

GOVERNMENT GENERAL DEGREE COLLEGE, KALIGANJ

DEPARTMENT OF ZOOLOGY

PROGRAMME OUTCOME & COURSE OUTCOME

PROGRAMME NAME: B.SC ZOOLOGY HONOURS

PROGRAMME OUTCOME

PO1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2. Effective Communication. Ability to speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4. Effective Citizenship. Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Ethics. Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6. Environment and Sustainability. Understand the issues of environmental contexts and sustainable development.

PO7. Self-directed and Life-long Learning. Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

Programme Specific Outcome

PSO1 - Understand the nature and basic concepts of cell biology, genetics, taxonomy, physiology, ecology and applied Zoology. Analyse the relationships among animals with their ecosystems

PSO2 - Perform procedures as per laboratory standards in the areas of Taxonomy, Physiology, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Toxicology, Sericulture, Biochemistry, Fish biology, Animal biotechnology, Immunology.

PSO3 - Understand the applications of Zoology in Agriculture, Medicine and daily life. Obtain knowledge about research methodologies, effective communication and skills of problem solving methods. Contribute the knowledge for Nation building.



Page 1 of 6

HEAD
Department of Zoology
Govt. General Degree College
at Kaliganj
Dehagram, Nadia, 741137

COURSE OUTCOME

SEMESTER - I

COURSE TITLE: Non-chordates I: Protista to Pseudocoelomates

After successful completion of this course, students will be able:

- CO1. To understand the Animal diversity in the nature, to know the fundamental principles of classification of animals, to realize the terminologies used in classification, to know the fundamental principles of systematic, to understand the international rules of nomenclature.
- CO2. To classify non-chordates and to study the diversity in non-chordates and their systematic position.
- CO3. To accumulate knowledge on various physiological functions and life cycles of Protista and Metazoa.
- CO4. To be familiar with the Canal system in Porifera.
- CO5. To gather knowledge on metagenesis, polymorphism in Cnidaria. To get information on corals and coral reef diversity, importance of its conservation. To develop basic concepts on Ctenophorans.
- CO6. To impart knowledge on characteristics, life cycles and parasitic adaptations in helminths.

COURSE TITLE: Non-Chordates II: Coelomates

After successful completion of this course, students will be able:

- CO1. To gather elementary knowledge about evolution of coelom and metamerism.
- CO2. To know general characteristics, excretion and metamerism in Annelida.
- CO3. To illustrate general characteristics, respiration, metamorphosis, social life in Arthropoda. To learn evolutionary significance of Onychophora.
- CO4. To define general characteristics of Mollusca along with elementary concept on nervous system and torsion in Gastropoda.
- CO5. To impart knowledge on general characteristics, water-vascular system and larval forms in Echinodermata and its evolutionary significance.
- CO6. To be familiar with general characteristics and evolutionary significance of Hemichordata.

SEMESTER - II

COURSE TITLE: Perspectives in Ecology

After successful completion of this course, students will be able:

- CO1. To identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem and biosphere due to the dynamics in population.

Page 2 of 6

HEAD
Department of Zoology
Govt. General Degree College
at Kaliganj
Dehagram, Nadia, 741137

CO2. To understand different branches of ecology. They will also be efficient to anticipate, analyse and evaluate different attributes of population, its growth forms and regulatory factors.

CO3. To understand and appreciate the diversity of ecosystems and applies beyond the syllabi to understand the local lifestyle and problems of the community.

CO4. To link the intricacies of food chains, food webs and links it with human life for its betterment and for non-exploitation of the biotic and abiotic components.

CO5. To understand anticipate, analyse and evaluate natural resource issues and act on a lifestyle that conserves nature.

CO6. To save environment will help development of leadership skills to promote betterment of environment.

COURSE TITLE: Cell Biology

After successful completion of this course, students will be able:

CO1. To understand the importance of cell as a structural and functional unit of life. To understand and compare between the prokaryotic and eukaryotic system and extrapolate the life to the aspect of development.

CO2. To describe the composition, structure and functions of the plasma membrane. To explore how the cellular mechanisms and its functioning dependance on endo-membranes and structures.

CO3. To understand the structure and functions of nucleus and different cytoplasmic organelles.

CO4. To describe the three primary components of the cell's cytoskeleton and how they affect cell shape, function, and movement.

CO5. To learn the mechanism cell division and its regulatory measures, various aspects of oncology.

CO6. To gather knowledge about fundamentals of cell signaling.

SEMESTER - III

COURSE TITLE: Diversity of Chordates

After successful completion of this course, students will be able:

CO1. To gain knowledge of classification of protochordates and chordates.

CO2. To study various physiological functions and interactions of protochordate organisms with examples.

CO3. To explore different theories of origin of chordates.

CO4. To impart conceptual knowledge of vertebrate adaptations in relation to their environment.

CO5. To accumulate elementary ideas on various special features of different vertebrate groups.

CO6. To learn fundamental concepts on zoogeography.

Phalsh

Page 3 of 6

HEAD
Department of Zoology
Govt. General Degree College
at Kaliganj
Debagram, Nadia, 741137

COURSE TITLE: Animal Physiology: Controlling and Coordinating Systems

After successful completion of this course, students will be able:

- CO1.To define the basic terms in physiology.
- CO2.To explain the anatomy and physiological process of bone and cartilage.
- CO3.To obtain details of anatomy and physiology of nervous system.
- CO4.To study the anatomy and physiological process of muscular system.
- CO5. To accumulate knowledge on histology of reproductive organs like testis and ovary as well as to learn physiology of reproduction in animals.
- CO6. To explain the anatomy, histology and functions of various endocrine glands. In addition, they will be able to justify the endocrine disorders.

COURSE TITLE: Fundamentals of Biochemistry

After successful completion of this course, students will be able:

- CO1.To define the basic terms in biochemistry.
- CO2.To explain the structure, functions and reactions of the various biomolecules.
- CO3.To learn elementary knowledge on carbohydrate metabolism.
- CO4.To explore elementary knowledge on lipid metabolism.
- CO5.To obtain basic knowledge on protein metabolism.
- CO6.To illustrate the basics of enzymology and oxidative phosphorylation.

SEMESTER - IV

COURSE TITLE: Comparative Anatomy of Vertebrates

After successful completion of this course, students will be able:

- CO1. To learn comparative anatomy of integumentary system in vertebrates.
- CO2. To impart knowledge on comparative anatomy of skeletal system in vertebrates.
- CO3. To illustrate comparative anatomy of digestive system in vertebrates.
- CO4. To gather knowledge on comparative anatomy of digestive and circulatory system in vertebrates.
- CO5. To define comparative anatomy of urinogenital system in vertebrates.
- CO6. To learn comparative anatomy of nervous system and sense organs in vertebrates.

COURSE TITLE: Animal Physiology: Life Sustaining Systems

After successful completion of this course, students will be able:

- CO1. To accumulate fundamental concept of anatomy, structure, function and detailed mechanism of physiological process of digestion.

Rharm

Page 4 of 6

HEAD
Department of Zoology
Govt. General Degree College
at Kaliganj
Dehagram, Nadia, 741137

CO2. To define elementary concept of anatomy, structure, function and detailed mechanism of physiological process of respiration.

CO3. To define basic concept of anatomy, structure, function and detailed mechanism of physiological process of circulation.

CO4. To obtain knowledge on fundamental concept of structure, function and detailed mechanism of physiological process of cardiac system.

CO5. To illustrate primary concept of anatomy, structure, function and detailed mechanism of physiological processes of thermoregulation & osmoregulation.

CO6. To gather fundamental concept of anatomy, structure, function and detailed mechanism of physiological processes renal system.

COURSE TITLE: Immunology

After successful completion of this course, students will be able:

CO1. To accumulate basic concepts of immune system and illustrate innate and adaptive Immunity.

CO2. To define elementary ideas on antigens and antibodies.

CO3. To learn fundamental aspects of major histocompatibility complex.

CO4. To gather knowledge on cytokines and complement system.

CO5. To define various aspects of hypersensitivity.

CO6. To develop concepts on different diseases from immunological aspects and impart knowledge on fundamentals of vaccines.

SEMESTER - V

COURSE TITLE: Molecular Biology

After successful completion of this course, students will be able:

CO1. To Explain DNA structure and function

CO2. To define the Central dogma of molecular biology.

CO3. To illustrate the mechanism of replication, transcription and translation.

CO4. To Learn Post transcriptional modifications and processing of eukaryotic RNA.

CO5. To impart knowledge on gene regulation and DNA repair mechanisms.

CO6. To become familiar with different techniques of molecular biology.

COURSE TITLE: Genetics

CC-12: After successful completion of this course, students will be able:

CO1. To define the basic terms in genetics as well as Mendelian genetics and its extension.

CO2. To discuss the linkage groups, gene frequency, crossing over and chromosomal mapping

CO3. To explain the concept of mutation.

- CO4. To illustrate sex determination in *Drosophila* & Human.
- CO5. To obtain knowledge on nature of Extra-chromosomal Inheritance.
- CO6. To explore transposable genetic elements as well as basic concepts of recombination in bacteria and viruses.

SEMESTER - VI

COURSE TITLE: Developmental Biology

After successful completion of this course, students will be able:

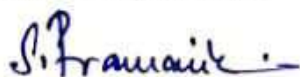
- CO1. To describe spermatogenesis, oogenesis and fertilization early and late embryonic development.
- CO2. To illustrate early embryonic development.
- CO3. To obtain knowledge on late embryonic development.
- CO4. To know the process of organogenesis.
- CO5. To gather elementary idea on regeneration.
- CO6. To define implications of developmental biology.

COURSE TITLE: Evolutionary Biology

After successful completion of this course, students will be able:

- CO1. To define geological time scale and molecular evolution.
- CO2. To explain population genetics and evolutionary forces.
- CO3. To explore species concept, isolating mechanisms and modes of speciation.
- CO4. To gather knowledge on adaptive radiation/macroevolution.
- CO5. To illustrate origin and evolution of human.
- CO6. To know the method for construction of phylogenetic trees.

Counter-signature by



Coordinator, IQAC,
GGDC, Kaliganj

IQAC
Co-ordinator,
GGDC, Kaliganj



Head, Department of Zoology,
GGDC, Kaliganj

HEAD
Department of Zoology
Govt. General Degree College
at Kaliganj
Debagram, Nadia, 741137