

**Educational Objectives**

1. To provide students with an introduction to the discipline of human physiology. At the end of the course students should be able to explain and discuss the concept of homeostasis with appropriate examples. They will be able to describe the general anatomy and physiology of key organs of the body and explain their roles in an healthy or diseased condition.

**Course Outcomes**

2. On successful completion of this module, students should be able to understand the major systems of human body and their abnormalities leading to different pathological conditions.

**3. Course Contents****a. Definition of health and disease****b. Physiology of Systems (Functions and diseases)****(1) Cardiovascular system**

- (a) Structure and Function of Heart
- (b) Disorders of Heart
- (c) Diagnosis and Treatment of Cardiovascular Disorders

**(2) Nervous system**

- (a) Organization of Nervous System (CNS, PNS, Senses and Superior Senses)
- (b) Functions of Synapses
- (c) Functions of Neurotransmitters
- (d) Common Brain Disorders
- (e) Treatment of Brain Disorders

**(3) Respiratory system**

- (a) Structure and Function of Lungs
  - (b) Disorders of Lungs
  - (c) Hypoxia and Oxygen Therapy
- (4) Digestive system
- (a) Ingestion of food
  - (b) Digestion and Absorption in Gastrointestinal Tract
  - (c) Metabolic Functions of liver
  - (d) Disorders of swallowing, stomach, liver, small and large intestine
- (5) Endocrine system
- (a) Synthesis of Hormone
  - (b) Mechanism of action of Hormones
- (6) Physiology of Organs (Functions and diseases)**
- (7) Blood and Circulation
- (a) Blood types (RBCs, WBCs, Platelets)
  - (b) Clotting
  - (c) Anaemia (iron deficiency) and Hemochromatosis (iron overload)
  - (d) Resistance of body to infections (White Blood Cells, Aquired and Innate Immunity)
  - (e) Genetic Blood Disorders
- (8) Kidney
- (a) Renal Structure and Function
  - (b) Renal Regulation of Metals for Control of Blood volume
  - (c) Disorders of Kidney
- (9) Muscles
- (a) Types of Muscles
  - (b) Excitation of Skeletal Muscles
  - (c) Excitation and Contraction of Smooth Muscles

## Disorders of Muscles

### **Recommended Books**

1. **Text Book of Medical Physiology. 11 Edition.** By Guyton A. C. & Hall J. E.(2013).  
Saunders, Elsevier, NewYork.
2. **Text Book of Human Physiology.** By Graham G. R.