



जम्मू केन्द्रीय विश्वविद्यालय
Central University of Jammu

राया-सुचानी (बगला), जिला: सांबा-181143, जम्मू (जम्मू और कश्मीर), भारत
Rahya-Suchani (Bagla), District- Samba, 181143, Jammu (Jammu and Kashmir), India

Course Title: Human Physiology

Credit: 4 (L-4, T-0, P-0)

Course code:

Contact Hrs/Week: 4 Hrs

Course Outcomes

This course shall impart extensive information to the post-graduate students about the different systems within human physiology with special emphasis on their structure and their related functions.

Course Learning Outcomes (CLO): The students will be able to:

1. Importance of food & its nutrients.
2. Physiology and co-ordination of different systems for smooth functioning of human body.
3. Diseases related to malfunctioning of body systems.
4. Acid base balance in body w.r.t ions and gases.
5. Role of vision and auditory organs in body equilibrium.

Unit I

The essential nutrients, vitamins, minerals, water and balanced diet. Structure and function of human digestive tract. Digestion and absorption of carbohydrates, proteins and fats, Neural and endocrine regulation of gastrointestinal tract.

Unit II

Structure and function of human respiratory system, Neural and humoral control of respiration. Respiratory 'acidosis' and 'alkalosis'. Structure and function of human circulatory system, pacemaker system and conducting fibers, neural and humoral regulation of cardiac frequency. Cardiac cycle, blood pressure and its regulation.

Unit III

Structure and types of neurons, Electrical signals and their transmission, resting and action potentials, propagation of nerve impulses, synapses, their types. Physiological role of neurotransmitters (GABA, catecholamines and nitric oxide). Neurotoxins. General properties of sensory receptors for hearing and vision.

Unit IV

Endocrine glands, the basic mechanism of hormone action, hormones and diseases; reproductive processes, gametogenesis, ovulation, neuro endocrine regulation.

Unit V

Structure and function of human excretory system, Ultra filtration, re-absorption and secretion as transport mechanisms involved in urine formation. Role of kidney in body water, electrolyte and acid-base balance. Physiological roles of aldosterone, ADH and RAAS in renal functions. Renal malfunctions and hemodialysis.



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Suggested Readings:

1. Text book of Medical Physiology, by A.C. Guyton. W.B. Saunders Co.
2. Best & Taylor's Physiological Basis of Medical Practice, O.P.Tandon & Y.Tripathi, Lippincott Williams & Wilkins.
3. Ganong's Review of Medical Physiology. Barrett et.al, McGraw Hill Lange.
4. Text book of Medical Physiology, D.Venkatesh & H.H.Sudhakar, Wolters Kluwer.

Course Title: Human Physiology Lab.

Credit: 2 (L-0, T-0, P-4)

Course code:

Contact Hrs/Week: 4 Hrs

Lab component

6. Preparation of blood film and count of RBC and WBC using Hemocytometer
7. Determination of Hemoglobin percentage of human blood using a Haemometer
8. Blood group determination using blood group testing kit
9. Preparation of Hemin crystals
10. To demonstrate the activity of salivary amylase
11. Identification of abnormal constituents of urine
12. To demonstrate effect of posture and exercise on blood pressure
13. Histology of selected organs.