

ANATOMY	
Subject Title	: ANATOMY
Duration	: 0 – 12 Months
Total Hours	: 240
Theory	: 150 Hrs
Practical	: 90 Hrs
Total Hours / Week	: 8 Hrs
Lecture	: 4 Hours / Week
Practicals	: 3 Hours / Week
Seminars / Tutorials	: 1 Hour / Week
Method of Assessment	: Written, Oral, Practical

Course Description

It is designed to provide students with the working knowledge of the structure of the human body which is essential foundation for their clinical studies. Studies are concerned with the topographical and functional anatomy of the limbs and thorax. Particular attention is paid to the muscles, bones and joints of the regions. The abdomen, pelvis, perineum, head and neck and central nervous system (CNS) are studied with particular reference to topics of importance to physiotherapists. The study of the CNS includes detailed consideration of the control of motor function.

THEORY

Histology + Embryology + Regional Anatomy	: 30 Hours
Musculo-skeletal Anatomy	: 60 Hours
Neuro Anatomy	: 30 Hours
Applied Anatomy	: 30 Hours

1. Histology ✓

General Histology, study of the basic tissues of the body;

Microscope, Cell, Epithelium, Connective Tissue, Cartilage, Bone, Muscular tissue, Nerve Tissue – TS & LS, Circulatory system – large sized artery, medium sized artery, large sized vein, lymphoid tissue, Skin and its appendages.

2. Embryology

a) Ovum, Spermatozoa, fertilization and formation of the Germ layers and their derivations.

b) Development of skin, Fascia, blood vessels, lymphatic,

c) Development of bones, axial and appendicular skeleton and muscles,

d) Neural tube, brain vessels and spinal cord,

e) Development of brain and brain stem structures

3. Regional Anatomy

Thorax:

a) Cardio – Vascular System

Mediastinum: Divisions and contents

Pericardium: Thoracic Wall: position, shape and parts of the heart; conducting System; blood Supply and nerve supply of the heart; names of the blood vessels and their distribution in the body – region wise.

b) Respiratory system

Outline of respiratory passages

Pleura and lungs: position, parts, relations, blood supply and nerve supply; Lungs – emphasize on bronchopulmonary segments

Diaphragm: Origin, insertion, nerve supply and action, openings in the diaphragm.

Intercostal muscles and Accessory muscles of respiration: Origin, insertion, nerve supply and action.

Abdomen:

c) Peritoneum: Parietal peritoneum, visceral peritoneum, folds of peritoneum, functions of peritoneum.

d) Large blood vessels of the gut

e) Location, size, shape, features, blood supply, nerve supply and functions of the following: stomach, liver, spleen, pancreas, kidney, urinary bladder, intestines, gall bladder.

Pelvis:

f) Position, shape, size, features, blood supply and nerve supply of the male and female reproductive system.

Endocrine glands:

g) Position, shape, size, function, blood supply and nerve supply of the following glands : Hypothalamus and pituitary gland, thyroid glands, parathyroid glands, Adrenal glands, pancreatic islets, ovaries and testes, pineal glands, thymus.

4. Musculo Skeletal Anatomy -(All the topics to be taught in detail)

- a) Anatomical positions of body, axes, planes, common anatomical terminologies (Groove, tuberosity, trochanters etc)
- b) Connective tissue classification.
- c) Bones- Composition & functions, classification and types according to morphology and development.

d) Joints-definition-classification, structure of fibrous, cartilaginous joints, blood supply and nerve supply of joints.

e) Muscles – origin, insertion, nerve supply and actions

f) Upper Extremity :

a. Osteology : Clavicles, Scapula, Humerus, Radius, Ulna, Carpals, Metacarpals, Phalanges.

b. Soft parts: Breast, pectoral region, axilla, front of arm, back of arm, cubital fossa, front of fore arm, back of fore arm, palm, dorsum of hand, muscles, nerves, blood vessels and lymphatic drainage of upper extremity.

✓ c. Joints : Shoulder girdle, shoulder joint, elbow joints, radio ulnar joint, wrist joint and joints of the hand.

d. Arches of hand, skin of the palm and dorsum of hand.

g) Lower Extremity

a. Osteology : Hip bone, femur, tibia, fibula, patella, tarsals, metatarsals and phalanges.

b. Soft parts: Gluteal region, front and back of the thigh (Femoral triangle, femoral canal and inguinal canal), medial side of the thigh (Adductor canal), lateral side of the thigh, popliteal fossa, anterior and posterior compartment of leg, sole of the foot, lymphatic drainage of lower limb, venous drainage of the lower limb, arterial supply of the lower limb, arches of foot, skin of foot.

✓ c. Joints: Hip Joint, Knee joint, Ankle joint, joints of the foot.

h) Trunk & Pelvis:

d. Osteology: Cervical, thoracic, lumbar, sacral and coccygeal vertebrae and ribs

e. Soft tissue: Pre and Para vertebral muscles, intercostals muscles, anterior abdominal wall muscles, Inter-vertebral disc.

f. Pelvic girdle and muscles of the pelvic floor

i) Head and Neck:

g. Osteology : Mandible and bones of the skull.

h. Soft parts : Muscles of the face and neck and their nerve and blood supply-extra ocular muscles, triangles of the neck,

i. Gross anatomy of eyeball, nose, ears and tongue.

✓ 5. Neuro Anatomy

a) Organization of Central Nervous system - Spinal nerves and autonomic nervous system mainly pertaining to cardiovascular, respiratory and urogenital system

b) Cranial nerves

c) Peripheral nervous system

a. Peripheral nerve

b. Neuromuscular junction

c. Sensory end organs

d) Central Nervous System

a. Spinal segments and areas

b. Brain Stem

c. Cerebellum

d. Inferior colliculi

e. Superior Colliculi

f. Thalamus

- g. Hypothalamus
- h. Corpus striatum
- i. Cerebral hemisphere
- j. Lateral ventricles
- k. Blood supply to brain
- l. Basal Ganglia
- m. The pyramidal system
- n. Pons, medulla, extra pyramidal systems
- o. Anatomical integration

PRACTICAL

List of Practical / Demonstrations *

Topics

1. Upper extremity including surface Anatomy[20Hrs]
 2. Lower extremity including surface Anatomy[20Hrs]
 3. Head & Spinal cord and Neck and Brain including surface Anatomy[20Hrs]
 4. Thorax including surface anatomy, abdominal muscles joints[10Hrs]
 5. Histology-Elementary tissue including surface Anatomy[10Hrs]
 6. Embryology-models, charts & X-rays[10Hrs]
- Demonstration of the muscles of the whole body and organs in thorax and abdomen in a cadaver
 - Demonstration of movements in important joints.
 - Surface making of the lung, pleura, fissures and lobes of lungs, heart, liver, spleen,
 - Kidney, cranial nerves, spinal nerves and important blood vessels.
 - Identification of body prominences on inspection and by palpation especially of extremities.
 - Points of palpation of nerves and arteries.

Recommended Text books:

1. SNELL [Richard S], *Clinical Anatomy for Medical students* : Ed. 5. Little Brown and Company Boston. 1995, p898, \$26.50
2. B.D Chaurasia's *Human Anatomy – Regional And Applied; Volume I, Volume II And Volume III*.
3. MOORIE [Kieth L], *Clinically Oriented Anatomy*. Ed.3., Williams and Wilkins, Baltimore, 1992, p917, \$30
4. DATTA[A.K], *Essentials of human Anatomy: Thorax and Abdomen* Ed 2. Vol. I Current Book International, Culcutta 1994, p433, Rs. 200/- DATTA[A.K], *Essentials of human Anatomy: Head and Neck* Ed 2. Vol. II, Current Book International, Culcutta 1995, p363, Rs. 150/-
5. SINGH [Inderbir], *Text book of Anatomy with colour atlas: Introduction, Osteology, Upper Extremity, Lower Extremity*. Vol I. P Brothers, New Delhi 1996, Rs. 200/-
6. SINGH [Inderbir], *Text book of Anatomy with colour Atlas: Thorax and Abdomen*. Vol II. JP Brothers, New Delhi 1996, Rs. 175/-
7. SINGH [Inderbir], *Text book of Anatomy with colour Atlas: Head and Neck Central Nervous System*. Vol III. JP Brothers, New Delhi 1996, Rs. 175/-
8. SINGH [Inderbir], *Human Osteology*. JP Brothers, New Delhi 1990, p191, Rs. 50/-

Practicals

1. ROMANES [G J], *Cunningham manual of practical anatomy: upper and lower limb ed 15 Vol I* Oxford Medical Publication, Oxford 1996, P263, Rs. 325/-
2. ROMANES [G J], *Cunningham manual of practical anatomy : Thorax and abdomen ed 15 Vol II* Oxford Medical Publication, Oxford 1996, P298, Rs. 325/-
3. ROMANES [G J], *Cunningham manual of practical anatomy : Head and Neck and Brain ed 15 Vol II* Oxford Medical Publication, Oxford 1996, P346, Rs. 325/-