

**Course Outcome:**

- Enhanced knowledge and appreciation of human physiology.
- Write the functions of important physiological systems including cardio-vascular, excretory, reproductive and digestive systems.
- Identify the movement and coordination of human body, structure and physiology of various muscle systems, hormones and its regulatory functions.
- Write down the interrelationship between various physiological and metabolic processes.

**Unit I:** Transport and Defence: Blood: composition, plasma, blood cells, hemoglobin, blood clotting process, heartbeat, initiation, contraction regulation, physiology of circulation. Adipose tissue structure, composition, deposition of triglycerides in adipose tissues, role of brown adipose tissues in thermogenesis. Immunity: immune response, antibody, cell mediated and humoral immunity.

**Unit II:** Movement and co-ordination: Organization of body, structure of skeletal, cardiac, smooth and physiology of muscle contraction, structure of brain and neurons, physiology of nerve impulse conduction, excitability of membrane, electrical and chemical transmission between cells. Hormones: classification synthesis, regulatory functions and mechanisms of hormone action (specification)

**Unit III:** Digestion: Structure of digestive tract, regulators of GI activity, mechanical aspects of digestion, and transport of major nutrients. Liver- role of liver in processing and distribution of nutrients absorbed from small intestine, inter relationship of major metabolism in liver. Detoxification: Definition. Xenobiotics, enzyme systems involved mechanisms of detoxification. Oxidative stress and anti-oxidants in health free radicals, role of free radicals and anti oxidants in health and diseases.

**Unit IV:** Excretion, detoxification and reproduction: Excretion: Internal structure of kidney and nephron, fluid and electrolyte balance, acid and base balance, physiology of excretion, roles of kidney in body water regulation. Reproductive health and nutritional requirements

**REFERENCES**

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- Mukherjee W F., Review of medical physiology, Tata McGraw Hill
- Jain A K Text book of Physiology Vol I &II, Avical Publishing Co., New Delhi
- Guyton A C. Hall, J E. 1996. Textbook of Medical Physiology 9<sup>th</sup> Ed., Prism Books Pvt. Ltd., Bangalore
- Sembulingam, 2009. Text book of medical physiology.