

Course Overview

Physiology

Course code :	AMT 404
Course title:	Physiology
Level/semester:	Forth Semester
Preceding Courses & Main Subjects	- Biology - Human Anatomy & Physiology
Credit hours: 4	Theoretical: 3
	Practical: 2

Contents:

THE CELL:

Cell Structure and functions of various organelles, Homeostasis, Energy and Cellular Metabolism, Cellular Transport and Communication, Electrophysiology of Cell Membrane, Electrical Excitability and Action Potentials, Neurons and Nervous System, Senses and Behaviour, Synaptic Transmission and the Neuromuscular Junction, Cellular Physiology of Muscle, Exercise Physiology and Sports Science, Organization of the Nervous System, Neuronal Microenvironment, Physiology of Neurons, Synaptic Transmission in the Nervous System, Autonomic Nervous System, Sensory Transduction, Endocytosis and exocytosis. Acid base balance and disturbances of acid base balances (Alkalosis, Acidosis).

THE BLOOD:

Composition of Blood, functions of the blood and plasma proteins, classification and protein. Pathological and Physiological variation of the RBC. Function of Hemoglobin Erythrocyte Sedimentation Rate. Detailed description about WBC-Total count (TC), Differential count (DC) and functions. Platelets – formation and normal level and functions, Blood groups and Rh factor.

CARDIO-VASCULAR SYSTEM:

Organization of the Cardiovascular System, Physiology of the heart. Heart sounds. Cardiac cycle, Cardiac output. Auscultatory areas. Arterial pressures, blood pressure. Hypertension. Electro cardiogram (ECG), Microcirculation, Cardiac Electrophysiology.

RESPIRATORY SYSTEM:

Organization of the Respiratory System, Mechanics of, Acid-Base Physiology Respiratory movements, Definitions and Normal values of Lung volumes and Lung capacities, Transport of O₂ and CO₂ in the Blood, Gas

Exchange in the Lungs, Ventilation and Perfusion of the Lungs, Control of Ventilation.

Renal SYSTEM:

Normal Urinary output. Micturation. Renal function tests, renal disorders.

REPRODUCTIVE SYSTEM:

Formation of semen and spermatogenesis. Brief account of menstrual cycle.

Central Nervous system: Functions of CSF.

ENDOCRINE SYSTEM:

Functions of the pituitary, thyroid, parathyroid, adrenal and pancreatic Hormones

DIGESTIVE SYSTEM:

Physiological Anatomy of the GIT.

Food Digestion in the mouth, stomach, intestine, Absorption of foods

Role of bile in the digestion.