STUDY GUIDE

FIRST PROFESSIONAL MBBS

Block I

Pak Red Crescent Medical & Dental College

48-KM Multan Road, Lahore-Pakistan.

Authors of (subject) Study Guide:

Department	Name
Physiology	Prof Dr. Nayla tariq Ch, Dr. Uzma Ather, Dr. Sauda Usmani & Dr. Waliullah Dr. Ieman
Anatomy	Prof. Dr. Naheed tawakal, Dr Riasat
Biochemistry	Prof. Dr. Mustanser, Dr Aysha
Pathology	Prof Dr. Naveed , Dr. Almas
Pharmacology	Pro Dr.Javed Chudhry
Community Medicine	Prof . Dr. Azzizullah

BLOCK –I

ANATOMY

BLOCK –I (FOUNDATION HEMATOPOIETIC AND LYMPHATIC)			
Knowledge			
Topics	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
General Anatomy Introduction to General Anatomy	Briefly describe the applied branches of anatomy Describe the "Anatomical Position" Describe the anatomical planes of body, terms of relationship, used in Anatomy. Describe the anatomical terms used for Limbs. Describe the terms related to movement	LGIS	SEQs MCQs
Bones (Osteology)	Describe, identify, and exemplify the general morphological features of bones. Describe the developmental classification of bones. Describe the regional classification of bones.	LGIS	SEQs MCQs
	Describe the structural and morphological classification of bones. Describe Sesamoid, Pneumatic, Wormian and Heterotopic bones. Describe the classification of bones on the basis of osteogenesis	LGIS	SEQs MCQs
Cartilage (Chondrology)	Describe the general features of cartilage and its importance in gross anatomy. Describe the subtypes of cartilage. Describe the gross features of Hyaline, Elastic and Fibrocartilage. Differentiate the three types of cartilages	LGIS	SEQS MCQs

Joints (Arthrology)	Describe and exemplify the structural classification of Joints (synovial, cartilaginous & fibrous) along with their sub-classification. Describe the components and characteristic features of a Synovial Joint	LGIS	SEQs MCQs
	Describe the blood supply, innervation and lymphatic drainage of Synovial Joints, cartilaginous joints, and fibrous joints. List the factors stabilizing a synovial joint. Describe the mechanism of movements	LGIS	SEQs MCQs
.Integumentary System	Describe the structure and function of Skin on the basis of its two layers; Epidermis and Dermis Describe the surface irregularities of the skin. Describe the structure of Hair as an appendage of skin. Describe the structure of Nail as an appendage of skin. Describe the structure of Sweat and Sebaceous Glands.	LGIS	SEQs MCQs
	Describe the structure and function of Superficial Fascia Describe the structure, function, and modifications of Deep Fascia Describe and classify the burns and anatomical basis of manifestations of integumentary system.	LGIS	SEQs MCQs
Muscle Tissue (Myology)	Define Muscle Classify and describe Muscle Tissue based on Structure, Function and Development Describe Somatic and Visceral Muscles Describe and differentiate the Red and White Variety of Skeletal Muscles Describe Type A, B and C of Skeletal Muscles.	LGIS	SEQs MCQs
	Classify and describe the skeletal muscles based on architecture. Classify skeletal muscle based on action. Describe the parts of a skeletal muscle. Describe the methods of studying skeletal muscle activity. Describe and differentiate the basic organization of innervation to skeletal, smooth, and cardiac muscle.	LGIS	SEQs MCQs SEQs MCQs
	Describe the structure of Tendons. Describe the structure of Synovial Bursae Describe the structure of Raphe. Comprehend the meaning of Paralysis, Spasm, Atrophy, Hypertrophy, Hyperplasia and Regeneration in relation to	LGIS	SEQs MCQs

	muscle tissue. Define Myasthenia Gravis and Polymyositis Define Angina pectoris and Fibrillation of Cardiac Muscle.		
.Vascular System (Angiology)	Classify the types of blood circulation. Classify and exemplify various types of blood vessels. Describe and exemplify various types of anastomoses. Explain the importance of End Arteries Define the terms: Arteriosclerosis, Atherosclerosis and Varicose Veins.	LGIS	SEQs MCQs
	Describe the general organization of Lymphatic Circulation Define the terms: Lymphoid Tissue, Tissue Fluid, Lymphatic Capillaries, Lymph and Lymphatic Vessels Define the terms; Lymphangitis, Lymphadenitis, Lymphadenopathy and Lymphography.	LGIS	SEQs MCQs
Nervous Tissue (Neurology)	Define neuron. Describe the anatomical structure of a neuron. Classify neurons based on morphology with examples. Classify neurons based on function. Describe the components of the central nervous system. Describe the components of the peripheral nervous system.	LGIS	SEQs MCQs
	Name the supporting cells (neuroglia) of the central nervous system. Describe the structure and functions of the neuroglia of the central nervous system. Enumerate the supporting cells (neuroglia) of the peripheral nervous system. Describe the structure and functions of the neuroglia of the peripheral nervous system.	LGIS	SEQs MCQs
	Describe the gross and/or microscopic anatomy of the following structures: Nerve, Nerve fiber, Ganglion, Tract, Fasciculus, Funiculus and Lemniscus Enlist the cranial nerves I to XII Describe the types of nerve fibers carried by and distribution of the cranial nerves.	LGIS	SEQs MCQs
	Describe the formation, types of modalities carried by, and distribution of the spinal nerves. Define and explain Dermatome (s) Define and explain Myotome	LGIS	SEQs MCQs

	(s) Describe the formation of Plexuses. Differentiate between Somatic and Visceral nervous system.		
	Define Receptors Describe the functions of receptors. Classify sensory receptors based on modality (with location) Define Effectors Describe the functions of effectors. Describe ANS and differentiate between sympathetic and parasympathetic nervous system.	LGIS	SEQs MCQs
Imaging in Anatomy	Identify displacement of fracture segments of the bone Identify dislocation of joints Describe the basic concept behind taking a biopsy of a tissue.	LGIS	SEQs MCQs
EMBRYOLOGY Cell cycle and Gametogenesis	Describe the cell cycle Enlist different stages of Mitosis and Meiosis Compare and contrast mitosis and Meiosis.	LGIS	SEQs MCQs
Chromosomal Abnormalities	Enlist the numerical chromosomal anomalies Describe the anatomical basis for numerical chromosomal abnormalities Describe the clinical presentation of numerical chromosomal abnormalities and justify them Embryo logically.	LGIS	SEQs MCQs
	Describe the clinical presentation of structural chromosomal abnormalities and justify them Embryo logically. list the structural chromosomal anomalies Describe the anatomical basis for structural chromosomal abnormalities Describe the anatomical basis for the structural and numerical chromosomal anomalies Describe the embryological basis for mosaicism Describe the embryological basis for teratoma.		
Spermatogenesis	Describe the Process of spermatogenesis and spermiogenesis Describe the embryological basis for Abnormal gametes Discuss the embryological basis of male infertility.	LGIS	SEQs MCQs
Oogenesis	Describe the Prenatal and postnatal maturation of oocyte. Compare and contrast oogenesis and spermatogenesis.	LGIS	SEQs MCQs

	Describe the significance of arrested development of oocyte Describe the hormonal control of oocyte maturation Discuss the embryological basis of female infertility.	LGIS	SEQs MCQs
Female reproductive system	Enlist and briefly describe the female reproductive organs. Describe the hormonal control of female reproductive cycles Enumerate and describe the steps of the ovarian cycle. Describe the process of ovulation Describe the formation, function and fate of corpus luteum Describe the anatomical and physiological basis of the following: Mittelschmerz, Anovulation, Menopause.	LGIS	SEQs MCQs
	Define menstrual cycle Describe the phases of menstrual cycle Describe the anatomical and physiological basis of an-ovulatory menstrual cycle.	LGIS	SEQs MCQs
	Describe the transportation of male and female gametes Describe viability of gametes Explain the anatomical basis of diaspermy, triploid.	LGIS	SEQs MCQs
Fertilization	Define fertilization Describe the phases of fertilization Draw and label a diagram illustrating the phases of fertilization Enumerate and describe the results of fertilization Describe the anatomical and physiological basis of sex determination of the embryo.	LGIS	SEQs MCQs
Contraception	Define contraception Explain the mechanisms of contraceptive techniques: of Barrier methods, Hormonal methods, Intrauterine device (IUD), Emergency contraceptive pills (ECPs) and Male and female sterilization.	LGIS	SEQs MCQs
Infertility & assisted reproductive techniques	Describe the anatomical and physiological basis of male and female infertility Describe the role of clomiphine citrate in inducing ovulation Define assisted reproductive techniques. Describe the mechanisms of following reproductive techniques: 1. In vitro fertilization (IVF) and embryo transfer 2. Cryopreservation of embryo 3. Intra-cytoplasmic sperm injection (ICSI) 4. Assisted in vivo fertilization 5. Surrogacy Explain the correlation of multiple births with assisted reproductive technique.	LGIS	SEQs MCQs

Cleavage, blastocyst formation	Describe the process of cleavage of embryo and blastocyst formation. Describe the differentiation of embryo blast into epiblast and hypoblast.	LGIS	SEQs MCQs
	Describe the establishment of cranial-caudal embryonic axis Describe pre-implantation genetic diagnosis .Describe the origin and uses of embryonic stem cells and the techniques of obtaining these cells from the embryo (reproductive cloning & therapeutic cloning).	LGIS	SEQs MCQs
	Explain the embryological basis of spontaneous abortion. Describe the events and factors influencing the cleavage of zygote. Describe the sequence of events pertaining to formation of blastocyst Compare and contrast the villi.	LGIS	SEQs MCQs
	Describe the process of Compaction Describe the Formation of morula (division into inner and outer cell mass). Describe the anatomical basis for the preimplantation genetic diagnosis. Describe the formation of amniotic cavity, embryonic disc, and umbilical vesicle. Describe the formation of chorionic sac.	LGIS	SEQs MCQs
Implantation	Describe the Uterus at the time of implantation (decidua reaction) Illustrate the concept of Implantation Describe the differentiation of inner and outer cell mass. Describe the Establishment of utero-placental circulation.	LGIS	SEQs MCQs
Abortion	Describe the Abnormal implantation/ extra uterine implantations. Enumerate the factors responsible for inhibition of implantation. Describe the Molar pregnancy Describe the embryological basis of abortions and its types.	LGIS	SEQs MCQs
Gastrulation	Describe the Formation & fate of primitive streak .Draw a concept map highlighting the sequence of events responsible for transformation of bilaminar germ disc into trilaminar germ disc. Describe the embryology behind sacrococcygeal teratoma and justify its clinical picture. Describe the molecular factors responsible for gastrulation. Describe the fate of the notochord.	LGIS	SEQs MCQs
Formation of notochord	Describe the Establishment of body axis Draw and label the fate map establishment. Describe the Fate map establishment.Describe the molecular	LGIS	SEQs MCQs

	basis for notochord formation. Describe the role of notochord as an inducer Describe the embryological basis for situs inversus.		
Derivatives of ectoderm	Describe the Formation of neural tube from neural plate. Justify the clinical picture seen in various neural tube defects Describe the process of Migration of neural crest cells Enlist the Derivatives of neural tube and describe the fate of each. Enlist the Derivatives of neural crest cell. Describe the molecular and genetic factors for the process of neurulation. Enlist & describe the derivatives of ectoderm.	LGIS	SEQs MCQs
Mesodermal derivatives	Describe the Differentiation of mesoderm into its constituting components Describe the Somite formation and its fate Describe the Estimation of age by somites. Describe the formation of intra-embryonic coelom. Enlist and Describe the Derivatives of intermediate and lateral plate mesoderm Enlist & Describe the Derivatives of endoderm.	LGIS	SEQs MCQs
Early development of CVS	Describe the processes of vasculogenesis & angiogenesis Explain the features of primordial cardiovascular system Describe the anatomical justification for Capillary hemangiomas.	LGIS	SEQs MCQs
Folding of embryo	Describe the Cephalo-caudal folding. Describe the Lateral folding.	LGIS	SEQs & MCQs
Embryonic period	Describe the factors influencing the embryonic development.Enlist the characteristic features of the embryo during 4th – 8th weeks. Describe the criteria for estimating the developmental staging in human embryos Explain the estimation of gestational & embryonic age.	LGIS	SEQs MCQs
Fetal period	Explain the trimesters of Pregnancy. Explain the estimation of fetal age Explain the measurement and characteristics of fetus. Describe the Overview of the monthly changes in External appearance of fetus (9th-38th weeks) Describe Viability of fetuses and low birth weight babies Explain the factors influencing fetal growth.	LGIS	SEQs MCQs

	Tabulate the criteria for estimating fertilization age during the fetal period Describe the post maturity syndrome Describe the procedures for assessing fetal status Describe the clinical picture of IUGR & factors resulting in IUGR.	LGIS	SEQs MCQs
Placenta	List the fetal membranes Describe the macroscopic & microscopic features of Decidua Enlist the various parts of decidua Functionally correlate the parts of the decidua with its structure Describe the Changes in the trophoblast leading to the development of placenta. Describe the Structure (macroscopic & microscopic) of placenta Enlist & correlate the Functions of placenta with its structure Describe the Microscopic anatomy of Placental membrane.	LGIS	SEQs MCQs
	Describe the Placental circulation (fetal & maternal) Embryologically justify the hemolytic disease of the neonate Describe the functions of placenta Describe Placenta as an allograft & as an invasive tumor-like structure Describe the placental anomalies and their clinical picture (placenta previa, placenta ecreta, placenta. percreta, battledore placenta, membranous placenta, pre-eclampsia) Describe the role of placenta as an allograft Describe the stages of labor.	LGIS	SEQs MCQs
Fetal membranes	Describe the Formation & fate Umbilical cord Describe the Cord abnormalities Justify embryologically the clinical features observed in Absence of umbilical artery. Explain the clinical picture of umbilical band syndrome and justify it embryologically.	LGIS	SEQs MCQs
	Describe the formation and circulation of Amniotic fluid Enlist the components of amniotic fluid Describe the Procedure of diagnostic amniocentesis Explain the significance of amniotic fluid Describe the factors responsible for Polyhydramnios and oligohydramnios. Describe the characteristic signs and symptoms of oligohydramnios and polyhydramnios and justify embryologically.	LGIS	SEQs MCQs

	Explain the formation and fate of umbilical vesicle (yolk sac) Explain the formation and fate of Allantois Describe the clinical picture of allantoic cyst & sinus and justify it Embryologically.	LGIS	SEQs MCQs
Multiple pregnancies	Describe the development of Dizygotic twins Describe the development of Monozygotic twins Describe the fetal membranes in twin pregnancy Describe the twin transfusion syndrome Explain the zygosity of the twins Describe the characteristics of various types of conjoined monozygotic twins.	LGIS	SEQs MCQs
Prenatal diagnosis and fetal therapy	Describe the Various methods of pre-natal diagnosis Describe the Fetal therapy.	LGIS	SEQs MCQs
Teratogenicity	Define teratology: classification and causes of birth defects Define genomic imprinting. Describe birth defects caused by genetic factors: numerical and structural anomalies Define and enlist the teratogens. Describe the role of following in causing teratogenicity in humans: Drugs Environmental agents Chemicals & heavy metals Infectious agents Radiation Hormones Maternal diseases Describe the basis for male-mediated teratogens.	LGIS	SEQs MCQs
Development of Muscles	Name the molecular and genetic factors involved in the development of musculoskeletal system. Describe the development of skeletal muscle. List the derivatives of epaxial and hypaxial musculature of limb. Briefly discuss the development of cardiac and smooth muscle. Describe the developmental basis of myotome.	LGIS	SEQs MCQs
Development of Limb	List the factors contributing to the development of limb. Describe the role of AER and Zone of polarizing activity in development of limb. Describe the process of limb development and limb growth. Draw a concept map pertaining to development of limb. Compare and contrast the development of upper limb with the development of lower limb.	LGIS	SEQs MCQs

Development of Neurovascular supply of limbs	Describe the embryological basis of cutaneous innervation of limb. Describe the embryological basis of blood supply of limbs and concept of axial artery. Describe the embryological basis of congenital anomalies related to muscular system.	LGIS	SEQs MCQs
Congenital anomalies of limbs	Describe the clinical presentations and embryological basis of 1. Amelia 2. Meromelia 3. Phocomelia 4. Split-Hand/Foot Malformations 5. Polydactyly, Brachydactyly, Syndactyly 6. Congenital club foot.	LGIS	SEQs MCQs
Development of Cartilage	Describe the developmental process of cartilage and bone. Describe the process of histogenesis of cartilage and bone.	LGIS	SEQs MCQs
Process of Ossification	Describe the developmental process of intramembranous and endochondral ossification.	LGIS	SEQs MCQs
Development of Axial skeleton	List the factors contributing to the development of Axial skeletal system. Describe the clinical picture and explain the embryological basis of Axial skeletal anomalies. Describe the developmental process of Vertebral Column. Describe the development of ribs, sternum, and thoracic vertebrae. Give the associated congenital malformation.	LGIS	SEQs MCQs
Early Development of Heart	Describe the early development of heart and blood vessels. Define parts of primitive heart tube and give its folding. Describe the development of various chambers of heart with emphasis on their partitioning. Identify various parts of developing heart tube and structures derived from them during embryonic and fetal life. Describe the embryological basis of dextrocardia and ectopia cordis.	LGIS	SEQs MCQs
Late Development of Heart	Describe the partitioning of primordial heart: atrioventricular canal and atrium. Describe the development of sinus venosus. List clinically significant types of atrial septal defects along with their embryological basis and features. Describe probe patent foramen ovale.	LGIS	SEQs MCQs

	Describe the partitioning of truncus arteriosus and bulbus cordis. Describe the formation of ventricles and interventricular septum. Describe the clinical features and embryological basis of ventricular septal defects. Describe the development of cardiac valves and conducting system. Describe the development of lymphatic system.	LGIS	SEQs MCQs
	Describe the embryological correlates and clinical presentation of developmental defects of heart: Tetralogy of Fallot, Patent ductus arteriosus, Unequal division of arterial trunks, Transposition of great vessels and Valvular stenosis, Coarctation of aort.	LGIS	SEQs MCQs
Development of Arteries	Describe the formation and fate of pharyngeal arch arteries. Describe the anomalies of great arteries emerging from heart: Coarctation of aorta, anomalous arteries.	LGIS	SEQs MCQs
Development of Veins	Describe the development of embryonic veins associated with developing heart: Vitelline veins, Umbilical Veins and Common cardinal vein and their fate. Describe the formation of superior & inferior vena cava and portal vein with their congenital anomalies. With the help of diagrams illustrate the development of superior vena cava, inferior vena cava and portal vein.	LGIS	SEQs MCQs
Fetal Vessels and circulation	List the derivatives of fetal vessels and structures: Umbilical vein, ductus venosus, umbilical artery, foramen ovale, ductus arteriosus. Describe Fetal and neonatal circulation mentioning transitional neonatal circulation with its clinical implication.	LGIS	SEQs MCQs
Congenital Heart defects	List clinically significant types of atrial septal defects along with their embryological basis and features. Describe patent foramen ovale. Describe the embryological correlates and clinical presentation of developmental defects of heart: Tetralogy of Fallot, Persistent ductus arteriosus, Unequal division of arterial trunks, Transposition of great vessels and Valvular stenosis.	LGIS	SEQs MCQs

Diaphragm	Describe the embryological basis of congenital anomalies of the diaphragm: diaphragmatic hernias, eventuation of diaphragm, epigastric hernia, hiatal hernia, retrosternal hernia.	LGIS	SEQs MCQs
Upper respiratory tract	Describe the development of upper respiratory tract: larynx and trachea. Describe congenital anomalies of larynx and trachea: laryngeal web, laryngeal atresia, tracheal stenosis and atresia. List the types of tracheo-esophageal fistulas. Describe their embryological basis and clinical presentation.	LGIS	SEQs MCQs
Lungs	List the phases of lung development with their time periods. Describe the events taking place in each phase. Describe the embryological basis and clinical presentation of respiratory distress syndrome/Hyaline membrane disease.	LGIS	SEQs MCQs
Histology Basic techniques in histology	Describe different types of microscopies Describe Staining methods and their significance Describe the basis of enzyme histochemistry.	LGIS	SEQs MCQs
Cell membrane	Describe the electron microscopic structure and fluid mosaic model of plasma membrane Draw the fluid mosaic model of plasma membrane Draw and label the structure and function of glycocalyx coat and lipid raft Describe the structure of glycocalyx coat and lipid raft and correlate it with function Describe different types of membrane proteins and their functions.	LGIS	SEQs MCQs
Cell organelles	List the membranous and non-membranous cellular organelles Draw and label the light and electron microscopic structure and functions of the cellular organelles Describe the structure of the following cellular organelles and correlate with their function: • Ribosomes • Endoplasmic reticulum (rough & smooth) • Golgi apparatus • Lysosomes • Proteasome• Mitochondria • Peroxisomes Describe the clinical presentation of lysosomal storage diseases	LGIS	SEQs MCQs

	and correlate with their histological basis. Describe the histological features of cytoplasmic inclusions		
	Describe the structural components of cytoskeleton, and correlate them with their functions Explain the histological basis of immotile cilia syndrome	LGIS	SEQs MCQs
Cell Nucleus	Describe the structure of nuclear envelope and nuclear pores Describe the structure of chromatin Describe the structure of chromosome Draw and label the structure of nucleolus Describe the structure of nucleolus Describe the structure and types of DNA and RNA.	LGIS	SEQs MCQs
Epithelium	Draw and label a diagram illustrating the electron microscopic structure of basement membrane. Describe the basal surface modifications of epithelia Describe the electron microscopic structure and functions of intercellular junctions (lateral surface modifications) and give their locations Describe the Biochemical composition of the basolateral modifications.	LGIS	SEQs MCQs
	Describe the electron microscopic structure of the following apical cell surface specializations: 1. Microvilli 2. Sterocilia 3. Cilia	LGIS	SEQs MCQs
	Describe the structure of exocrine glands Explain the mechanism of transport across the epithelia Describe the classification of exocrine glands on the basis of: 1. Shape of secretory portions and ducts 2. Mode of secretion 3. Type of secretion	LGIS	SEQs MCQs
Connective tissue	Describe the composition and list the constituents of connective tissue Classify the connective tissue with examples Describe the composition of ground substance of connective tissue Describe the composition, distribution, and function of glycosaminoglycans in connective tissue Explain the role of GAGs in formation of barrier against bacteria and the role of hyaluronidase in the breakdown of this barrier.	LGIS	SEQs MCQs

	Describe the structure, distribution, and functions of the cells of macrophage-mononuclear phagocytic system. Describe the role of macrophages in innate immunity.	LGIS	SEQs MCQs
	Describe the types of adipose tissue (white & brown), their histogenesis, locations and function. Explain the etiology of Marfan's syndrome. Describe lipid storage and mobilization in and from pathology adipocytes and compare the brown and white adipose tissue.	LGIS	SEQs MCQs
Histology of Muscles	Describe the microscopic structure and ultramicroscopic structure of skeletal muscle. Explain the basis of myasthenia gravis and Duchenne muscular dystrophy. Describe the microscopic and ultramicroscopic of smooth muscle.	LGIS	SEQs MCQs
	Identify, draw and label histological structure of cardiac muscle. Describe the microscopic and ultramicroscopic structure of cardiac muscle emphasizing on Ttubules, sarcoplasmic reticulum and intercalated discs. Scribe the regeneration of muscle, hyperplasia, and hypertrophy of muscle fiber tissue. Compare and contrast the histological features of three types of muscle.	LGIS	SEQs MCQs
Histology of Osseous tissue	Describe the light and electron microscopic structure of bone cells. Describe the histological justification for osteoporosis, osteopenia. Describe the histological basis for bone repair. after fractures.	LGIS	SEQs MCQs
Histology of Bone	Describe the light and electron microscopic structure of compact and spongy bone. Compare and contrast the microscopic features of compact and spongy bone. Draw a concept map to explain the characteristic features of ossification. Draw and label the zones seen in an epiphyseal growth plate. Describe the clinical presentation of osteoporosis, osteopenia. Describe the histological basis for bone & Cartilage growth and repair.	LGIS	SEQs MCQs

Histology of Cartilage	Describe the microscopic and ultramicroscopic structure of all types of cartilage. Compare and contrast the structure of cartilage and bone matrix. Tabulate the differences between three types of cartilage.	LGIS	SEQs MCQs
Histology of Blood Vessels Arteries	Describe general histological organization of blood vessels: Tunica intima, media and adventitia. Identify, draw and label histological sections of elastic artery, muscular artery, arterioles, vein, capillaries and sinusoid. Describe histological features of arteries: Muscular arteries, elastic arteries, Arterioles.	LGIS	SEQs MCQs
Veins	Describe histological features of veins and exchange vessels: large veins, medium sized veins, venules, Capillaries, and sinusoids. Describe histological features of veins and exchange vessels: large veins, medium sized veins, venules, Capillaries, and sinusoids.	LGIS	SEQs MCQs
Thrombus/ Embolus formation Arteriosclerosis atherosclerosis	Describe the histopathological basis of thrombus and embolus formation. Explain the histological basis of arteriosclerosis and atherosclerosis. Describe role of arterioles in hypertension.	LGIS	SEQs MCQs
Lymphoid tissue	Light microscopic structure of Spleen, Thymus, Lymph nodes, tonsils and MALT including Appendix.	LGIS	SEQs MCQs
Histology of respiratory system Respiratory epithelium	Give the general histological organization of respiratory system. Describe the microscopic and ultramicroscopic structure of respiratory epithelium. Describe the histology of blood-air barrier.	LGIS	SEQs MCQs
Histology of Epiglottis & larynx	Describe the histological features of epiglottis and larynx.	LGIS	SEQs MCQs
Histology of Trachea and lungs	Describe the histological features of trachea and lung. Explain the histological basis of: Coughing Atelectasis Infant respiratory distress syndrome Diffuse alveolar damage Lung carcinoma.	LGIS	SEQs MCQs

Psychomotor Domain			
Topic	**Learning Objective**	**Mode of information transfer**	**Assessment tool**
PRACTICAL Staining techniques	Describe different types of staining techniques and their significance with special emphasis on H&E staining	SGD	SEQs MCQs OSPE Viva Voice
Microscope	Identify and draw different parts of light microscope	SGD	SEQs MCQs OSPE Viva Voice
Cell shapes	Identify and demonstrate different cell shapes under the microscope	SGD	SEQs MCQs OSPE Viva Voice

Covering Epithelium	Identify and demonstrate under light microscope the following types of epithelia: 1. Simple squamous 2. Simple cuboidal Simple columnar 4. Pseudostratified columnar (ciliated & nonciliated) 5. Stratified squamous (keratinized & non keratinized) 6. Stratified cuboidal 7. Stratified columnar 8. Transitional	SGD	SEQs MCQs OSPE Viva Voice
Glandular Epithelium	Identify and demonstrate serous & mucous secreting glands under light microscope	SGD	SEQs MCQs OSPE Viva Voice
Connective tissue	Identify and demonstrate the various types of connective tissue	SGD	SEQs MCQs OSPE Viva Voice
Histological features of lymph node, spleen & thymus	Light microscopic structure of Spleen, Thymus, Lymph nodes, tonsils and MALT including Appendix	SGD	SEQs MCQs OSPE Viva Voice

Reference Books anatomy

Clinical Anatomy for Medical Students by Richard Snell (9th edition).

Basic Histology Text and Atlas by Luiz Carlos and Junqueira (14th edition)

Basic Histology by Laiq Hussain Siddiqui (5th Revised edition)

Medical Embryology by Langman (14th edition).

Essential Clinical Anatomy by Keith Moore (7th edition).

The Developing Human by Keith Moore (10th edition).

PHYSIOLOGY

TEACHING FACULTY

Sr. #	Name	Qualification	Designation
1	Dr. Nayla Tariq	MBBS, MPhil Physiology	Professor
2	Dr. Uzma Ather	MBBS, MPhil Physiology CHPE, NUMS , DGO (PGMI)	Associate professor
3.	Dr Sauda Usmani	MBBS (KEMU), FCPS (PHYSIOLOGY), CMT (UHS)	Associate Professor
4	Dr. Walliullah	MBBS, MPhil Physiology	Assistant Professor
5	Dr. Amjed Adrees	MBBS	Senior Demonstrator
5	Dr. Ieman Saaeed	MBBS	Demonstrator

5	**Dr. Arfa Usman**	**MBBS**	**Demonstrator**
5	**Dr. Rameen Azam**	**MBBS**	**Demonstrator**

Rationale of Physiology Curriculum:

Physiology is the study of the functions of living things. To understand physiology, we will focus on how the human body works. Two approaches are used to explain events that occur in the body; one emphasizes the *purpose* of a body process and the other emphasizes the underlying *mechanism* by which this process occurs. Studying physiology is like opening a book to all aspects of medicine. Hence, this study guide has been designed to enable students to have a basic understanding about the normal structure and functions of all systems of body. Not only that, but students would also learn, when normal physiology of body system is disturbed, what disorders occur in our community. Emphasis has been given to incorporate deranged laboratory findings into the clinical problem solving.

BLOCK –I (FOUNDATION HEMATOPOIETIC AND LYMPHATIC)			
The Cell and General Physiology **Knowledge**			
Topics	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
1. Homeostasis	Define Homeostasis Explain control system of body by giving examples Differentiate between Extracellular and Intracellular Fluids Explain the positive and negative feedback mechanisms with examples Explain the significance of feed forward/ adaptive control/delayed negative feedback mechanisms	Interactive Lectures. Tutorials. Clinical Integration. Seminars Assignments Presentations	MCQs SEQs Viva Voce Assignments Presentations Open Book Examination Internal evaluation carries 20% weightage in summative examination. Continuous monitoring of attendance and academics in tutorials

2.Cell membrane	Explain the structure of cell membrane Enlist the types of cell membrane proteins Enumerate the functions of membrane proteins Define and enumerate the functions of cell Glycocalyx Medical Physiology Cell Biology	Interactive Lectures. Tutorials/SGD Clinical Integration/ Seminars Assignments/ Presentations	MCQs SEQs Viva Voce Assignments / Presentations
3. Organelles	Enlist membranous and non-membranous organelles Enlist the self-replicative organelles Differentiate between the functions of smooth and rough endoplasmic reticulum Explain the functions of Golgi apparatus Enlist the enzymes of lysosomes Explain the functions of lysosomes Enlist the enzymes of peroxisomes Explain the functions of peroxisomes Enumerate the components and functions of cytoskeleton	Interactive Lectures. Tutorials/SGD Clinical Integration/ Seminars Assignments/ Presentations	MCQs SEQs Viva Voce Assignments / Presentations
Transport across the cell membrane	Define and enlist types of endocytosis Explain the mechanism of pinocytosis	Interactive Lectures. Tutorials/SGD	MCQs SEQs

	Classify different transport mechanisms Define and enlist different types of diffusion Explain the process of facilitated diffusion with the aid of diagram Define and classify different types of active transport Describe primary and secondary active transport with examples Explain voltage and ligand gated channels with examples Name Na, K channel Blockers. Discuss functions and significance of Na/K ATPase pump	Clinical Integration/ Seminars Assignments/ Presentations	Viva Voce Assignments / Presentations
Extracellular and intracellular fluid	Differentiate between Extracellular and Intracellular Fluids Compare the composition of Na, K and Cl in extracellular and intracellular fluid	Interactive Lectures. Tutorials/SGD Clinical Integration/ Seminars Assignments/ Presentations	MCQs SEQs Viva Voce Assignments / Presentations

Blood Physiology	**Knowledge**		
Topics	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
1 . Composition of Blood	Enumerate the functions of blood Explain the composition of blood	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
2.Composition of blood	Enumerate plasma protein Discuss functions of plasma proteins & describe the pathophysiology of edema	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
3. Red Blood Cells	Discuss the characteristics of red blood cells Explain different types of Bone marrows Enumerate the different sites of erythropoiesis at different ages Explain the stages of erythropoiesis Enumerate factors that regulate erythropoiesis Discuss the site and role of erythropoietin in red blood cell production Explain the significance of vitamin B12 and folic acid in maturation of red blood cell	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce

4. Haemoglobin	Enumerate the types of normal hemoglobin in different ages of life Explain the role of Iron in Hemoglobin formation. Define blood indices, give their normal values & enumerate the conditions in which these values are disturbed Enlist the abnormal types of hemoglobin	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
5. White Blood Cells	Enumerate the types of white blood cells Describe the characteristics and functions of Neutrophils Explain the process of defense against invading agent by neutrophils Define leukocytosis and leukemia Explain the effects of leukemia on body Define leukopenia Explain the process of defense against invading agent by macrophages Discuss different lines of defense during inflammation Explain the functions of neutrophils and macrophages in spread of inflammation (walling off effect) Define the Reticuloendothelial system Enlist the different components of Reticuloendothelial system	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce

	Explain the characteristics and functions of basophils Explain the characteristics and functions of eosinophils and enlist conditions in which these cells are raised..		
6. Blood Types	Enumerate different blood group types. Explain the basis of ABO and Rh blood system Explain the Landsteiner law	Integrated lecture Physiology /Medicine/ Cardiology/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
Hematopoietic and Lymphatic	**Knowledge**		
1. **Anemia**	Define anemia Classify anemia on the basis of morphology and cause Discuss the effects of anemia on the body	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
2. Polycythemia	Define polycythemia Explain types of polycythemias Discuss the effects of polycythemia on the body	Integrated lecture Physiology tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
3. Hemostasis	Define hemostasis Describe the mechanisms by which hemostasis is secured	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce

4. **Platelets**	Discuss the characteristics and functions of platelets Explain the mechanism of formation of platelet plug Enlist the clotting factors in blood Coagulation factors Explain the conversion of Prothrombin to Thrombin & formation of Fibrin Fibers Explain the Intrinsic & extrinsic clotting pathway. Name & explain the mechanism of anticoagulants used in laboratory. Explain the factors that prevent intravascular coagulation Explain the role of Calcium ions in Intrinsic and Extrinsic pathways Enlist the vitamin K dependent clotting factors Explain the prothrombin time, INR, and its clinical significance.	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
5. Coagulation disorder	Enlist and explain the conditions that cause excessive bleeding Coagulation disorders Define thrombocytopenia integrate with medicine Enlist the causes and consequences of Thrombocytopenia	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce

6. Immunity	Define immunity Immunity Classify immunity Explain humoral immunity Explain Innate immunity. Elaborate cell mediated immunity. Describe the structure of antigen and immunoglobulin Describe the role of Helper T-cells in cell mediated immunity Enlist the types of Immunoglobulins along with their functions Explain the role of memory cells in enhancing antibody response (secondary response) Describe the mechanism of action of antibodies Elaborate the complement system.	Integrated lecture Physiology tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
7. Tolerance	Elaborate Immune tolerance Tolerance Explain the process of clone selection during T cell processing Discuss the failure of tolerance mechanism	Integrated lecture Physiology tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
8. Immunization	Discuss immunization. Integrate with Pediatrics	Integrated lecture Physiology /Medicine/ / tutorial/TBL / SGD/ PBL	MCQs, SEQs,

	Immunizatio n Define passive Immunity Explain features and physiological basis of delayed reaction allergy. Explain features and physiological basis of Atopic Allergy Explain features and physiological basis of Anaphylaxis, urticaria and Hay fever.		Viva Voce
9. Blood Grouping incompatibility	Discuss the pathophysiology, features and treatment of ABO and RH incompatibility	Integrated lecture. Pathology tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
10. **Blood mismatch transfusion reaction**	Discuss the features and complications of mismatched blood transfusion reaction Blood mismatch Transfusion reactions Elaborate the Transplantation of Tissues and Organs	Integrated lecture. Pathology tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce
11. Transplantation of tissues	Explain prevention of Graft Rejection by suppressing immune system	Integrated lecture. Nephrology tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce

Autonomic Nervous System	Knowledge		
Topics	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
ANS	Discuss Components of Autonomic nervous system Explain the Physiological anatomy of sympathetic and parasympathetic nervous system Describe the types of adrenergic and cholinergic receptors and their functions Explain the effects of sympathetic and parasympathetic on various organs/ system of body	Integrated lecture Physiology / tutorial/TBL / SGD/ PBL	MCQs, SEQs, Viva Voce

Psychomotor Domain

Blood & Hematopoietic system	**Psychomotor Domain**		
Topic	**Learning Objective**	**Mode of information transfer**	**Assessment tool**
Consent	Explain laboratory/clinical procedure to the subject. Obtain verbal consent from subject before starting a procedure. Reassure the subject after the procedure.	Demonstration/performance/	OSPE/ viva voce
RBCs	Determine Erythrocyte Sedimentation Rate and packed cell volume	Demonstration/performance/	OSPE/ viva voce
Blood Group	Determination of blood group	Demonstration/performance/	OSPE/ viva voce
WBCs	Interpret Total Leucocyte Count, Differential Leucocyte Count (normal & abnormal) in a CBC report generated by Automated Cell Counter.	Demonstration/performance/	OSPE/ viva voce
Blood Cells	Interpret the Red Blood Cell Count, Hemoglobin concentration, Hematocrit and RBC Indices by Automated Cell Counter Interpret the Total Leucocyte Count, Differential Leucocyte Count Platelet Count by Automated Cell Counter.	Demonstration/performance/	OSPE/ viva voce
Bleeding/Clotting time	Determine Bleeding Time. Determine Clotting Time.	Demonstration/performance/	OSPE/ viva voce

Text and Reference Books:

1. **Guyton and Hall Textbook of Medical Physiology 13th Edition**
2. **Ganong's Review of Medical Physiology 23rd Edition**
3. **Berne and Levy Physiology 7th Edition**
4. **Fundamentals of Human Physiology by Lauralee Sherwood 4th Edition**
5. **Essentials of Medical Physiology by Prof. Dr. Mushtaq Ahmad**
6. **Physiology by Linda and Costanzo**

(BIOCHEMISTRY)

TEACHING FACULTY

Sr. #	Name	Qualification	Designation
1	Prof Dr M Mustansar	MBBS, MPhil	HOD/Professor
2	Dr Faheem Siddiqui	MBBS, MPhil	Assistant professor
3	Dr Aaisha Qadir	MBBS, MPhil	Assistant Professor
4	Dr Amina Shahid	MBBS, MPhil	Senior Demonstrator
5	Dr Abubakar	MBBS	Demonstrator
6	Dr Jawad Alvi	MBBS	Demonstrator

Rationale of (Biochemistry) Curriculum:

It is a growing and emerging field of science which is evolving at an amazingly fast pace. It helps us to understand the complexity of life by learning the chemical processes taking place

in our body. A sound base in biochemistry assists our understanding of other sciences like pharmacology, chemical pathology, forensic sciences, medicine etc to comprehend the minute intricacies of human existence.

BLOCK –I (FOUNDATION HEMATOPOIETIC AND LYMPHATIC) Biochemistry			
Knowledge			
Topics **Block –I**	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
1. Structure of cell	Differentiate between different types of cells. Explain the concept of organization of cells to tissue, tissues to organ, and organs to system. Differentiate between the eukaryotic and prokaryotic cells. (FB-001)	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
2. Cell Membrane	Describe the composition and structure of cell on biochemical basis and justify it as fluid mosaic model. Describe the structure and function of cell membrane with particular reference to the role of (i) Lipids (ii) Carbohydrates (iii) Proteins Explain why the cell membrane is called fluid mosaic model (FB-003)	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
3. Signal transduction FB-004	Discuss the various ways of cell-to-cell communication and to the environment. Describe cell to cell communications. Cell signaling	Power point, interactive lectures	Seq, Mcq, Ospe, Viva

	pathways (only G protein signaling) Describe cell to cell adhesion.		
4. Subcellular organelles FB-004	Explain the biochemical markers and importance of subcellular organelles and their inherited disorders especially: Subcellular organelles a. I-cell disease b. Refsum disease c. Parkinsonism d. Progeria	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
5. Chemistry of purine and pyrimidines FB-005	Describe the chemistry of purines and pyrimidines and their linkage in nucleic acid synthesis and their metabolism	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
6. DNA FB-006	Discuss the organization of DNA with special reference to Watson and crick model, composition, structure, role of pairing and genetic coding Describe the structural forms of DNA	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
7. RNA FB-007	Discuss the structure of different types of RNAs with special reference to composition, linkage, functions hn RNA, micro RNA Illustrate the structure and functions of various types of RNAs Describe the functions of various small RNAs present in cell	Power point, interactive lectures	Seq, Mcq, Ospe, Viva

8. Nucleotides FB-008	Explain the structure and nomenclature of nucleotides, biomedical importance of natural and synthetic analogues Interpret the role of synthetic analogues of nucleotides in medicine based on sign/symptoms and data e.g Methotrexate, 5 Flurouracil and Allupurinol.	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
9. Chromosome FB-009	Explain the higher organization of DNA. Difference between DNA, chromatid and chromosome.	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
10. Nucleotide Metabolism FB-010	Illustrate de Novo and salvage pathways of purines and pyrimidines Describe the degradation of purine and pyrimidine nucleotides, Interpret Lesch-Nyhan syndrome, gout and adenosine deaminase deficiency on given data	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
11. Replication FB-011	Describe in detail all the steps in prokaryotic DNA replication with emphasis on: Different proteins required, Primers, DNA polymerase; their different components and functions, Initiation, elongation and termination of replication, Topoisomerases Describe in detail all the steps in Eukaryotic DNA replication with emphasis on differences between Pro- and Eukaryotes	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
12. DNA repair FB-012	Describe DNA repair especially Xeroderma pigmentosa	Power point, interactive lectures	Seq, Mcq, Ospe, Viva

13. Transcription FB-013	Explain the transcription in prokaryotes focusing on the following key points; RNA polymerase, its components and functions, Initiation, elongation, and termination of transcription Illustrate the transcription in eukaryotes focusing on the differences between pro- and eukaryotic transcription and post transcriptional modifications Wobble hypothesis	Power point, interactive lectures	Seq, Mcq, Ospe, Viva
14. FB-014 Translation	interpret the translation focusing on the following key points: Initiation, elongation and termination and inhibition by drugs Describe Post-translational modification of proteins	Power point, interactive lectures	Seq, Mcq, Ospe, Viva

PATHOLOGY

TEACHING FACULTY

Sr. #	Name	Qualification	Designation
1.	Prof. Dr. Nazifa Usman	MBBS, MPhil (Histopathology)	Head of Department/ Professor
2.	Prof. Dr. Navid Qureshi	MBBS, MPhil (Histopathology)	Professor
3.	Prof. Dr. Shagufta Iram	MBBS, MPhil (Microbiology)	Professor
4.	Dr. Nasir Rashid	MBBS, MPhil (Hematology)	Assistant Professor
5.	Dr. Almas Raza	MBBS, MPhil (Microbiology)	Assistant Professor
6.	Dr. Sheema Khan	MBBS, MPhil (Chemical Pathology)	Assistant Professor
7.	Dr. Sakina Jamil	MBBS, MPhil (Histopathology)	Assistant Professor
8.	Dr. Komal Qazi	MBBS	Demonstrator
9.	Dr. Batool Zehra	MBBS	Demonstrator

10.	Dr. Shafique Rafique	MBBS	Demonstrator
11.	Dr. Safana Shabbir Agha	MBBS	Demonstrator

BLOCK –I (FOUNDATION HEMATOPOIETIC AND LYMPHATIC) pathology			
Knowledge			
Topics	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
1. Cell Injury	• Discuss the significance of pathology. • Discuss the causes of cell injury. • Identify the types of cell injury. • Describe the mechanism of cell injury Identify the types of cell death. • Define necrosis and apoptosis. • Describe different types of necrosis. • Compare apoptosis with necrosis. • Identify different types and mechanism of cellular adaptations to stress • Discuss the mechanism and types of intracellular accumulations and pathological calcifications	Power point, interactive lectures	MCQs

2. Introduction to Microorganisms	• Enumerate the microbes causing infectious diseases. • Describe the structure of bacterial cell • Differentiate cell walls of gram positive and gram-negative bacteria. • Compare the structure of bacterial cell and virus • Discuss the growth curve of bacteria. • Enlist steps of viral replication • Identify types of bacterial infections • Enlist stages of bacterial pathogenesis • Discuss the determinants of bacterial pathogenesis	Power point, interactive lectures	MCQs
3. Sterilization & Disinfection	• Define sterilization and disinfection. • Describe the principles of sterilization and disinfection. • Describe clinical uses of common disinfectants and their mode of sterilization	Power point, interactive lectures	MCQs
4. Blood Cells, Platelets and Blood Group	• Define and classify anemias according to underlying mechanism and MCV/MCH • Discuss the causes and investigations of iron deficiency anemia and megaloblastic anemia • Classify the benign and malignant disorders of WBCs • Discuss the causes leading to reactive leukocytosis	Power point, interactive lectures	MCQs

	• Interpretation of anemias on the basis of peripheral blood smear and bone marrow findings • Classify bleeding disorders • Discuss first line laboratory investigations for bleeding disorders • Describe the basic concept of blood grouping and acute hemolytic transfusion reaction		

PHARMACOLOGY

TEACHING FACULTY

Sr. #	Name	Qualification	Designation
1	Prof Dr Javed Ch.	MBBS, MPhil	HOD/Professor
2	Dr Faiza Khan	MBBS, FCPS(Pharmacology)	Associate professor
3	Dr Qura-Tul-Ain	MBBS, MPhil	Assistant Professor
4	Dr Zafar Aziz	MBBS	Demonstrator
5	Dr Nida Nadeem	MBBS	Demonstrator
6	Dr Seemal Azhar	MBBS	Demonstrator

Knowledge			
Topics **Block –I**	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**
Foundation 1			
Absorption, Distribution, Metabolism and Excretion of drugs	Definitions of Pharmacology, drug, pro-drug, placebo, active principles, sources of drugs; Brief outline of Absorption, Distribution, Metabolism and Excretion	Power point, interactive lectures	Seq, Mcq , Ospe, Viva
Basic terminologies of Pharmacology	Definitions of receptor, agonist, partial agonist, inverse agonist, antagonist and types of receptors and second messengers; Diagrammatic concept of signaling mechanisms	Power point, interactive lectures	Seq, Mcq , Ospe, Viva

Autonomic System	Pharmacological aspects of Autonomic Receptors (types of autonomic receptors, important sites and actions)	Power point, interactive lectures	Seq, Mcq , Ospe, Viva
Hematopoietic & Lymphatics			
Anemia	Describe the oral and parenteral iron preparations including their pharmacokinetics, uses, adverse Effects. Vitamin B12 preparations, Iron Antidotes HL-B 008 Explain and interpret pedigree of single gene defect i.e. sickle cell anemia (Autosomal recessive) and Beta Thalassemia (x linked recessive) Genetics Should know the terms: Hematopoietic growth factors, their name, mechanism of actions , uses and adverse effects	Power point, interactive lectures	Seq, Mcq , Ospe, Viva

TEACHING FACULTY

Sr. #	Name	Qualification	Designation
1	Dr. Shabbier Ahmed Khan	MBBS, FCPS (Community Medicine)	Professor

2	Dr. Saddique Baber	MBBS, MSc (Public Health)	Assistant Professor
3.	Dr. Muhammad Azizullah	MBBS (KE), MPH (UK) PhD (Public Health Scholar)	Assistant Professor
4	Dr. Menahal Azam	MBBS	Demonstrator
5	Dr. Adila Sharif	MBBS	Demonstrator
6	Dr. Kashif Munir	MBBS	Demonstrator
7	Dr. Hafiz Muhammad Baqir	MBBS	Demonstrator

	COMMUNITY MEDICINE AND PUBLIC HEALTH		Knowledge	
	Block 1 Modules			
Code	**Topics**	**Learning Objectives**	**Mode of Info Transfer**	**Assessment Tool**

FCM-001	Concept of Health	▪ Describe the changing concepts and new philosophy of health ▪ Explain responsibility for health Community medicine and public Health Concept of health	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs,
FCM-002	Positive Health Dimensions, Health Determinants	▪ Explain dimensions and determinants of health andtheir role in achieving positive health ▪ Discuss concept of health and wellbeing ▪ Describe the Physical quality of Life Index & HumanDevelopment Index	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs
FCM-003	Health Indicators	▪ Describe the importance of health indicators ▪ Classify health indicators ▪ Calculate Morbidity and Mortality Describe Disability indicators ▪ Compare indicators among countries	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs,
FCM-004	Disease Causation	▪ Conceptualize disease causation and natural history of disease ▪ Explain Germ theory & multifactorial causation ▪ Describe Epidemiological Triad ▪ Discuss Web of disease causation ▪ Describe Gradient of infection	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs,
FCM-005	Disease Prevention	▪ Describe principles of prevention and control on prevalent diseases ▪ Explain difference between elimination and eradication ▪ Describe disease surveillance, types and cycle ▪ Explain Primary, secondary, & tertiary prevention	Interactive lecture/ tutorial/TBL / SGD/ PBL	MCQs, SEQs,

		▪ Describe five levels of interventions		

Recommended Books

- **Community medicine • Parks Textbook of Preventive and Social Medicine. K. Park (Editor) .**
- **Public Health and Community Medicine Ilyas, Ansari (Editors)**