**HUMAN PHYSIOLOGY-I Credit Hours 2+1**

**AIMS AND OBJECTIVES:**

• This course particularly imparts the concepts and mechanisms of integration in the different functional systems of humans.

• To understand coordination among various systems. Course Detail

• Introduction to Organization of human body including chemical and cellular levels.

• Tissue: Structure and function, Epithelial, Connective, Muscle and Nervous tissues, Bone and Cartilage, Adaptive cellular and tissue behavior, Hyperplasia, Hypertrophy, Atrophy and Genetic abnormalities.

• Blood: Physical characteristics and components of blood, Origin and development of blood cells, Structure and function of RBC, WBC, Platelets, Clotting Cascade, Blood groups and Homeostasis.

• Cardiovascular System: Cardiac Cycle, Heart Sounds, Cardiac Conduction System, Structure and Function of Blood Vessels.

• Lymphatic System: Overview of Lymph, Structure and function of lymphatic tissues and organs.

• Antibodies and Immune cells. Specific and non specific immune reactions.

• Respiratory System: Lung volumes and capacities, Non-respiratory air movements, Alveolar ventilation; mechanism of alveolar gas exchange.

• Digestive System: Structure and function of the digestive organs, Salivary glands and their secretions, Phenomenon of deglutition, Gastric and pancreatic juice and Digestion, absorption and movements of GIT.

**Practicals:**

1. Methods of obtaining blood samples, choice of anticoagulants and preservation.

2. To determine the Clotting Time.

3. To determine total leukocytes count (TLC).

4. To Determine Differential leukocytes count (DLC).

5. To determine the specific gravity and viscosity of blood and plasma.

6. To record the human blood pressure by using Palpatory and Auscultatory methods.

7. To observe and record normal heart activity in exposed frog heart by Kymography.

8. To observe respiratory movement and determination of respiratory rate by Kymography.

9. To determine the normal chemical composition of human saliva.

**Recommended Books:**

1. Shier, D., Butler, J., Lewis, R., 2003. Hole’s Essentials of Human Anatomy and Physiology, 8th ed; McGraw-Hill,.

2. Tortora, G. J. J., and Grabowski, S. R., 2000. Principles of Anatomy and Physiology, 9th ed; John Wiley and Sons,

3. Guyton, A. C. and Hall, J. E. 2005. Textbook of Medical Physiology, 12th ed; W. B Saunders,

4. Waugh, A., Grant, 2002. A., Ross and Wilson Anatomy and Physiology in Health and Illness, 9th ed; Churchill Livingstone,

5. Marieb, E. N., 1997 .Human Anatomy and Physiology, 4th ed; Benjamin/Cummings Science Publishing,

6. Hall, J. E and Guyton, A. C., 2005. Guyton and Hall Physiology Review Elsevier Health Sciences.

7. Seifter, J., 2005. Concepts in Medical Physiology. Lippincott Williams and Wilkins.

8. Martini, F. H., and Ober, W. C., 2005. Fundamentals of Anatomy and Physiology, Pearson Education.

9. Marieb,E.N., 2005. Human Anatomy and Physiology Laboratory Manual: Fetal Pig Version, Update, Pearson.

10. Martini, F. H. 2005. Fundamentals of Anatomy and Physiology - Study Guide, Pearson.

11. Wood, M., 2005 Laboratory Manual for Anatomy and Physiology, Cat Version Pearson.

12. Wood, M, G., 2005.Anatomy and Physiology: Main Version Pearson Education.

13. Moore, K, L., Dalley, A. F. and Dalley, A. F., 2005. Clinically Oriented Anatomy .Lippincott Williams and Wilkins