WEST BENGAL STATE UNIVERSITY

SYLLABUS FOR

4-Years Bachelor's Degree Programme (Honours / Honours with Research)

PHYSIOLOGY

2023

Course and Curriculum with effect from 2023-2024

Subject: PHYSIOLOGY

Level: Under Graduate

Name of Programme: 4-Years B.Sc. (Honours / Honours with Research) Courses in Physiology

Programme Specific Objectives:

The main objective of the course is to know the systematic, extensive and coherent knowledge and understanding of human body as a whole. The applications and links to disciplinary areas of the study; including critical understanding of the established theories, principles and concepts of a number of advanced and emerging issues in the field of Physiology.

Outcome of the Programme

At the end of the curriculum of Physiology course, the student would able to

- understand the all physiological systems of human body like cardiovascular system, respiratory system, nervous system, endocrine and reproductive system, reticuloendothelial system excretory system, immune system and musculoskeletal system;
- understand how these separate systems interact to yield integrated physiological response to challenges such as high altitude, stress and exercise;
- explain the mechanisms in maintaining homeostasis, molecular mechanism of cell signalling, aging, cancer and other pathological disorders;
- perform and analyse the biophysical, biochemical and histological experiments;
- formulate the diet chart for adult, child, lactating and pregnant mother;
- enhance their skills regarding different techniques and analysis of samples;
- perform data analysis and interpretation of observed result of field work and research work.

Basic Structural Framework of Syllabus

21 Discipline Specific courses (DSC)/Major: DSC 1 TO 21:Theory and Practical, 5 Credit each
3 Skill Enhancement Courses (SEC): SEC 1 to 3, 3 Credit each

Course Code	Subject of Course	Distribution of Credit		Total Credit
	Semester I	**TH**	**PR**	
PHYDSC101T	**Theory:** Anatomy and Physiology of Cell, Tissue, Organ and System, Cell cycle, Cell division, Cell death and Cell signaling.	03	00	03
PHYDSC101P	**Practical:** 1. Demonstration of different organs and systems of human body through different models and chart. 2. Identifications of different bones and joints of human skeleton system through different models and chart. 3. Principle, use and functions of compound microscope. 4. Fresh Tissue Experiments 5. Study and Identification of Stained Sections of Different Mammalian Tissues. **Internal:**	00	02	02
	Total	03	02	05
	Semester II			
PHYDSC202T	**Theory: Biophysical Principles & Enzymes** **Biophysical Principles:** Diffusion, Viscosity, Surface tension, Osmosis, pH, Buffer, Colloid, Thermodynamics **Enzymes:** Classification of enzymes, Enzyme kinetics, Inhibition of enzymes	03	00	03
PHYDSC202P	**Practical:** 1. Preparation of 1M and 0.5 M Phosphate Buffer Solution (PBS). 2. Preparation of 1N and N/10 NaOH solution 3. Measurement of pH of given buffer solution 4. Determination of Alanine Aminotranferase (ALT) activity. 5. Determination of Aspartate Aminotranferase (AST) activity. 6. Determination of Alkaline phosphatase (ALP) activity. 7. Preparation of Sucrose gradient. **8.** Salivary amylase activity on starch at body temperature (37.5°C), above 40°C and in presence of HCl	00	02	02