

Course Code	Course Title	L	T	P	C
1151BM101	ANATOMY AND HUMAN PHYSIOLOGY	3	0	0	3

a) Course Category

Program core

b) Preamble

Knowledge of Human anatomy and physiology is essential for a bio medical engineer in order to design any bio medical instruments. This course gives a basic knowledge about human anatomy

c) Prerequisite

Biology for Engineers

d) Related Courses

Pathology and microbiology

e) Course Outcomes

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on Revised Bloom's Taxonomy)
CO1	Describe basic structural and functional elements of human body	K2
CO2	Explain organs and structures involving in respiratory system formation and functions	K2
CO3	Explain circulatory system and its components.	K2
CO4	Describe the Kidney function and eye and ear senses	K2
CO5	Explain nervous system and its types	K2

f) Course content

UNIT I INTRODUCTION TO TISSUE STRUCTURE 9

Tissue – epithelial – connective – muscle, Membranes, Skeletal system, Joints - Types of Joint, Cavities of the body

UNIT II RESPIRATORY SYSTEM 9

Components of respiratory system, Respiratory Mechanism – Muscles of respiration – Cycle of respiration –Physiological variables – composition of air – Diffusion of gases – External respiration – Control of respiration.

UNIT III CIRCULATORY SYSTEM 9

Blood composition – plasma – cellular content. Blood vessels –Introduction, Structure of heart, Conducting system of heart, Cardiac cycle, Cardiac output, Pulse, Circulation of blood.

UNIT IV URINARY AND SPECIAL SENSORY SYSTEM 9

Urinary system: Structure of Kidney and Nephron. Mechanism of Urine formation and electrolyte balance – Micturition. Special senses: Eye and Ear.

UNIT V NERVOUS SYSTEM 9

Structure of a Neuron – Types of Nerve. Synapse and neurotransmitters. Conduction of action potential in neuron. Brain – Cerebrum – brain stem –cerebellum. Spinal cord – Tracts of spinal cord, Autonomic nervous system.

Total 45 Hrs.

g) Learning Resources Text Books

1. Anne Waugh and Allison Grant, Ross and Wilson “Anatomy and Human Physiology in Health and Illness” Ninth edition.

Reference Books

1. Gillian Pocock, Christopher D. Richards, The human Body – An introduction for Biomedical and Health Sciences, Oxford University Press, USA, 2009
2. William F.Ganong, “Review of Medical Physiology”, 22nd Edition, Mc Graw Hill, New Delhi, 2005