

B.Sc Biotechnology: Semester-IV BST405: Animal Physiology	
Teaching Scheme Lectures: 3 hrs/Week Tutorials: 1 hrs/Week Credits: 4	Examination Scheme Class Test -12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Prerequisite: - BST103: Cell biology, BST102: Introduction to biotechnology, BST302 Molecular Biology

Course Objectives:

1. To give Overview of a Movement of water and solutes between the fluid compartments
2. To give complete knowledge of Body fluid compartments and the ionic composition of body fluids
3. Concept of homeostasis and Structure of biological membranes
4. To describe Organization structural and functional organization of the nervous system.
5. To explain Synaptic neurotransmission.
6. To explain central and peripheral nervous systems
7. To explain principles of sensory, vision, hearing physiology

Course Outcomes:

After completing the course, students will be able to:

- CO1: Define the body fluids, Nerves and Cell Membrane
- CO2: To understand the cell membrane composition, nerve fibres and key feature of membrane functions and signalling
- CO3: To apply the principle of homeostasis, nervous system and the methods used by the body to maintain this
- CO4: To differentiate how the parts of the body are linked into a functioning whole.
- CO5: To evaluate the different practical knowledge of physiological techniques
- CO6: To create the hypothesis about physiological topics
- CO7: Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large

Detailed Syllabus:

UNIT-1 Body fluids Body fluid compartments and the ionic composition of body fluids, Movement of water and solutes between the fluid compartments, The concept of homeostasis, including set point, negative and positive feedback loops, and compensatory responses
UNIT-2 Biological Membranes

Head

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Structure of biological membranes, Function of biological membranes including the role of membrane proteins in catalysis, recognition, and transport. Intracellular and extracellular communication systems. Organization structural and functional organization of the nervous system, including the central and peripheral nervous systems, the autonomic nervous system, and the enteric nervous system

UNIT-3 Membrane Potential

The resting membrane potential, The action potential, action potential propagation along the axon, Chemical messenger molecules of the nervous system, including classical and non-classical neurotransmitters, Synaptic neurotransmission, Basic principles of sensory physiology, Vision physiology, Hearing physiology, Structure and function of skeletal muscle, including excitation-contraction coupling, sliding

Reference Books:

1. Anatomy and Physiology of Animals, Ruth Lawson
2. Animal Physiology (Looseleaf), Third Edition, Richard W. Hill Gordon A. Wyse Margaret Anderson

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