

FNH 403 HUMAN PHYSIOLOGY

52 Hr (13× 4 units)

Course Outcome:

At the end of the course students will be able to-

- CO 1. Enhance their knowledge of human physiology.
- CO 2. Understand physiological systems such as cardio-vascular, excretory, reproductive and digestive systems.
- CO 3. Identify the movement and coordination of human body, structure and physiology of various muscle systems, hormones and its regulatory functions.
- CO 4. Understand 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 and 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 and chemical 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

- Chatterjee C C., Human physiology Vol I &II, Medical Allied agencies
- 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 9th Ed., Prism Books Pvt. Ltd., Bangalore
- Sembulingam, 2009. Text book of medical physiology.