal Diversity (Practical) :-**

- Students gain knowledge about the identification of museum specimen and different permanent slides of certain species and their life history.
- They have the capability to distinguish poisonous and non-poisonous snake.
- Students acquire knowledge about preparation of Animal Album.

### **Semester-II.**

#### **Code- ZOO-RC/HG-2016:-**

##### **Comparative Anatomy and Developmental Biology of Vertebrates**

- Students will understand the different physiological system such as digestive system, Respiratory system, Circulatory system; Urinogenital system, Nervous system and other systems are Integumentary system and skeletal system.
- Students will learn different aspects of early and late embryonic development and control and development of embryo.

#### **Code- ZOO-RC/HG-2012:-**

##### **Comparative Anatomy and Developmental Biology of Vertebrates (Practical)**

- Students will learn about Mammalian skull and skeleton of fowl and rabbit.
- Students acquire practical knowledge of different embryonic developmental stages of Frog.
- They acquire knowledge of different types of placenta and gametes of frog and rat.

### **Semester- III.**

#### **Code- ZOO-RC/HG-3016:-**

##### **Physiology and Biochemistry**

- Students will learn about different physiological processes such as Digestion, Respiration, Excretion, Blood circulation, Reproduction, Neural and hormonal control
- Students will understand the metabolism of carbohydrate, protein and lipid and enzyme and enzyme action.

#### **Code- ZOO-RC/HG-3012:-**

##### **Physiology and Biochemistry (Practical)**

- Students have the ability to determine the functional groups of carbohydrates and estimation of protein.
- They learn how to prepare haemin crystal.
- They gain knowledge about histological structure of different endocrine glands of mammal.

## **Skill Enhancement Course (SEC)**

**Code- ZOO-SE-3014:-**

### **Ornamental Fish and Fisheries**

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

- Learn the Ornamental Fish diversity of North East India.
- Know about Aquarium plant diversity in wetland of Assam.
- Learn about construction and management of Home Aquarium.
- Acquire knowledge about Natural feed of ornamental fish, Strategies for maintenance of natural colour of ornamental fish, natural colour of ornamental fish, feed formulation of ornamental fish, development of Biological filtration in Aquarium and pure culture of planktons.
- In practical they able to know Identification of ornamental fish,, culture of indigenous ornamental fish, in aquarium, eastimation of physic-chemical characteristics of aquarium water,biological filter for removal of ammonia from aquarium,aquarium of plankton.

### **Semester-IV.**

**Code- ZOO-RC/HG-4016:-**

#### **Genetics and Evolutionary biology**

- Students will learn fundamental genetics such as Mendelian genetics, Linkage, Crossing over, Mutations, Crossing over and sex determination.
- Students will also able to know Evolutionary theories, Species concept,Macro evolution and Extinction.

**Code- ZOO-RC/HG-4012:-**

#### **Genetics and Evolutionary biology (Practical)**

- Students acquire practical knowledge of about Mendelian inheritance, gene interactions, Linkage, Recombination, Gene mapping, Human karyotype etc.
- Students will also learn the fossil evidences, homology, analogy and phylogeny of Horse etc.
- They will also acquire knowledge about Natural History Museum through field study.

### **Semester-V.**

#### **Discipline Specific Elective (DSE)**

**Code- ZOO-RE-5016:-**

#### **Applied zoology**

- Students able to know host parasite relationship, transmission, prevention, control of some diseases.
- Students acquire knowledge about parasitic protozoa, parasitic helminthes, insect of medical importance, economic importance of insects,
- They gather knowledge about Animal husbandry, Poultry farming, and Fish Technology.

**Code- ZOO-RE-5012:-**

#### **Applied zoology (Practical)**

- Students acquire knowledge to identify different diseases causing organisms including protozoa, insects and helminthes.
- They are capable to identify different insects which have economic importance.

- Acquire knowledge about rearing of poultry ,maintenance of poultry farm and maintenance of Aquarium.

**Code- ZOO-RE-6016:-**

**Aquatic Biology**

- They are introduced with different Aquatic Biomes including estuaries, oceanic pelagic zone, marine benthic zone and also gather concept about different freshwater ecosystems.
- They also acquire knowledge about Freshwater and Marine biology. Besides these they are capable of management of Aquatic Resources.

**Code- ZOO-RE-6012:-**

**Aquatic Biology (Practical)**

- Students acquire practical knowledge about the estimation of different physic-chemical parameters of aquatic ecosystem.
- Gather knowledge about application of various devices used in Limnology.
- They are capable to collect phytoplankton, zooplankton, and macrophysics of freshwater ecosystem and learn about preservation techniques of such organisms.

**Skill Enhancement Course(SEC)**

**Code- ZOO-SE-3014:-**

- Students know about tools and techniques of Photography and Ecotourism.