

## **PSG4C01 HUMAN PHYSIOLOGY Complimentary**

### **Module 1 Physiological basis of hunger**

1.1 Neural control of food intake - Role of hypothalamus, Neural centers that influence mechanical process of feeding.

1.2 Factors that regulate quantity of food intake, role of hormones (effect of Cholecystokinin, Peptide YY, GLP, Ghrelin).

1.3 Short-term regulation of food intake, intermediate and long-term effect of food intake.

(Effect of blood concentrations of glucose, amino acids, lipids on hunger and feeding), temperature regulation of food intake.

1.4 Obesity - causes and treatment, Eating disorders (Bulimia, Anorexia, Inanition, Cachexia, Picca).  
**(Hours - 20)**

### **Module 2 Physiological basis of thirst**

2.1 Peripheral factors in water regulation.

2.2 Central factors in water regulation (cellular dehydration thirst and hypovolemic thirst).

**(Hours - 14)**

### **Module 3 Physiological basis of sexual behavior**

3.1 Hormones and sexual development - Fetal hormones and the development of reproductive organs, Sex differences in the brain, perinatal hormones and behavioral development, Puberty: hormones and development of secondary sexual characteristics.

3.2 Effects of gonadal hormones on adults - Male reproduction related behavior and testosterone, Female reproduction related behavior and gonadal hormones.

3.3 Neural mechanisms of sexual behavior - Structural differences between the male hypothalamus and female hypothalamus, the hypothalamus and male sexual behavior, the hypothalamus and female sexual behavior.

**(Hours - 20)**

### **Module 4 Neural basis of emotion**

4.1 Role of frontal lobes.

4.2 Behavioural functions of the hypothalamus and associated limbic structures, Reward centers, Rage - its association with punishment centers, placidity and tameness.

4.3 Functions of Amygdala.

**(Hours - 18)**

### **Module 5 Brain Damage and Neuroplasticity**

5.1 Causes of brain damage - Brain tumors, Cerebrovascular disorders (Cerebral hemorrhage, Cerebral ischemia), Infections of the brain (Bacterial infections, Viral infections), Neurotoxins, Genetic factors, Apoptosis.

5.2 Neuropsychological disorders - Epilepsy (Grand Mal Epilepsy, Petit Mal Epilepsy and Focal Epilepsy), Parkinson's disease, Huntington's disease, Multiple sclerosis, Alzheimer's disease.

**(Hours - 18)**