

## **Course Outcome**

### **CELLULAR BASIS OF PHYSIOLOGY Code: PHYACOR01T, PHYACOR01P**

- Course Outcome
  - ✓ CO1: This course provides the comprehensive knowledge about the structures and purposes of the basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes and organelles
  - ✓ CO2: Students will understand the cellular components and mechanisms underlying mitotic and meiotic cell division.
  - ✓ CO3: Students will be able to apply their knowledge of cell biology to selected examples of changes or losses in cell function.
  - ✓ CO4: This course will provide knowledge about environmental and physiological changes or alterations of cell function brought about by mutations.
  - ✓ CO5: Students will get a brief idea about cell signaling.

### **BIOLOGICAL PHYSICS AND ENZYMES Code: PHYACOR02T, PHYACOR02P**

- Course Outcome
  - ✓ CO1: It helps students to understand the ionic bonds, forces, colligative properties of different solutions that depend on the ratio of the number of solute particles to the number of solvent molecules in a solution. The number ratio can be related to the various units for concentration of solutions, for example, molarity, molality, normality etc.
  - ✓ CO2: Students will acquire knowledge about ultracentrifugation and electrophoresis.
  - ✓ CO3: Students will be able to apply their knowledge in various biophysical techniques.
  - ✓ CO4: This course will provide knowledge about enzymatic functions and their mode of action.
  - ✓ CO5: Students will get a brief idea about thermodynamics.

### **PHYSIOLOGY OF NERVE AND MUSCLE CELLS Code: PHYACOR03T, PHYACOR03P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding about the physiology of nerve and muscle cells.
  - ✓ CO2: At the completion of this course students will be able to describe the structure and function of various nerve and muscle cells.
  - ✓ CO3: Students will also learn about the synaptic and junctional transmission.
  - ✓ CO4: This course will provide knowledge about electrical events at synapses and principal neurotransmission system.
  - ✓ CO5: Students will get a brief idea about synaptic plasticity.

### **CHEMISTRY OF BIOMOLECULES; Code: PHYACOR04T, PHYACOR04P**

- Course Outcome
  - ✓ CO1: This course will provide a comprehensive knowledge about the classification, structure and functions of Biomolecules.
  - ✓ CO2: At the completion of this course students will be able to describe the structure and function of carbohydrates.
  - ✓ CO3: At the completion of this course students will be able to describe the structure and function of Proteins.

- ✓ CO4: At the completion of this course students will be able to describe the structure and function of Fat.
- ✓ CO5: Students will also learn about the structure, types and functions of DNA and RNA from this course of curriculum.

### **CIRCULATING BODY FLUIDS Code: PHYACOR05T, PHYACOR05P**

- Course Outcome
  - ✓ CO1: This course gives a clear concept on different types of circulating body fluids in human body like blood, different types of blood corpuscles and their functions, lymph and lymphatics, their roles in human body vividly.
  - ✓ CO2: This course also throws light upon, different abnormalities, clinical implications. And, students gathered information regarding antibody, antigen, their interaction and roles of antibodies in immune mechanism.
  - ✓ CO3: Furthermore, they are benefitted by knowing their individual's blood group, bleeding time, clotting time, percentage of Hb etc. through practical classes.
  - ✓ CO4: This course will provide knowledge about various blood related disorders.
  - ✓ CO5: Students will get a brief idea about various hematological variables and also understand their practical implication.

### **CIRCULATION Code: PHYACOR06T, PHYACOR06P**

- Course Outcome
  - ✓ CO1: In this course the students will get an overall idea about circulation and all other cardiac activities
  - ✓ CO2: This course also throws light upon heart as a pump which supplies the driving force for all blood flow in the body.
  - ✓ CO3: Furthermore, they are benefitted by knowing about ECG in detail.
  - ✓ CO4: This course will provide knowledge about various cardiovascular disorders.
  - ✓ CO5: Students will get a brief idea about the circulation through the special regions of the body including cerebral, coronary, fetal etc.

### **FUNCTIONS OF NERVOUS SYSTEM Code: PHYACOR07T, PHYACOR07P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding of the structure and function of the nervous system. Starting with nervous system development and then focusing on the adult nervous system.
  - ✓ CO2: Students will get a detailed idea about the gross anatomy of the human brain and spinal cord.
  - ✓ CO3: Furthermore, students will also acquire knowledge about autonomic nervous system.
  - ✓ CO4: This course will provide knowledge about Central Regulation of Visceral Function.
  - ✓ CO5: Students will get a brief idea about Higher Functions of the Nervous System: Conditioned Reflexes, Learning, & Related Phenomena.
  - ✓ CO6: This course will also provide knowledge about the Clinical Aspect of Nervous System.

### **ENERGY BALANCE, METABOLISM AND NUTRITION Code: PHYACOR08T, PHYACOR08P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding about metabolism of biomolecule.

- ✓ CO2: At the completion of this course students will be able to understand the metabolism of carbohydrates.
- ✓ CO3: At the completion of this course students will be able to describe the metabolism of proteins.
- ✓ CO4: At the completion of this course students will be able to understand the metabolism of fats.
- ✓ CO5: Students will also learn about BMR, RQ, RDA, SDA, NPU, Biological value of proteins, vitamins and minerals.

### **GASTROINTESTINAL FUNCTION Code: PHYACOR09T, PHYACOR09P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding of the digestion and absorption of carbohydrate, protein, lipids, water and electrolytes and also about the absorption of vitamin and minerals.
  - ✓ CO2: At the completion of this course students will be able to understand the role of different gastrointestinal hormones and enzymes.
  - ✓ CO3: At the completion of this course students will be able to describe the Digestive function of the stomach.
  - ✓ CO4: At the completion of this course students will be able to understand the Exocrine Portion of the Pancreas, Liver & Biliary System.
  - ✓ CO5: Students will also learn about various Gastrointestinal Dysfunctions.

### **RESPIRATION Code: PHYACOR10T, PHYACOR10P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding of the pulmonary function of the lungs.
  - ✓ CO2: At the completion of this course students will be able to understand the gas transport between lungs and tissues.
  - ✓ CO3: This course will also provide a detailed understanding of the regulation of respiration.
  - ✓ CO4: At the completion of this course students will be able to understand the respiratory adjustments in health and disease.
  - ✓ CO5: Students will also learn about Artificial respiration.

### **SPECIAL SENSES Code: PHYACOR11T, PHYACOR11P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding about the biological transducers
  - ✓ CO2: At the completion of this course students will be able to understand the structure and function of the different special organs.
  - ✓ CO3: Students will gather knowledge about the mode of action and functions of different types of special senses.
  - ✓ CO4: At the completion of this course students will be able to understand the mechanism of different special organs of our body.
  - ✓ CO5: Lectures will also give idea about the clinical aspects of special senses.

**ENDOCRINOLOGY Code: PHYACOR12T, PHYACOR12P**

- Course Outcome
  - ✓ CO1: Students will get an overall idea about structure and function of the endocrine system.
  - ✓ CO2: Students will gather knowledge regarding the introduction and anatomic consideration of different types of endocrine glands like thyroid, pituitary, pancreas, and adrenal glands etc.
  - ✓ CO3: Students will also gather knowledge on secretions of endocrine glands and its secretory effect on human health.
  - ✓ CO4: At the completion of this course students will be able to understand the mechanism of action of different hormones in our body.
  - ✓ CO5: Lectures will also give idea about the biological rhythms of human body.

**BIOLOGICAL STATISTICS (DSE1) Code: PHYADSE01T, PHYADSE01P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding of the statistical problems
  - ✓ CO2: students will gather knowledge regarding the Starting with scope of statistics to mathematical calculation
  - ✓ CO3 It includes graphical representation probability modeling etc.
  - ✓ CO4: Lectures will be given about testing of hypothesis
  - ✓ CO5: Lectures will also give standard error, standard deviation, and level of significance etc.

**MICROBIOLOGY AND IMMUNOLOGY (DSE2) Code: PHYADSE02T, PHYADSE02P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding of the microbial morphology and histology
  - ✓ CO2: It gives elementary idea about bacterial genetics and bacteriostatic and bactericidal agents.
  - ✓ CO3 The course also provides an overview of immune system.
  - ✓ CO4: Students will gain information about the antigen antibody interaction, MHC, cytokines.
  - ✓ CO5: Lectures also include immunopathology and immunization program etc.

**REPRODUCTIVE FUNCTION Code: PHYACOR13T, PHYACOR13P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding about the sex differentiation and development, chromosomal sex, embryology of the human reproductive system etc.
  - ✓ CO2: Students will study in detail about the male reproductive system.
  - ✓ CO3: Students will also learn about the abnormalities of Testicular Function.
  - ✓ CO4: This course will provide knowledge about Female Reproductive system, Ovarian Hormones and Control of Ovarian Function.
  - ✓ CO5: Students will get a brief idea about physiological concepts for a planned family.

### **FORMATION AND EXCRETION OF URINE Code: PHYACOR14T, PHYACOR14P**

- Course Outcome
  - ✓ CO1: This course will provide a comprehensive knowledge about the juxtaglomerular apparatus, function of Malpighian corpuscles, renal tubules, counter-current mechanism etc.
  - ✓ CO2: Students will also come to know about acidification of urine and bicarbonate excretion, renal circulation, diuretics, disorders of renal function etc.
  - ✓ CO3: Students will also learn about the Non-excretory function of kidney.
  - ✓ CO4: This course will provide knowledge about the mechanism of filling of the Bladder and Emptying of the Bladder.
  - ✓ CO5: Students will get a brief idea about Regulation of Na<sup>+</sup>& Cl<sup>-</sup> Excretion.

### **NUTRITION, METABOLISM AND GASTROINTESTINAL FUNCTIONS Code: PHYGCOR01T, PHYGCOR01P**

- Course Outcome
  - ✓ CO1: This course provides the comprehensive knowledge about enzymes, biological catalysts of cell.
  - ✓ CO2: Enzyme kinetics i.e. investigation of how enzymes bind substrates and turn them into products.
  - ✓ CO3: In this course, structures, properties and functions of biomolecules- carbohydrates, proteins and lipids are discussed thoroughly along with DNA and RNA.
  - ✓ CO4: In addition, digestion, absorption and metabolism of these basic biomolecules are elaborately conferred here along with vitamins and minerals.
  - ✓ CO5: This chapter also provides a clear knowledge regarding the whole gastrointestinal functions of a human body.

### **CIRCULATION, RESPIRATION & EXCRETION CODE: PHYGCOR02T, PHYGCOR02P**

- Course Outcome
  - ✓ CO1: The students will gain idea about the remarkable pump that propels the blood into the vessels.
  - ✓ CO2: It helps to describe the function of the heart other than “pump,” since its contraction develops the pressure that ejects blood into the major vessels: the aorta and pulmonary trunk. From these vessels, the blood is distributed to the remainder of the body. Although the connotation of the term “pump” suggests a mechanical device made of steel and plastic, the anatomical structure is a living, sophisticated muscle.
  - ✓ CO3: Students will also learn about the overall pumping mechanism of human heart.
  - ✓ CO4: Students will incur knowledge about circulatory system, respiratory function and mechanisms and excretory functions.
  - ✓ CO5: Students are very much benefitted both with the theory as well as practical parts of this course.

## **ENDOCRINOLOGY & REPRODUCTION Code: PHYGCOR04T, PHYGCOR04P**

- Course Outcome
  - ✓ CO1: This course will provide a broad understanding of the major human endocrine glands and their hormones, together with understanding hormones action, biosynthesis of hormones and their effect on target cell.
  - ✓ CO2: In addition, the course aims to provide students with understanding of the medical conditions resulted from abnormal hormone secretion and their related disorder.
  - ✓ CO3: At the completion of this course students will be able to describe the the anatomy of the male and female reproductive systems, including their accessory structures
  - ✓ CO4: Explain the role of hypothalamic and pituitary hormones in male and female reproductive function.
  - ✓ CO5: Students will also learn about the Trace the path of a sperm cell from its initial production through fertilization of an oocyte and explain the events in the ovary prior to ovulation.

## **COMMUNITY NUTRITION AND PUBLIC HEALTH (DSE) Code: PHYGDSE03T, PHYGDSE03P**

- Course Outcome
  - ✓ CO1: This topic provides vivid information regarding food intake
  - ✓ CO2: It gives elementary idea about the surrounding public health.
  - ✓ CO3 The course also provides an overview of various nutritional aspects of community and public health
  - ✓ CO4: Students will gain information about the nutritional aspects of different foods.
  - ✓ CO5: Students will also get a brief idea about the Physiology of starvation and obesity.

## **NERVOUS SYSTEM & SPECIAL SENSES Code: PHYGCOR03T, PHYGCOR03P**

- Course Outcome
  - ✓ CO1: This course will provide a detailed understanding of the structure, properties and functions of the excitable tissues- nerve and muscles.
  - ✓ CO2: Additionally, this chapter throws light on several kind of reflexes, control of posture, movement, functions of autonomic nervous system, and different types of higher functions of brain (thirst, hunger, sexual behaviour, fear and rage)
  - ✓ CO3: This course provides a clear picture about the functioning of special senses (visual, auditory, olfactory and gustatory) in human body in response to environmental stimulus.
  - ✓ CO4: Students will get a brief idea about Higher Functions of the Nervous System: Conditioned Reflexes, Learning, & Related Phenomena.
  - ✓ CO5: This course will also provide knowledge about the Clinical Aspect of Nervous System.

## **SPORTS AND EXERCISE PHYSIOLOGY (DSE); Code: PHYGDSE02T, PHYGDSE02P**

- Course Outcome
  - ✓ CO1: This course provides a detailed understanding about different aspects of sports and exercise physiology from concept of bioenergetics to aerobic and anaerobic exercises.
  - ✓ CO2: The course also provides an overview of training and their principles.
  - ✓ CO3: Students will also gain knowledge regarding over-training and detraining.
  - ✓ CO4: This course gives idea about several types of sports injury and its management.
  - ✓ CO5: Students will also get a brief idea about sports rehabilitation and medicines.

## **HEMATOLOGICAL TECHNIQUES; Code: PHYSSEC01M**

- Course Outcome
  - ✓ CO1: This course gives a detailed understanding of several kinds of haematological techniques like- preparation blood smear, identification of different types of blood cells.
  - ✓ CO2: Additionally, this SEC throws light on preparation of haemin crystal.
  - ✓ CO3: This course provides a clear picture about Blood group determination.
  - ✓ CO4: Determination of bleeding time and clotting time
  - ✓ CO5: This course will also provide knowledge about Measurement of haemoglobin in blood.

## **DIET SURVEY AND FORMULATION OF DIET CHART Code: PHYSSEC02M**

- Course Outcome
  - ✓ CO1: This course gives a detailed understanding of diet survey and its types.
  - ✓ CO2: At the completion of this course students will be able to understand several types of its methods and provides an idea about human food habits and consumption.
  - ✓ CO3: Students will gather knowledge about the nutritional aspects of different food.
  - ✓ CO4: At the completion of this course students will be able to understand the relationship between food and nutrition.
  - ✓ CO5: Students will also get a brief idea about the Physiology of starvation and obesity.