

Department of Physiology

Department of Physiology, CO & PO, PG-CBCS, 2018-19 to 2022-2023

SEMESTER 1

• **Systems Physiology-I**

CO 1:

- ✓ To understand in detail the functioning of different systems of human body
- ✓ To conceptualize the probable causes of various abnormalities of different systems of human body
- ✓ Gaining knowledge about various good practices for better functioning of our different systems.

• **Biomolecules & Metabolic Pathways**

CO 2:

- ✓ Understanding of different biomolecules, their interactions and roles in continuation of human life
- ✓ The energy producing pathways and their regulations through both metabolic and catabolic pathways
- ✓ The functioning of different enzymes
- ✓ The accessories for propagation of digestion
- ✓ The secretions and their actions.

• **Community Health-I & Computational Physiology**

CO 3:

- ✓ It gives a totally different vision towards the application of the Physiological studies
- ✓ Social & Community Developmental orientation
- ✓ Concept of Healthy Community
- ✓ Population Control and Family planning Methodologies.
- ✓ Understanding the importance and applications of various biological databases, resources in making the research easier and the advantages of in silico technologies to obtain knowledge about interactions of different molecules within the body and in drug designing.

• **Practical: Experimental physiology**

CO 4:

- ✓ Preparation of Physiological fluid and its application
- ✓ Comparison of normal and abnormal cardiac functioning by ECG
- ✓ Effect of different drugs in hearts' movement
- ✓ To have direct exposure to lung function Test
- ✓ To observe the movements and propagation in tracts of the body.

Department of Physiology

- **Practical: Clinical biochemistry**

- CO 5:**

- ✓ Quantification of solutes of physiological as well as pathological importance using blood/serum.

SEMESTER 2

- **Systems Physiology-II**

- CO 6:**

- ✓ To understand the role of immune system in bodies defence against foreign antigens or cancer/tumour cells
 - ✓ To obtain knowledge about the functioning of human nervous system
 - ✓ Functioning of different types of muscle and role of nervous system in regulation of muscle movement.

- **Cellular & Molecular Physiology**

- CO 7:**

- ✓ To know the unit of the human system as a cluster of living material
 - ✓ Basic interconnectivity among those units
 - ✓ Origin and root of living cell production
 - ✓ DNA as the Key molecule
 - ✓ To know the basic modulator of the human system
 - ✓ The physicochemical laws behind the control
 - ✓ The modern concept of the allied molecules with the similar properties.

- **Community Health-II**

- CO 8:**

- ✓ Concepts of industrial management
 - ✓ To know about sports medicines and drug abuse
 - ✓ Understanding the basics of space and aviation physiology
 - ✓ Microbes and associated diseases.

- **Practical: Histology**

- CO 9:**

- ✓ Identification of stained histological sections.
 - ✓ Exposure to tissue staining and structure learning
 - ✓ Preparation of histological slides.

Department of Physiology

- **Human physiology/ computer applications and biostatistics**
CO 10:

- ✓ To get trained for measuring the BP
- ✓ To determine the Pulse pressure, Mean pressure
- ✓ Preparation of Physiological fluid and its application
- ✓ Lung as the air container cum passage of physiological system
- ✓ Measurement, techniques and principle of spirometry
- ✓ To have direct exposure to lung function Test
- ✓ Learning of Pneumography.
- ✓ To learn about different biological databases and their applications
- ✓ In silico drug designing
- ✓ Understanding of statistical evaluation of various data(s)/parameters used in regular survey/project(s)/research.

SEMESTER 3

- **Systems Physiology-III**
CO 11:

- ✓ Hormones as biomodulator
- ✓ Different bio- modulators
- ✓ Heart as an endocrine organ
- ✓ To know the Circadian effect, biorhythm and bio-clock
- ✓ Sex organs and characters
- ✓ Histology and anatomy of reproductive organs
- ✓ Effect of hormones on puberty, adolescence and reproduction
- ✓ Pregnancy Test
- ✓ To know the mother cell
- ✓ Importance of stem cell and its application
- ✓ Embryogenesis and organogenesis.

- **Community Health-III: Hazards and Prevention**
CC 12:

- ✓ Understanding of occupational health and prevention of health hazards
- ✓ Applications of ergonomics in mankind
- ✓ To know about principles of environmental physiology
- ✓ To gain knowledge about environmental pollution, xenobiotics and their management.

Department of Physiology

- **Advance techniques in Physiology**

CC 12:

- ✓ Understanding of enzyme activity
- ✓ Primer designing
- ✓ Learning of PCR techniques
- ✓ Agarose gel electrophoresis
- ✓ Study of macrophage function
- ✓ Lysozyme release study
- ✓ Identification of unknown bacteria.
- ✓ Learning of cell counting by hemocytometer.

SEMESTER 4

- **Modern Techniques in Physiology**

CO 13:

- ✓ To understand the applications of genetic engineering in mankind
- ✓ To learn about cell and tissue culture techniques
- ✓ Understanding of biophysical chemistry, electrophysiology and different biomedical instruments routinely used in treatment
- ✓ To study the promising scopes of nanotechnology in making human life easier in near future.

Discipline specific elective course (DSEC):

- **Biochemistry**

CO 14:

- ✓ To visualize human body as a representative system carrying all the physicochemical properties of the nature
- ✓ To conceptualize the living body as a thermodynamic system
- ✓ Principle and use of different types of Microscopes, Colorimeter, Spectrophotometer etc. as supportive tools to have clearer vision towards the cell study
- ✓ To know in detail about the basic biochemical components of human system.

Department of Physiology

- **Endocrinology & Reproductive Physiology**

- **CO 15:**

- ✓ Hormones as biomodulator
- ✓ Different bio- modulators
- ✓ Heart as an endocrine organ
- ✓ Sex organs and characters
- ✓ Histology and anatomy of reproductive organs
- ✓ Effect of hormones on puberty, adolescence and reproduction
- ✓ Pregnancy Test
- ✓ To know the mother cell.

- **Ergonomics & Work Physiology**

- **CO 16:**

- ✓ Understanding of ergonomics to make human life easier
- ✓ Uses of ergonomics to get better work output in various sectors of mankind
- ✓ Physiological definition as well as basis of work
- ✓ Exercise as a daily work system and its importance
- ✓ Basic concept of work organization.

- **Immunology & Microbiology**

- **CO 17:**

- ✓ To know the survival strategy of the body against the microbial world
- ✓ Defense Mechanism of the body
- ✓ Interrelationship between human and Microbes
- ✓ Detail of the body cells' involvement and interaction in disease
- ✓ Vaccine and their implication.

- **Sports & Exercise Physiology**

- **CO 18:**

- ✓ Understanding of Physical fitness and training programme and training principle
- ✓ Bioenergetics.

Rammohan College

102/1, Raja Rammohan Sarani, Kolkata, 700009

Department of Physiology

Project Work:

- ✓ It aims to make the students familiar with various laboratory techniques
- ✓ It helps in making the students research oriented.

Programme Objective of PG Physiology Course:

The primary objective of the course is to know the 'Human System' as the most prospective, potent and closest image of the nature. It primarily focuses on the origin of life, DNA as the carrier of heredity, structural and functional inter-relationship of different systems, Biomolecules as the source of energy of the body, the enzymes and hormones as the major controller system of human, molecular integration, Host-Parasite interaction and the remedies including the modern methodologies, concepts and technologies to step forward to a better tomorrow.