UNIVERSITY OF HEALTH SCIENCES LAHORE

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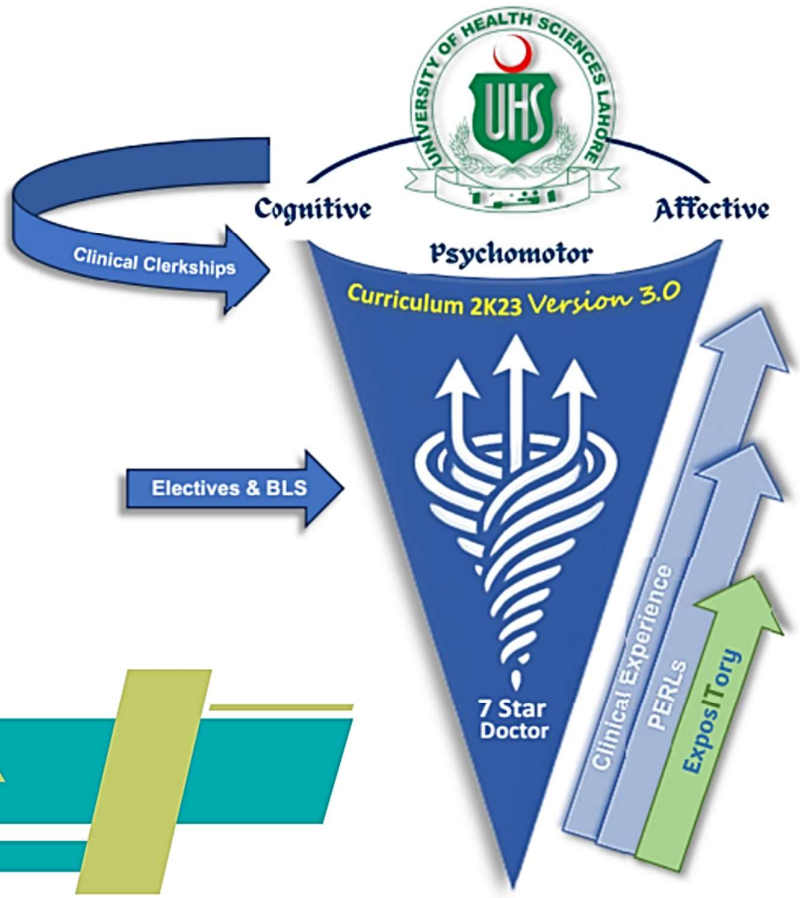
Modular Integrated Curriculum 2K23

version 3.0

BLOCK-01



Block-1

Study Guide 2025

1st Year MBBS

ISLAM MEDICAL COLLEGE

Sialkot–Pakistan

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Block-1

Foundation 1
Hematopoietic & Lymphatic 1

STUDY GUIDE

BLOCK LEAD DETAILS

I am Dr. Tabinda Fatima working as Sen. Lecturer in the Department of Biochemistry at Islam Medical College, Sialkot. I have completed my MPhil in Biochemistry and currently a PhD scholar. I'm teaching medical Biochemistry for the last ten years in Islam Medical & Dental College, actively participating in academics as well as teaching and training of the medical students.

And now acting as a Foundation Block-I Lead of 1st year MBBS 2025

You can come to meet me in Biochemistry Department, Academic Block 1 from08:00 –15:00 hours on weekdays. You can also contact me freely on my email tabindafatima831@gmail.com.

MODULE-01
FOUNDATION-1

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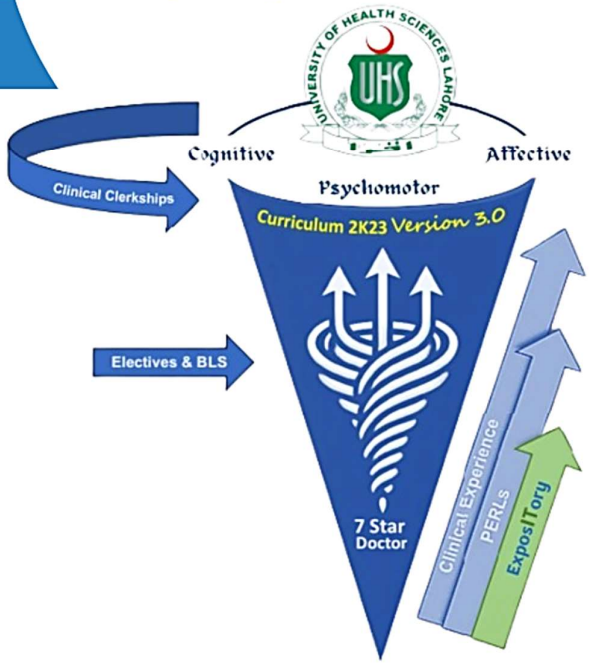


MODULE RATIONALE

Tomorrow's doctor is required to acquire competencies, which could align his knowledge base and skill set for his professional practices. The foundation of knowledge needs to commence from 'The Cell'. The cell is a structural and functional unit of life and has a role in normal homeostasis ensuring appropriate cellular functions. Hence, this module has been designed to introduce a blend of molecular, genetic, anatomical, physiological, and psychosocial information essential for developing a perspective on the function of the human body in health and disease. Besides, an initial orientation to pharmacology and pathology subject has been provided so that students are able to use this information in the coming modules.

MODULE OUTCOMES

- Describe the microscopic features of nerve cells, muscle cells, general features of epithelia of the body.
- Appraise the functional characteristics of various components of cell membrane and organelles of cell.
- Differentiate between the dynamics of various transport mechanisms along the cell membrane.
- Compare the functional differences between RBCs, WBCs and blood groups.
- Explain the significance of homeostatic mechanisms in keeping body's internal environment nearly constant.
- Appraise the formation and functions of autonomic nervous system.
- Correlate the structural design of each organ to its function.
- Acquire information about the different fascial planes in the different regions of the body & their surgical importance.
- Use descriptive anatomical terms of position to describe the different body structures in relation to each other.
- Describe the movements of body using proper anatomical terms of movement.
- Describe and demonstrate the various bony landmarks.
- Describe the types of joints and correlate them to the mechanisms of movement.
- Classify the bone, joints and muscles based on the structure, function, phylogenetic origin.
- Describe the structures associated with muscles and explain their functional correlations.
- Classify and describe the cardiovascular system and correlate it functionally.
- Amplify the anatomical basis for radiological, cross-sectional, anatomy.
- Correlate clinicopathologically the apoptosis in health & diseases.

THEMES
• Cell structure • Cell transport and signaling • Cell chemistry • Homeostasis and blood • Autonomic nervous system • Body movement • Muscles • Growth and development

IMPLEMENTATION TORs
• The time calculation for completion of modules and blocks is based on 35 hours per week. Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1200. • The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council. • The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these. • However, the level of cognition can be kept at a higher level by the institution. • The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment.


SYLLABUS

THEORY			
DAY-01			
CODE	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 01+02+04	
		DISCIPLINE	TOPIC
F-Or-001	Analyze the societal expectations, impact and role of physicians. Meet with doctors in various leadership roles to gain insights into the multifaceted responsibilities in the medical field. Define and explain the concept of a "Seven-Star Doctor."	Foundation orientation	Understanding the Medical Profession and the Physician's Role
F-Or-002	Comprehend the values and mission of the institution. Familiarize themselves with the college campus, its facilities (educational psychologist, career counseling, and research department etc.), faculty, and administrative framework. Comprehend the medical facilities available to the student.	Foundation orientation	Exploring the Academic Environment

F-Or-003	Examine and differentiate various teaching methodologies, assessing their applicability and effectiveness. Develop and maintain professional portfolios and logbooks to reflect on their educational progression. Understand the assessment strategies of the program, considering their types and influence on learning. Practice the PBL (Problem Based Learning) mock to understand its process, including problem identification, teamwork, research, and presentation skills.	Foundation orientation	Acquainting with the MBBS Program
DAY-02			
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 02+05**	
		DISCIPLINE	**TOPIC**
F-Or-004	Describe and understand the structure of Pakistan's Healthcare System (primary, secondary, and tertiary), recognizing the roles of different sectors and key health policies. Identify and comprehend cultural and ethical aspects unique to the Pakistani Healthcare context. Describe the principles of family practice within the Healthcare System.	Foundation orientation	Delving into the Healthcare System and Delivery

F-Or-005	Use the IT and library facilities such as eBooks', Year planners, access to scientific journals etc. Effectively use the university's learning management system and other online educational tools. Demonstrate proficiency in essential academic software tools such as Microsoft office such as (word, spreadsheets, and presentation software. Recognize and adhere to ethical practices in the use of digital resources, focusing on digital literacy and academic integrity.	Foundation orientation	Integrating Information Technology in Learning
DAY-03			
CODE	**SPECIFIC LEARNING OUTCOMES**	**TOTAL HOURS = 05+04**	
		DISCIPLINE	**TOPIC**
F-Or-006	Articulate the structure and requirements of their MBBS program, including core and elective subjects. Understand the significance of interdisciplinary studies and the interconnection of various courses. Identify opportunities for experiential learning, research, and career advancement within the curriculum.	Foundation orientation	Understanding the Curriculum Structure
F-Or-007	Apply various metacognition strategies for learning. Apply digital tools effectively to organize and synthesize information for their academic projects. Create a personal action plan integrating stress management techniques and personal development strategies to enhance their academic and personal life.	Foundation orientation	Self-Directed Learning

NORMAL STRUCTURE			
THEORY			
CODE	**GROSS ANATOMY**	**TOTAL HOURS = 15**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
F-A-001	Briefly describe the applied branches of anatomy Describe the "Anatomical Position" Describe the anatomical planes of body. Describe the terms of relationship, commonly used in Anatomy. Describe the anatomical terms used specifically for Limbs. Describe the terms related to movements.	General Anatomy	Introduction to General Anatomy
F-A-002	Describe, identify, and exemplify the general morphological features of bones. Describe the developmental classification of bones. Describe the regional classification of bones. Describe the morphological classification of bones. Describe and exemplify Sesamoid, Pneumatic, Wormian and Heterotopic bones. Describe the general features of adult typical long bone. Describe the types of epiphyses Discuss the general concept of ossification (primary and secondary centers and rule of ossification) Describe the relationship of growing end of bones with the direction of nutrient foramen Describe the blood supply of various types of bones Describe the salient features of common types of fractures and basic concept of healing of fracture.	General Anatomy	Bones (Osteology)
F-A-003	Describe the general features of cartilage and its importance in gross anatomy. Describe the subtypes and gross features of Hyaline, elastic and fibro Cartilage. Differentiate the three types of cartilages	General Anatomy	Cartilage (Chondrology)

F-A-004	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 Joints. Describe the blood supply, innervation of Synovial Joints, cartilaginous joints, and fibrous joints. List the factors stabilizing a synovial joint. Define common joint injuries and diseases	General Anatomy	Joints (Arthrology)
F-A-005	Describe the structure and function of Skin on the basis of its two layers; Epidermis and Dermis 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 Describe the structure and function of Superficial Fascia Describe the structure, function, and modifications of Deep Fascia Describe important clinical correlates of skin (skin infections, sebaceous cyst, skin burns and skin grafting)	General Anatomy	Integumentary System
F-A-006	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	General Anatomy	Muscle Tissue (Myology)
	Classify and describe the skeletal muscles based on architecture. Classify skeletal muscle based on action. Describe the parts of a skeletal muscle. Describe and differentiate the basic organization of innervation to skeletal, smooth, and cardiac muscle. Describe the structure of Synovial Bursae Comprehend the meaning of Hypertrophy, Hemiplegia, quadriplegia, paraplegia, hemiparesis	General Anatomy	

F-A-007	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 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.	General Anatomy	Vascular System (Angiology)
F-A-008	Define neuron. Describe the anatomical structure of a neuron. Classify neurons based on morphology with examples.	General Anatomy	Nervous Tissue (Neurology)
	Classify neurons based on function. Describe the components of the central nervous system. Describe the components of the peripheral nervous system. 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. Enlist the cranial nerves I to XII Describe the types of nerve fibers carried by and distribution of the cranial nerves. Describe the formation, types of modalities carried by, and distribution of the spinal nerves. Explain Dermatome (s) Explain Myotome (s) Describe the formation of Plexuses. Differentiate between Somatic and Visceral nervous system. Define Receptors Describe the functions of receptors.	General Anatomy	

	Classify sensory receptors based on modality (with location) Define Effectors Describe the functions of effectors. Describe ANS (Autonomic Nervous System) and differentiate between sympathetic and parasympathetic nervous system		
F-A-009	Identify displacement of fracture segments of the bone Identify dislocation of joints	Integrate with Radiology	Imaging in Anatomy
CODE	**EMBRYOLOGY & POST-NATAL DEVELOPMENT**	**TOTAL HOURS = 25**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
F-A-010	Define Chromosome Theory of inheritance Enlist different stages of Mitosis and Meiosis Compare and contrast Mitosis and Meiosis Enlist the numerical chromosomal anomalies Describe the anatomical basis for numerical chromosomal abnormalities. Describe the clinical presentation of numerical chromosomal abnormalities & justify them embryologically Describe the clinical presentation of structural chromosomal abnormalities and justify them embryologically. Describe the embryological basis for mosaicism Describe the embryological basis for teratoma Describe Concept of Gene Mutation. Enlist common diagnostic techniques for identifying genetic abnormalities.	Embryology	Cell division and Chromosomal abnormalities
F-A-011	Describe the Process of spermatogenesis and spermiogenesis Describe the embryological basis for Abnormal gametes	Embryology	Gametogenesis Spermatogenesis
F-A-012	Describe the Prenatal and postnatal maturation of oocyte	Integrate with Gynecology	Gametogenesis Oogenesis

F-A-013	Describe the significance of arrested development of oocyte	Embryology	Gametogenesis Oogenesis
F-A-014	Compare and contrast oogenesis and spermatogenesis		Gametogenesis
F-A-015	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 Define Mittelschmerz pain Define menstrual cycle Describe the phases of menstrual cycle	Integrate with Gynecology	Female Reproductive Cycle
F-A-016	Describe the transportation of Oocyte	Embryology	Transportation of gametes
F-A-017	Describe Capacitation & Acrosomal Reaction Define fertilization Describe the phases of fertilization Draw and label a diagram illustrating the phases of fertilization Enumerate and describe the results of fertilization		Fertilization
F-A-018	Define contraception Explain the mechanisms of following contraceptive techniques: 1. Barrier methods 2. Hormonal methods 3. Intrauterine device (IUD) 4. Emergency contraceptive pills (ECPs) 5. Male and female sterilization	Integrate with physiology	Contraception
F-A-019	Describe the anatomical and physiological basis of male and female infertility Define assisted reproductive techniques Describe the mechanisms of In vitro fertilization (IVF) & embryo transfer Explain the correlation of multiple births with assisted reproductive techniques	Integrate with Gynecology	Infertility & assisted reproductive techniques

F-A-020	Describe the process of cleavage of embryo and blastocyst formation Describe the origin and uses of embryonic stem cells and the techniques of obtaining these cells from the embryo (reproductive cloning & therapeutic cloning) Explain the embryological basis of spontaneous abortion.	Embryology	Cleavage, blastocyst formation
	Compare and contrast the villi.	Integrate with Gynaecology	
	Describe the process of Compaction. Describe the Formation of morula (division into inner and outer cell mass)	Embryology	
F-A-021	Describe the Uterus at the time of implantation (decidua reaction) Illustrate the concept of Implantation. Describe the Abnormal implantation/ extra uterine implantations. Define the Molar pregnancy. Describe the formation of amniotic cavity, embryonic disc, and umbilical vesicle Describe the formation of chorionic sac.	Embryology	Implantation Week 2 of Development
F-A-022	Describe the Establishment of uteroplacental circulation.		Utero-Placental circulation
F-A-023	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.	Embryology Integrate with Gynaecology	Gastrulation
F-A-024	Describe the Invagination and movement of prenotochordal cells Describe the Notochordal plate formation Describe the Neuroenteric canal formation	Embryology	Formation of notochord

	Describe the fate of the notochord Describe the Establishment of body axis Draw and label the fate map establishment Describe the Fate map establishment Describe the molecular basis for notochord formation		
	Describe the role of notochord as an inducer Describe the embryological basis for situs inversus, Sirenomelia, holoprosencephaly Describe the development of trophoblast and chorionic villi during 3rd week of development		
F-A-025	Describe the Formation of neural tube from neural plate. Justify embryologically 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 cells Enlist the ectodermal derivatives Describe the molecular and genetic factors for the process of neurulation Describe important Neural tube defects	Embryology	Derivatives of ectoderm
F-A-026	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	Integrate with pediatrics	Mesodermal derivatives
F-A-027	Describe the processes of vasculogenesis & angiogenesis Explain the features of primordial cardiovascular system Describe the anatomical justification for Capillary hemangiomas	Integrate with Cardiology	Early development of CVS
F-A-028	Describe the Cephalo-caudal folding	Integrate with Gynaecology	Folding of embryo

	Describe the Lateral folding		
F-A-029	Enlist the derivatives of germ layers Enlist and Describe the Derivatives of intermediate and lateral plate mesoderm Enlist & Describe the Derivatives of endoderm	Embryology	Germ layer derivatives
	Enlist & describe the derivatives of ectoderm	Integrate with Gynaecology/ Pediatrics	
F-A-030	Describe the Regulation of embryonic development by HomeoBox genes	Embryology	Control of the embryonic development
F-A-031	Enlist the characteristic features of the embryo during 2nd month Describe the criteria for estimating the developmental staging in human embryos Explain the estimation of gestational & embryonic age		Folding of Embryo Embryonic period
F-A-032	Explain the measurement and characteristics of fetus/Key events during Embryonic Period. Describe the Overview of External appearance of fetus during fetal period. Enlist developmental horizons during fetal life event. Describe Viability of fetuses and low birth weight babies Explain the factors influencing fetal growth Describe the clinical problems encountered by babies born with IUGR (Intra Uterine Growth Restriction)		Fetal Period
F-A-033	Tabulate the criteria for estimating fertilization age during the fetal period Describe the procedures for assessing fetal status Describe the clinical picture of IUGR & factors resulting in IUGR (Intra Uterine Growth Restriction) Define Pre-eclampsia	Integrate with Gynaecology	Fetal Status
F-A-034	List the fetal membranes	Integrate with	Placenta

	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	Gynaecology	
	Enlist & correlate the Functions of placenta with its structure Describe the Microscopic anatomy of Placental membrane Describe the Placental circulation (fetal & maternal) Embryologically justify the hemolytic disease of the neonate (Erythroblastosis fetalis) Describe the functions of placenta		
F-A-035	Describe the Formation & fate of Umbilical cord Describe the Cord abnormalities Justify embryologically the clinical features observed in Absence of umbilical artery Describe the formation and circulation 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 consequences of oligohydramnios and polyhydramnios Define Amniotic Bands Explain the formation and fate of umbilical vesicle (yolk sac) Define Physiological Umbilical Hernia	Integrate with Gynecology	Fetal membranes
F-A-036	Describe the development of Dizygotic twins Describe the development of Monozygotic twins Describe the fetal membranes in twin pregnancy Describe Fetus Papyraceous Explain the zygosity of the twins	Embryology	Multiple pregnancies

	Describe the characteristics of various types of conjoined monozygotic twins		
F-A-037	Define preterm Birth Describe parturition & three stages of Labor. Describe the Various methods of prenatal diagnosis Describe the Fetal therapy Describe Maternal serum Screening Corelate levels of Alpha feto protein levels and fetal anomalies Describe stem cell transplantation and gene therapy		Prenatal diagnosis and fetal therapy
F-A-038	Define morphogens, protein kinases, notch delta pathway, transcription factors, epigenetics		Molecular regulations and signaling pathways
F-A-039	Define teratology and causes of birth defects Define genomic imprinting Define human disorders associated with genetic mutations 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: 1. Drugs 2. Environmental agents 3. Chemicals & heavy metals 4. Infectious agents 5. Radiation 6. Hormones 7. Maternal diseases Describe the basis for male-mediated teratogens Describe prevention of birth defects		Teratogenicity
CODE	**MICROSCOPIC ANATOMY (HISTOLOGY AND PATHOLOGY)**	**TOTAL HOURS = 08**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**

F-A-040	Describe different types of microscopies Describe Staining methods and their significance	Basic technique in Histology	Introduction to microscopy & Basic staining technique
F-A-041	Describe the electron microscopic structure and fluid mosaic model of plasma membrane Draw the fluid mosaic model of plasma membrane Describe the structure of glycocalyx coat and lipid raft and correlate it with function Describe different types of membrane proteins and their functions	Basic Histology	Cell membrane
	Explain different modes of transport across the cell membrane		
F-A-042	List the membranous and non-membranous cellular organelles Describe the structure of the following cellular organelles and correlate with their function: 1. Ribosomes 2. Endoplasmic reticulum (rough & smooth) 3. Golgi apparatus 4. Lysosomes 5. Proteasomes 6. Mitochondria 7. Peroxisomes	Integrate with Pathology	Cell organelles
	Describe the structural components of cytoskeleton, and correlate them with their functions Explain the histological basis of immotile cilia syndrome		
	Describe the histological features of cytoplasmic inclusions	Integrate with Pathology	
	Describe the structure of nuclear envelope and nuclear pores	Integrate with Physiology	
F-A-043	Describe the structure of chromatin Describe the structure of chromosome Describe the structure of nucleolus	Histology	Cell nucleus

	Describe the structure and types of DNA (Deoxy Ribonucleic Acid) and RNA (Ribonucleic Acid) Describe the histological basis for apoptosis and necrosis		
	Describe structure of different types of cell junctions	Integrate with Pathology	
	Describe the cell cycle & cell division Define important clinicopathological terms: Atresia, Hypertrophy, Atrophy, Hyperplasia, Metaplasia, Anaplasia, Neoplasia, Inflammation, Metastasis		
F-A-044	Describe the histological structure and function of basement membrane (light and electron) 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	Histology	Epithelium
	Describe the Biochemical composition of the basolateral modifications		
	Describe the electron microscopic structure & functions of the following apical cell surface specializations: 1. Microvilli 2. Stereocilia 3. Cilia	Integrate with Biochemistry	
	Classify and exemplify the epithelia with their histological structure, locations and functions	Integrate with Pathology	
	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	Histology	

F-A-045	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 Describe connective tissue fibers, cells. Define Fibrosis	Histology	Connective tissue
	Describe the structure, distribution, and functions of the cells of macrophage mononuclear phagocytic system	Integrate with Biochemistry/ Physiology	
	Describe the role of macrophages in innate immunity & formation of foreign body Giant cell Describe the structure & functions of Mast cells. Role of Mast cells in immediate hypersensitivity reactions. Describe structure of Plasma cells and their role in antibody formation.		
	Describe the types of adipose tissue (white & brown), their histogenesis, locations and function	Histology	
	Describe lipid storage and mobilization in and from adipocytes and compare the brown and white adipose tissue	Integrate with Pathology	

PRACTICAL

CODE	ANATOMY	TOTAL HOURS = 03	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-A-046	Demonstrate the anatomical terms of position and movement, in particular on limbs.	Anatomy	Osteology

	Demonstrate various anatomical movements of body Identify various elevations and anatomical landmarks on bones. Identify and interpret normal radiographs of various body regions Identify and interpret joint dislocations and displaced fracture bone segments radiographically.		Imaging and cross-sectional Anatomy Arthrology
CODE	**EMBRYOLOGY**	**TOTAL HOURS = 05**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-A-047	Calculate fertilization age, gestational age, embryonic/fetal age and expected date of delivery.	Anatomy	Embryology
	On models, charts, aborted embryos and fetal specimens, identify the: Events of embryonic period, i.e., cleavage, morula and blastula formation, yolk sac, amniotic cavity, connecting stalk,		
	Gastrulation (notochord & primitive streak, three germ layers and their parts/derivatives), angiogenesis, neurulation, somites and embryonic age determination based on it, chorionic villi (primary, secondary & tertiary), developmental defects (sacrococcygeal teratoma, neural tube defects) Placenta and it's positional & Implatational variations, umbilical cord and its contents Fetal features during fetal period. Determine age of fetus based on these features.		
	Describe the USG (Ultrasonography) report for the: Fetal features, fetal age estimation, placental attachment with variations, fetal membranes and multiple pregnancies		
	Gastrulation (notochord & primitive streak, three germ layers and their parts/derivatives), angiogenesis, neurulation, somites and embryonic age determination		

	based on it, chorionic villi (primary, secondary & tertiary), developmental defects (sacrococcygeal teratoma, neural tube defects) fetal features during fetal period. Determine age of fetus based on these features.		
	Describe the USG (Ultrasonography) report for the: Fetal features, fetal age estimation, placental attachment with variations, fetal membranes and multiple pregnancies		
CODE	**HISTOLOGY**	**TOTAL HOURS = 14**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-A-048	Describe different types of staining techniques and their significance with special emphasis on H&E (Hematoxylin and Eosin) staining	Microscopic Anatomy	Staining techniques
F-A-049	Enlist important features of different parts of light microscope		Microscope
F-A-050	Identify and draw & label different cell shapes under the microscope		Cell shape
F-A-051	Identify under light microscope and Draw & Label the following types of epithelia: 1. Simple squamous 2. Simple cuboidal 3. Simple columnar (ciliated & non-ciliated) 4. Pseudostratified columnar (ciliated & non-ciliated) 5. Stratified squamous (keratinized & non keratinized) 6. Stratified cuboidal 7. Stratified columnar 8. Transitional		Epithelium
F-A-052	Identify under light microscope and Draw & Label serous & mucous secreting glands under light microscope	Microscopic Anatomy	Epithelium

F-A-053	Identify under light microscope and Draw & Label the various types of connective tissue		Connective tissue

NORMAL FUNCTION			
THEORY			
CODE	**MEDICAL PHYSIOLOGY**	**TOTAL HOURS = 40**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-P-001	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 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
	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 Define and enlist types of endocytosis Explain the mechanism of pinocytosis Classify different transport mechanisms Compare the composition of Na (Sodium), K (Potassium) and Cl (Chloride) in extracellular and intracellular fluid		

	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.		
F-P-002	Enumerate the functions of blood Explain the composition of blood Enumerate the plasma proteins Discuss functions of plasma proteins Describe the pathophysiology of edema	Medical Physiology	Blood
F-P-003	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		Red Blood Cells
F-P-004	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	Medical Physiology	Hemoglobin

F-P-005	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 leukopenia Explain the effects of leukemia on body Explain the process of defense against invading agent by macrophages Discuss different lines of defense during inflammation	Medical Physiology	White Blood Cells
	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 Explain the characteristics and functions of basophils Explain the characteristics and functions of eosinophils and enlist conditions in which these cells are raised.		
F-P-006	Enumerate different blood group types. Explain the basis of ABO and Rh blood system Explain the Landsteiner law	Medical Physiology	Blood Types
F-P-007	Discuss Components of ANS (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	Medical Physiology Also integrate with Anatomy part of ANS	Autonomic nervous system

PRACTICAL

CODE	PHYSIOLOGY	TOTAL HOURS = 12	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
F-P-008	Explain laboratory/clinical procedure to the subject. Obtain verbal consent from subject before starting a procedure. Reassure the subject after the procedure.	Medical Physiology	Consent
F-P-009	Determine Erythrocyte Sedimentation Rate and packed cell volume		RBCs (Red Blood Cells)
F-P-010	Determination of blood group		Blood Group
F-P-011	Interpret Total Leucocyte Count, Differential Leucocyte Count (normal & abnormal) in a CBC (Complete Blood Count) report generated by Automated Cell Counter Identify various types of WBCs in a prepared DLC (Differential Leukocyte Count)		WBCs (White Blood Cells)

THEORY

CODE	MEDICAL BIOCHEMISTRY	TOTAL HOURS = 36	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
F-B-001	Explain the concept of organization of cells to tissue, tissues to organ, organs to system. Differentiate between the eukaryotic and prokaryotic cells.	Biochemistry Cell Biology	Structure of cell
F-B-002	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 1. Lipids 2. Carbohydrates 3. Proteins Explain why the cell membrane is called fluid mosaic model		Cell Membrane
F-B-003	Discuss the various ways of cell-to-cell communication and to the environment.		Signal transduction

	Describe cell to cell communications. Cell signaling pathways (only G protein signaling I e. Gs, Gi and Gq) Describe cell to cell adhesion.		
F-B-004	Explain the biochemical markers and importance of subcellular organelles and their inherited disorders especially: 1. I cell disease 2. Refsum disease 3. Parkinsonism 4. Progeria		Subcellular organelles
F-B-005	Describe the chemistry of purines and pyrimidines and their linkage in nucleic acid synthesis.		Chemistry of purine and pyrimidines
F-B-006	Discuss the organization of DNA with special reference to Watson and crick model, composition, structure, role of Pairing Describe the structural forms of DNA		DNA (Deoxy Ribonucleic Acid)
F-B-007	Discuss the structure of different types of RNAs with special reference to composition, linkage, functions of RNA, micro-RNA Illustrate the structure and functions of various types of RNAs Describe the functions of various small RNAs present in cell	Biochemistry Cell Biology	RNA (Ribonucleic Acid)
F-B-008	Explain the structure and nomenclature of nucleotides, biomedical importance of natural and synthetic analogues		Nucleotides
F-B-009	Explain the higher organization of DNA. Difference between DNA, chromatid and chromosome		Chromosome
F-B-010	Describe enzymes with reference to: 1. Active sites 2. Specificity 3. Catalytic efficiency 4. Cofactor 5. Coenzyme 6. Holoenzyme	Biochemistry Cell Biology	Enzymes

	7. Apoenzyme 8. Prosthetic group 9. Zymogens 10. Location		
	Classify enzymes according to the reaction they catalyze and their nomenclature		
	Explain the mechanism of enzyme action from reactants to products (catalysis).		
	Discuss the effect of various factors on enzymatic activity: 1. Substrate concentration 2. Temperature 3. PH 4. Enzyme concentration		
	Explain the regulation of enzymatic activity (Michaelis Menten and Line weaver Burk's equation). Discuss inhibitors of enzymatic activity (with special reference to Km/V max) 1. Competitive 2. Non competitive 3. uncompetitive		
	Explain the application of enzyme in clinical diagnosis and therapeutic use	Biochemistry Cell Biology	
F-B-011	Classify amino acids based on polarity, nutritional importance and glucogenic/Ketogenic properties		Amino acids
	Explain the structure, physical, chemical properties of amino acids and their biomedical importance		

F-B-12	Classify proteins on the basis of functions, solubility and physicochemical properties and their biomedical importance.		Protein
	Explain the structural levels of proteins 1. Differentiate between alpha helix and beta pleated protein structures 2. Identify bonding at different levels of proteins		
	Describe the role of chaperons in protein folding 1. Interpret disorders related to protein misfolding on basis of given data 2. Describe the biochemical basis of Alzheimer's disease/ prion disease	Biochemistry Cell Biology	
F-B-13	Classify and explain the bio-chemical role of each class of plasma proteins		Plasma proteins
F-B-14	Explain the structure and biochemical role of immunoglobulins 1. Describe the production, structure and functions of B cells, plasma cells, and antibodies (IgA, IgD, IgE, IgG, and IgM). 2. Discuss the functions of the cytokines (Interleukins (ILs), Tumor Necrosis Factor (TNFs), IFs, Platelet derived growth factor (PDGF), and Platelet activating factor (PAF)). 3. Interpret multiple myeloma on basis of given data		Immunoglobulins

PRACTICAL			
CODE	**BIOCHEMISTRY**	**TOTAL HOURS = 09**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-B-015	Demonstrate the step taken to prevent or rectify the Laboratory Hazards	Biochemistry	Lab hazards
F-B-016	Identify the structure of cells under microscope		cell
F-B-017	Identify the methods of isolation of cell organelles'		Cell organelles
F-B-018	Identify the different parts of equipment i.e., centrifuge, Microlab, Electrophoresis, Hot Oven, water bath		Equipment
F-B-019	Detection of amino acids by paper chromatography Prepare different types of solution Molar, Molal, Normal and %		Chromatography Solutions
THEORY			
CODE	**PATHOLOGY**	**TOTAL HOURS = 6+6=12**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-Pa-001	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	General Pathology	Cell Injury

F-Pa-002	Describe the basic structure of bacteria and virus. Enlist medically important microbes causing infectious diseases. Differentiate cell walls of gram positive and gram-negative bacteria. Compare the structure of bacterial cell and virus Discuss the growth curve of bacteria and virus. Enlist steps of viral replication Enlist stages of infectious diseases Enlist stages of bacterial pathogenesis Discuss the determinants of bacterial pathogenesis	General Microbiology	Introduction to Microorganisms
F-Pa-003	Define sterilization and disinfection. Describe the principles of sterilization and disinfection. Describe clinical uses of common disinfectants and their mode of sterilization Discuss physical and chemical agents of sterilization		Sterilization & Disinfection

PHARMACOLOGY AND THERAPEUTICS

THEORY

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 04	
		DISCIPLINE	TOPIC
F-Ph-001	Definitions of Pharmacology, drug, pro-drug, placebo, active principles, sources of drugs; Brief outline of Absorption, Distribution, Metabolism and Excretion	General Pharmacology	Absorption, Distribution, Metabolism and Excretion of drugs
F-Ph-002	Definitions of receptor, agonist, partial agonist, inverse agonist, antagonist and types of receptors and second messengers; Diagrammatic concept of signaling mechanisms	General Pharmacology	Basic terminologies of Pharmacology
F-Ph-003	Pharmacological aspects of Autonomic Receptors (types of autonomic receptors, important sites and actions)		Autonomic System

PRACTICAL			
CODE	**PATHOLOGY**	**TOTAL HOURS = 02**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
F-Pa-004	Identify the necrosis and calcification along with their types Identify the cellular adaptations and pigmentations with their salient pathological features.	Pathology	Cell Injury
COMMUNITY MEDICINE & PUBLIC HEALTH			
THEORY			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 08**	
		DISCIPLINE	**TOPIC**
F-CM-001	Describe the changing concepts and new philosophy of health Explain responsibility for health	Community Medicine and Public Health	Concept of Health
F-CM-002	Explain dimensions and determinants of health and their role in achieving positive health Discuss concept of health and wellbeing Describe the Physical quality of Life Index & Human Development Index		Positive Health Dimensions, Health Determinants
F-CM-003	Describe the importance of health indicators Classify health indicators Calculate Morbidity and Mortality Describe Disability indicators Compare indicators among countries		Health indicators
F-CM-004	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	Community Medicine and Public Health	Disease causation

F-CM-005	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 Describe five levels of interventions	Community Medicine and Public Health	Disease Prevention

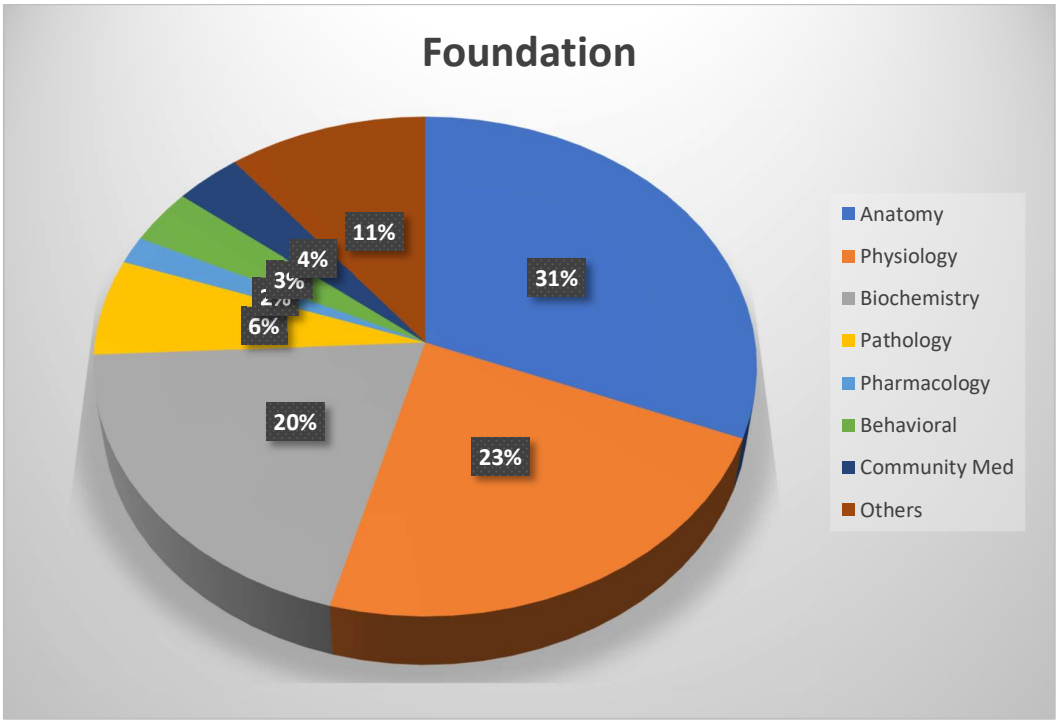
IMPACT (EPIDEMIOLOGY, SOCIOLOGY/SOCIETY, COMMUNITY MEDICINE & PUBLIC HEALTH)			
THEORY			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 08	
		DISCIPLINE	TOPIC
F-BhS-001	Identify the Biological Basis of human behavior and discuss social behavior Describe processes such as neurobiology of memory, emotions, sleep, learning, motivation, sex, arousal, reward and punishment	Behavioral Sciences	Biological Basis of Behavior
F-BhS-002	Identify the burden of mental illness on the person, family and society Describe Intellectual disability, Mental Disorders and Personality Disorders		Psychological Disorders
F-BhS-003	Identify the role of psychosocial factors in various illnesses Describe psychosocial aspects of various system diseases such as Cardio-vascular system (CVS), Central Nervous System (CNS), Gastro Intestinal Tract (GIT), Respiration, renal, endocrine and Cancer		Psychology and Disease
F-BhS-004	Identify the behavioral factors associated with pharmacological treatment of diseases Discuss Health belief model, treatment compliance and its psychosocial factors, social factors in drugs prescription and drug resistance		Behavioral Factors & Pharmacological Treatment
F-BhS-005	Identify the rehabilitation work for patients on dialysis and any kind of physical disability	Behavioral Sciences	Palliative Care

	Discuss the care requirements in chronic debilitating conditions like Diabetes, Multi-infarcts Dementia, chronic renal disease, limb amputation		
F-BhS-006	Identify the various physiological effects of stress Explain ANS response to stress, Describe Behavioural manifestations of stress, Stress related multiple sclerosis and autoimmune diseases		Stress

AGING

THEORY

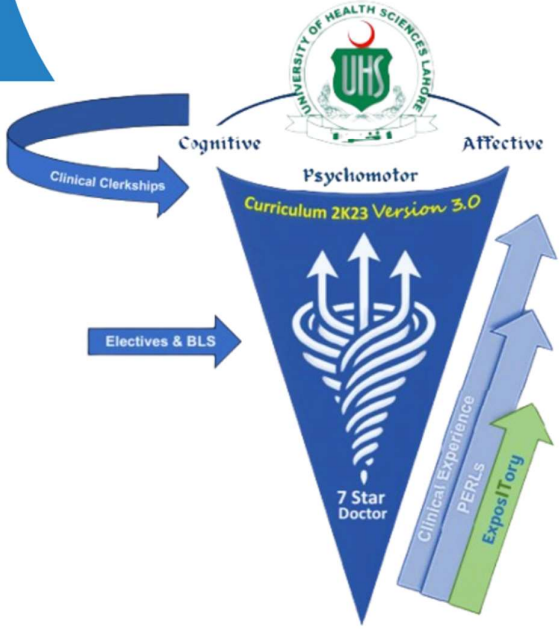
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 01	
		DISCIPLINE	TOPIC
F-Ag-001	Discuss telomeres and telomerase and their clinical significance in aging.	Geriatrics Integrate with Biochemistry	Process of Aging



Module Weeks	Recommended Minimum Hours
08	225

MODULE-02
HEMATOPOIETIC & lYMPHATIC-1

Modular Integrated Curriculum 2K23
version 3.0



MODULE RATIONALE

"Blood is Life". Unlike any other organ, components of blood and immunity reflect/reveal disease processes in other organs as well. Therefore, studying blood is like opening a book to all aspects of medicine. Hence, this module has been designed to enable students to have a basic understanding about the normal structure, function and biochemistry of blood, immune and Lymphatic systems. Not only that, but students would also learn, when normal physiology and composition of blood and immune system is disturbed, what disorders result in our community. Emphasis has been given to incorporate deranged laboratory findings into the clinical problem solving.

MODULE OUTCOMES

- Explain the function of all the organs / structures involved in this system and the mechanisms controlling them. (Spleen, lymph nodes, thymus, bone marrow, RBC's, WBCs and platelets
- Explain the etiology and pathogenesis of common blood & lymphatic diseases, particularly those of importance in Pakistan.
- Explain the rationale for the use of common therapeutic agents for the diseases related to Blood and immunity.
- Describe the role of immunity in the body
- Discuss the working & uses of laboratory instruments in diagnostic lab visit
- Relate red cell indices with health and disease
- Recognize ABO/RH blood grouping system
- Describe the role of Reticuloendothelial system in the body
- Describe the events of hemostasis
- Extrapolate the biochemical aspects of plasma proteins
- Discuss the pharmacological treatment of iron deficiency anemia
- Discuss Blood composition and function
- Discuss the role of liver in hemolytic anemia
- Practice history taking of a patient presented with blood disorders

THEMES

- Red blood cell
- Platelets
- White blood cell

CLINICAL RELEVANCE
• Aplastic anemia • Hemolytic anemia • Blood loss anemia • Nutritional anemia • Polycythemia • Hemoglobinopathies • Jaundice • Acute and chronic lymphocytic and myelogenous Leukemia • Allergy (Type I, Type II & Type III)

IMPLEMENTATION TORs
• The time calculation for completion of modules and blocks is based on 35 hours per week. Total hours of teaching, learning and formative/summative internal assessment to be completed in a year are 1200. • The hours mentioned within each module are the mandatory minimum required. The rest of the hours are left to the discretion of the institution that can be used in teaching, learning and assessment as per decision of the institutional academic council. • The content and the intended learning outcomes written are mandatory, to be taught, at the level required, as the end year assessment will be based on these. • However, the level of cognition can be kept at a higher level by the institution. • The Table of Specifications provided will be used for the three papers of the first professional examination. The same table of specifications should be used for the respective three block exams for internal assessment.


SYLLABUS

NORMAL STRUCTURE			
THEORY			
CODE	**GROSS ANATOMY**	**TOTAL HOURS = 02**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
HL-A-001	Identify and describe the components of the Hematopoietic & Lymphoid Tissue and their function	Human Anatomy	Hematopoietic & Lymphoid Tissue
	Location, coverings, relations of Spleen		
	Origin, course branches and distribution of Splenic artery		
	Venous drainage of Spleen, Portal vein formation, tributaries, and area of drainage.		
	Location and relations of Thymus. Age related changes in Thymus		
CODE	**EMBRYOLOGY & POST-NATAL DEVELOPMENT**	**TOTAL HOURS = 01**	
	SPECIFIC LEARNING OUTCOMES	**DISCIPLINE**	**TOPIC**
HL-A-002	Intrauterine Development of spleen	Embryology	Developmental Anatomy of Spleen
PRACTICAL			
CODE	**HISTOLOGY**	**TOTAL HOURS = 02**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HL-A-003	Light microscopic structure of Spleen, thymus, Lymph nodes, tonsils and Mucosa Associated Lymphoid Tissue (MALT) including appendix.	Histology	Histological features of lymph node, spleen & thymus

NORMAL FUNCTION			
THEORY			
CODE	**MEDICAL PHYSIOLOGY**	**TOTAL HOURS = 20**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HL-P-001	Define, classify and explain anemia on the basis of morphology and cause	Medical Physiology	Anemia
	Discuss the effects of anemia on the body		
HL-P-002	Define polycythemia		Polycythemia
	Explain types of polycythemias		
	Discuss the effects of polycythemia on the body		
HL-P-003	Define hemostasis		Hemostasis
	Describe the mechanisms by which hemostasis is secured		
HL-P-004	Discuss the characteristics and functions of platelets		Platelets
	Explain the mechanism of formation of platelet plug		
HL-P-005	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, International Normalized Ratio (INR), and its clinical significance.		
HL-P-006	Enlist and explain the conditions that cause excessive bleeding		Coagulation disorders
	Define thrombocytopenia		

	Enlist the causes and consequences of Thrombocytopenia	Integrated with Medicine	
HL-P-007	Define immunity	Integrated with microbiology	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.		
HL-P-008	Elaborate Immune tolerance	Integrated with pathology	Tolerance
	Explain the process of clone selection during T cell processing		
	Discuss the failure of tolerance mechanism		
HL-P-009	Discuss immunization.	Integrate with microbiology	Immunization
	Define passive Immunity		Immunization
	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.		
HL-P-010	Discuss the pathophysiology, features and treatment of ABO and RH incompatibility. Enlist the changes that take place in the stored Blood.	Medical Physiology	Blood group Incompatibility
HL-P-011	Discuss the features and complications of mismatched blood transfusion reaction	Integrate with Pathology	Blood mismatch

	Describe the Hazards of blood transfusion. Elaborate the Transplantation of Tissues and Organs		Transfusion reactions
HL-P-012	Explain the process of tissue typing Explain the prevention of Graft Rejection by suppressing immune system	Integrate with pathology	Transplantation of tissues
THEORY			
CODE	**MEDICAL BIOCHEMISTRY**	**TOTAL HOURS = 19**	
	SPECIFIC LEARNING OBJECTIVES	**DISCIPLINE**	**TOPIC**
HL-B-001	Explain the steps of synthesis of hemoglobin and interpret Porphyrias on basis of sign symptoms and data. Discuss the biochemical role and types of hemoglobin 1. Differentiate Hemoglobin and myoglobin 2. Explain oxygen dissociation curve of hemoglobin and myoglobin and factors regulating them 3. Interpret Carbon monoxide (CO) toxicity on the basis of sign and symptoms 4. Explain the role of 2,3 Bisphosphoglycerate (2,3 BPG) in fetal circulation	Medical Biochemistry	Hemoglobin and its types/ RBCs
HL-B-002	Discuss haemoglobinopathies and their biochemical and genetic basis with special emphasis on sickle cell anemia, Thalassemia and methemoglobinemia a) Discuss the following types of anemia on the basis of signs and symptoms and laboratory data: 1. Hypochromic microcytic 2. Normochromic microcytic 3. Normochromic normocytic 4. Macrocytic (megaloblastic)	Medical Biochemistry Integrate with Pathology	Hemoglobino pathies/ RBCs/ Homeostasis
HL-B-003	Explain the iron metabolism with mechanism of absorption and factors affecting it. 1. Interpret Iron deficiency anemia on basis of given data and microscopic findings	Medical Biochemistry Integrate with medicine	Iron Metabolism/ RBCs

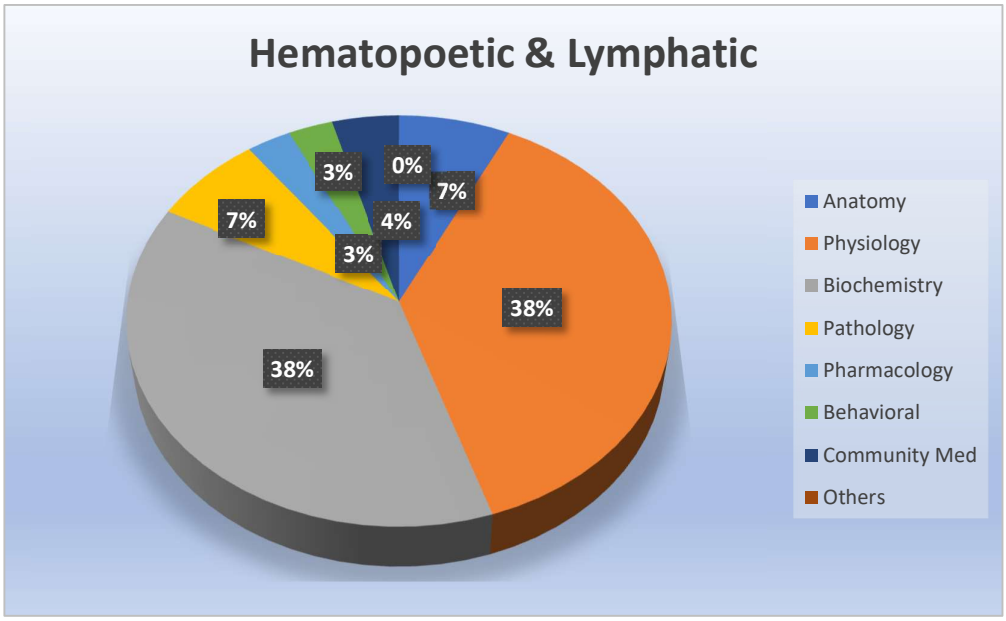
	2. Interpret folic acid and cobalamin in relation to anemias on given data and microscopic findings 3. Discuss biochemical role of pyridoxine and vitamin C & K in microcytic anemia		
HL-B-004	Discuss the degradation of heme in macrophages of reticuloendothelial system 1. Describe the formation of bile pigments, their types and transport 2. Discuss the fate of bilirubin	Medical Biochemistry	Heme Degradation/ RBCs
HL-B-005	Discuss hyperbilirubinemias and their biochemical basis 1. Differentiate types of jaundice on basis of sign/symptoms and data 2. Evaluate the genetic basis of jaundice on the basis of lab investigations		Hyperbilirubinemias / RBCs/ Blood Groups
HL-B-006	Explain and interpret pedigree of single gene defect i.e. sickle cell anemia (Autosomal recessive) and Beta Thalassemia (X linked recessive)		Genetics

PRACTICAL

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 6+6=12	
		DISCIPLINE	TOPIC
HL-P-013	Interpret the Red Blood Cell Count, Hemoglobin concentration, Hematocrit and RBC Indices by Automated Cell Counter	Medical Physiology	Bleeding/ Clotting time
	Interpret the Total Leucocyte Count Differential Leucocyte Count Platelet Count by Automated Cell Counter.		
HL-P-014	Determine Bleeding Time. Determine Clotting Time.		Jaundice & Anemias/ RBCs/ Homeostasis
HL-B-007	Interpret types of jaundice on the basis of data Perform estimation of LFTs (bilirubin, ALP, AST & ALT)	Medical Biochemistry	Jaundice & Anemias

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS			
THEORY			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 2+5=07**	
		DISCIPLINE	**TOPIC**
HL-Ph-001	Describe the oral and parenteral iron preparations including their pharmacokinetics, uses, adverse effects	Pharmacology & Therapeutics	Anemia
	Vitamin B12 preparations, Iron Antidotes		
HL-Pa-001	Should know the terms: Hematopoietic growth factors, their name, mechanism of actions, uses and adverse effects	Pathology	Blood Cells, Platelets and Blood Group
	Define and classify anemias according to underlying mechanism and Mean Corpuscular Volume/ Mean Corpuscular Hemoglobin (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		
	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		

DISEASE PREVENTION AND IMPACT			
THEORY			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 05**	
		DISCIPLINE	**TOPIC**
HL-CM-01	Describe the nutritional aspects of iron deficiency anemia and psychological aspects of diseases	Community Medicine and Public Health	Anemia
HL-CM-02	Enlist most common blood borne diseases in Pakistan Describe the routes of spread of blood borne diseases		communicable diseases
HL-CM-03	Genetic counseling of parents		Genetic diseases
HL-BhS-01	Psychological Counselling of patients and their families	Behavioral Sciences	Counselling, informational care
HL-BhS-02	Identify and deal with the various psychosocial aspects of Hematopoietic System disorders (such as Sickle Cell Disease, Hemophilia, and Conditions of the Blood) on Individual, Family and Society.		Personal, Psychosocial and vocational issues
AGING			
THEORY			
CODE	**SPECIFIC LEARNING OBJECTIVES**	**TOTAL HOURS = 01**	
		DISCIPLINE	**TOPIC**
HL-Ag-01	Discuss the role of platelets in Platelet-Rich Plasma (PRP) treatment in old age (for skin, hairs and joints)	Biochemistry /Dermatology	Platelet Rich Plasma Therapy
HL-Ag-02	Explain the role of glutathione in skin whitening		Glutathione



Module Weeks	Recommended Minimum Hours
03	69

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–1/8
First Year MBBS
Week-1

Day/Date	8:30 – 9:15	9:15-10:00	10:00 – 10:50	10:50 - 11:40	11:40-1:10	1:10 – 1:40	1:40 – 3:00
Monday 03/03/2025	**Oriantation Day 1**						
Tuesday 04/03/2025	**Oriantation Day 2**						
Wednesday 05/03/2025	**Practical** Anatomy C Microscope Physiology A Consent Taking Biochemistry B Lab Hazards		**LGIS** **Histology** Cell Membrane	**LGIS 2** **Physiology** Feed Back Mechanisms	**SGD** Physiology X Topic Homeostasis Team **Dr. Aniqa (Batch X)** Biochemistry Y Topic Cell Biology Team **(supervised by)**	Short Break	SGD General Anatomy Batch A Dr Batch B Dr. Batch C Dr. **Terms of Movement (2)** SGD 0 Batch D Dr. Batch E Dr. Batch F Dr (DISSECTION HALL)
Thursday 06/03/2025	**Practical** Anatomy B Microscope Physiology C Consent Taking Biochemistry A Lab Hazards		**LGIS 3** **Biochemistry** Cell Membrane	**LGIS 3** **Physiology** Cell Membrane	**11:40-12:25** **LGIS 2** **Embryology** Spermatogenesis **12:25-1:10** **LGIS Pathology** Introduction, types, mechanism and causes of cell injury	Short Break	SGD General Anatomy Batch A Dr Batch B Dr. Batch C Dr. **Bone (1)** SGD General Anatomy Batch A Dr Batch B Dr. Batch C Dr. (DISSECTION HALL)
Friday 07/03/2025	8:30 – 9:15	9:15 – 10:00	10:00 – 10:45	10:45 – 11:45	11:45-12:30 / 12:30-1:15	1:15 – 2:00	2:00 – 3:00
	LGIS 4 **Biochemistry** Cell Membrane	**LGIS 3** **Embryology** Oogenesis	**LGIS 4** **Physiology** Cell organelles-I	**SGD** Physiology Y Topic Homeostasis Team **Dr. Iqra** Biochemistry X Topic Cell Biology Team **(supervised by)**	**Behavioral Sciences** Introduction to Bahavioural Sciences **Community Medicine** (Concept of health)	Prayer Break	**Early Clinical Exposure** **Radial Pulse** **(Skill lab/ medicine ward)** **CSIM (A)/ CSIM (B)** **Dr.**

Module Lead _____ **HoD Medical Education**_____ **Principal IMC** _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–2
First Year MBBS
Week-2

Day/Date	8:30 – 9:15	9:15-10:00	10:00 – 10:50	10:50 - 11:40	11:40-1:10	1:10 – 1:40	1:40 – 3:00
Monday 10/03/2025	**Quran** Prophethood (Risalat) & Divine Revelations **(Holy Books)**	**Behavior Sciences** Psychological Disorders FBS	**LGIS Biochemistry** Signal transduction	**LGIS Embryology** Reproductive Cycles	**SGD** **Physiology** Topic: Cell organelles X Team **(Batch X)** **Biochemistry** Topic: Cell membrane (Structure & Function) Y Team **(supervised by)**	Short Break	**SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Bone (2)** — **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. (DISSECTION HALL)
Tuesday 11/02/2025	**Practical** Anatomy / Physiology / Biochemistry A **Staining Techniques** B **ESR Deyermination** C **Identify the structure of cells under microscope**	**LGIS Physiology** Cell Organelles II	**LGIS Biochemistry** Signal transduction		**SGD** **Physiology** Topic: Cell organelles Y Team **(Batch Y)** **Biochemistry** Topic: Cell membrane (Structure & Function) X Team **(supervised by)**		**SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Cartilage** — **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. (DISSECTION HALL)
Wednesday 12/02/2025	**Practical** Anatomy / Physiology / Biochemistry C **Staining Techniques** A **ESR Deyermination** B **Identify the structure of cells under microscope**	**LGIS Histology** Cytoplasm & Organelles	**LGIS Physiology** Cell Transport I		**SGD** **Physiology** Topic: Cell Transport X Team **(Batch X)** **Biochemistry** Topic: Transoprt across membrane Y Team **(supervised by)**		**SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Joint (1)** — **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. (DISECTION HALL)
Thursday 13/02/2025	**Practical** Anatomy / Physiology / Biochemistry B **Staining Techniques** C **ESR Deyermination** A **Identify the structure of cells under microscope**	**LGIS Biochemistry** Signal transduction	**LGIS Physiology** Cell transport-II	**11:40-12:25** **LGIS Embryology** Fertilization	**12:25-1:10** **LGIS Patho** Types of cell death/ necrosis		**SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Joint (2)** — **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. (DISECTION HALL)
Friday 14/02/2025	**8:30 – 9:15** **LGIS Biochemistry** Subcellular organelles	**9:15 – 10:00** **LGIS Embryology** Contraception / Infertility assisted technique	**10:00 – 10 :45** **LGIS Physiology** Cell transport-III	**10:45 – 11:45** **SGD** **Physiology** Topic: **Cell Transport (Batch Y)** Y Team **Biochemistry** Topic: Transoprt across membrane X Team	**11:45-12:30** **Community Medicine** Positive health **Dr.Alisha Shaukat**	**12:30-1:15** **PERLs** Verbal and nonverbal Communication Skills	**1:15 – 2:00** Prayer Break	**2:00 – 3:00** **Early Clinical Exposure Aging Dr.**

Module Lead _____ HoD Medical Education_____ Principal IMC _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–3
First Year MBBS
Week-3

Day/Date	8:30 – 9:15	9:15-10:00	10:00 – 10:50	10:50 - 11:40	11:40-1:10	1:10 – 1:40	1:40 – 3:00
Monday 17/03/2025	**Quran** Angels & Belief in Hereafter (Aakhirat)	**PERLs** Responsibility towards self and the profession	**LGIS Biochemistry** Subcellula r organelles	**LGIS Embryology** First week of Development	**Physiology** Topic: RBC & Erythropoiesis; Team: X **Biochemistry** Topic: Signal transduction; Team: Y	**Short Break**	**SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Assessment** — **SGD** / **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr
Tuesday 18/03/2025	**Practical** Anatomy (A) **Epithelium (1)** Physiology (B) **Packed Cell Volume Determination** Biochemistry (C) **Methods of isolation of cell organelles**	**LGIS Physiology** Introduction to Blood & Plasma Proteins **Prof. Dr. Omar Shamim**	**LGIS Biochemistry** chemistry of purine and Pyrimidines **Prof. Zameer Ahmed (Principal–IMC)**	**SGD** **Physiology** Topic: RBC & Erythropoiesis; Team: Y **Biochemistry** Topic: Signal transduction; Team: X			(DISSECTION HALL) **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Muscle (1)** — **SGD** / **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr
Wednesday 19/03/2025	**Practical** Anatomy (A) **Epithelium (1)** Physiology (B) **Packed Cell Volume Determination** Biochemistry (C) **Methods of isolation of cell organelles**	**LGIS Histology** Cell junction & surface modifications	**LGIS Physiology** RBCs & Sites of Erythropoiesis	**SGD** **Physiology** Topic: Types of Hb & Role of Iron in Hb Formation; Team: X **Biochemistry** Topic: G-Protein singnalling; Team: Y			(DISECTION HALL) **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Muscle (2)** — **SGD** / **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr
Thursday 20/03/2025	**Practical** Anatomy (A) **Epithelium (1)** Physiology (B) **Packed Cell Volume Determination** Biochemistry (C) **Methods of isolation of cell organelles**	**LGIS Biochemistry** Chemistry of purine and pyrimidines	**LGIS Physiology** Erythropoiesis, It's Regulation & RBC Maturation	**11:40-12:25**: **LGIS Embryology** Assessment	**12:25-1:10**: **LGIS Patho** Cellular adoptations(types&mechanism),intracellular accumulations and calcification		(DISECTION HALL) **SGD** / **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. — **Skin & Appendages** — **SGD** / **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr (DISECTION HALL)
Friday 21/03/2025	**8:30 – 9:15**	**9:15 – 10:00**	**10:00 – 10: 45**	**10:45 – 11:45**	**11:45-12:30** / **12:30-1:15**	**1:15 – 2:00**	**2:00 – 3:00**
	LGIS Biochemistry DNA	**LGIS Embryology** 2nd week of Development	**LGIS Physiology** Hemoglobin & Role of Iron	**SGD** **Physiology** Topic: Types of Hb & Role of Iron in Hb Formation; Team: Y **Biochemistry** Topic: G-Protein singnalling; Team: X	**Behavior Sciences** Psychology and Disease / **Community Medicine** Health indicators	**Prayer Break**	**Early Clinical Exposure (Skill lab/ medicine ward) CSIM (A)/ CSIM (B) Aging**

Module Lead _____ **HoD Medical Education**_____ **Principal IMC** _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–1
First Year MBBS
Week-4

Day/Date	8:30 – 9:10	9:10-9:50	9:50 – 10:30	10:30 - 11:10	11:10-12:10	12:10 – 12:30	12:30 – 1:30
Monday 24/03/2025	**Quran** Qadr (Taqdeer)	**PERLs** Teamwork	**LGIS Biochemistry** Nucleotides	**LGIS Embryology/Gynea** 2nd week of Development	**SGD** Physiology X: Topic / Team — WBC Classification & Functions of WBCs Biochemistry Y: Topic / Team — Chemistry of purines & pyrimidines	**Short Break**	SGD: Batch A, Batch B, Batch C — General Anatomy: Dr, Dr., Dr. — **CNS** — SGD: Batch D, Batch E, Batch F — General Anatomy: Dr., Dr., Dr (DISSECTION HALL)
Tuesday 25/03/2025	**Practical** **Anatomy (A)** Epithelium II **Physiology (B)** Determination of Blood Group **Biochemistry (C)** Cell organelles		**LGIS Physiology** WBC Classification & Abnormal WBC Counts	**LGIS Biochemistry** Chromosomes	**SGD** Physiology Y: Topic / Team — WBC Classification & Functions of WBCs Biochemistry X: Topic / Team — Chemistry of purines & pyrimidines		**12:30 - 1:30** SGD: Batch A, Batch B, Batch C — General Anatomy: Dr, Dr., Dr. — **PNS** — SGD: Batch D, Batch E, Batch F — General Anatomy: Dr., Dr., Dr (DISSECTION HALL)
Wednesday 26/03/2025	**Practical** **Anatomy (B)** Epithelium II **Physiology (C)** Determination of Blood Group **Biochemistry (A)** Cell organelles		**LGIS Histology** Epithelium (I)	**LGIS Physiology** Functions of Neutrophils	**SGD** Physiology X: Topic / Team — Monocyte Macrophage System — **Dr. Aniqa** Biochemistry Y: Topic / Team — DNA & RNA		SGD: Batch A, Batch B, Batch C — General Anatomy: Dr, Dr., Dr. — **ANS** — SGD: Batch D, Batch E, Batch F — General Anatomy: Dr., Dr., Dr (DISSECTION HALL)
Thursday 27/03/2025	**Practical** **Anatomy (C)** Epithelium II **Physiology (A)** Determination of Blood Group **Biochemistry (B)** Cell organelles		**LGIS Biochemistry** Enzymes	**LGIS Physiology** Functions of Macrophages II	**11:10-11:50** **LGIS Embryology** 3rd week of Development	**11:50-12:30** **LGIS Patho** Apoptosis,def,examples and mechanism,diff b/w apoptosis and necrosis	SGD: Batch A, Batch B, Batch C — General Anatomy: Dr, Dr., Dr. — **Blood vessels** — SGD: Batch D, Batch E, Batch F — General Anatomy: Dr., Dr., Dr (DISSECTION HALL)
Friday 28/03/2025	**08:30 – 09:05** **LGIS Biochemistry** Enzymes	**09:05 – 09:40** **LGIS Embryology** 3rd week of Development	**09:40 – 10:15** **LGIS Physiology** Reticulo Endothelial System I	**10:15 – 11:05** **SGD** Physiology Y: Topic / Team — Monocyte Macrophage System — **Dr. Iqra** Biochemistry X: Topic / Team — DNA & RNA — **(Supervised by)**	**11:05-11:40** **LGIS Behavior Sciences** Behavioral factorsand pharmacological treatment	**11:40-12:15** **LGIS Community Medicine** Disease causation	**12:15 - 1 :00** **LGIS** **CFRC** **RADIAL PERLS .** **Aging** **Dr.**

Module Lead _____ HoD Medical Education_____ Principal IMC _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–1
First Year MBBS
Week-

Day/Date	Holiday
Monday 31/03/2025	Eid-Ul- Fiter
Tuesday 01/04/2025	Eid-Ul- Fiter
Wednesday 02/04/2025	Eid-Ul- Fiter
Thursday 03/04/2025	Eid-Ul- Fiter
Friday 04/04/2025	Eid-Ul- Fiter

Module Lead _____ HoD Medical Education_____ Principal IMC _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–1
First Year MBBS
Week-5

Day/Date	8:30 – 9:10	9:10-9:50	9:50 – 10:30	10:30 - 11:10	11:10-12:10	12:10 – 12:20	12:20 – 12:55	12:55 – 1:30
Monday 07/04/2025	**LGIS Pharma** Basic terminologies of Pharmacology	**LGIS Patho** General Pathology	**LGIS Biochemistry** Protein	**LGIS Embryology/Gynea** Fetal period	**SGD** **Physiology** X Topic Team: ABO Blood System & ABO Incompatibility **Biochemistry** Topic: Enzymes Y Team: **(Supervised by)**	**Short Break**	**LGIS Community Medicine** Disease prevention	**C-FRC** Blood Pressure
Tuesday 08/04/2025	**8:30 - 9:50** **Practical** **Anatomy** A Connective tissue II **Physiology** B **Identify various types of WBCs in a prepared DLC (Differential Leukocyte Count) Slide** **Biochemistry** C Chromatography	**9:50 – 10:30** **LGIS Physiology** Polycythemia	**10:30 - 11:10** **LGIS Biochemistry** Protein	**11:10-12:10** **SGD** **Physiology** Y Topic Team: ABO Blood System & ABO Incompatibility **Biochemistry** Topic: Enzymes X Team: **(Supervised by)**			**12:20 - 1:30** **SGD** **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. **Embryology Assessment** **SGD** **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr . (DISSECTION HALL)
Wednesday 09/04/2025	**Practical** **Anatomy** C Connective tissue II **Physiology** A **Identify various types of WBCs in a prepared DLC (Differential Leukocyte Count) Slide** **Biochemistry** B Chromatography	**LGIS Histology** Connective tissue 1	**LGIS Physiology** Hemostasis	**SGD** **Physiology** X Topic Team: Rh Blood System & Rh Incompatibility **Biochemistry** Topic: Amino Acids & Proteins Y Team: **(Supervised by)**			**SGD** **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. **Revision G.A** **SGD** **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr . (DISSECTION HALL)
Thursday 10/04/2025	**Practical** **Anatomy** B Connective tissue II **Physiology** C **Identify various types of WBCs in a prepared DLC (Differential Leukocyte Count) Slide** **Biochemistry** A Chromatography	**LGIS Biochemistry** Plasma Proteins	**LGIS Physiology** Functions of Platelet	**11:10-11:45** **LGIS Embryology** Fetal Membranes **11:45-12:20** **LGIS Patho** Growth curve of bacteria and steps of viral infection			**SGD** **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. **Revision G.A** **SGD** **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr . (DISSECTION HALL)	
Friday 11/04/2025	**08:30 – 09:05** **LGIS Biochemistry** Plasma Proteins	**09:05 – 09:40** **LGIS Embryology** Placenta	**09:40– 10:15** **LGIS Physiology** Coagulation Pathwayas	**10:15– 11:05** **SGD** **Physiology** Y Topic Team: Rh Blood System & Rh Incompatibility **Biochemistry** Topic: Amino Acids & Proteins X Team: **(Supervised by)**	**11:05-11:40** **LGIS Behavior Sciences** Stress		**11:40 - 1 :00** **SGD** **General Anatomy**: Batch A Dr; Batch B Dr.; Batch C Dr. **Revision G.A** **SGD** **General Anatomy**: Batch D Dr.; Batch E Dr.; Batch F Dr . (DISSECTION HALL)	

Module Lead _____ HoD Medical Education_____ Principal IMC _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–7/8
First Year MBBS
Week-6

Day/Date	8:30 – 9:10	9:10-9:50	9:50 – 10:30	10:30 - 11:10	11:10-12:10	12:10 – 12:20	12:20 – 12:55	12:55 – 1:30
Monday 14/04/2025	**LGIS** **Pharma** Autonomic System	**LGIS** **Patho** General Microbiology	**LGIS** **Biochemistry** Immunoglobulins	**LGIS** **Biochemistry** **Immunoglobulins**	**SGD** **Physiology** Topic Viva **X** Team **Biochemistry** Topic Proteins **Y** Team **(Supervised by)**	**S h o r t B r e a k**	**LGIS Community Medicine** Disease prevention	**C-FRC** **Donning and Doffing**
							(DISSECTION HALL)	
Tuesday 15/04/2025	**8:30 - 9:50** **Practical** **Anatomy** A Glands **Physiology** B Determine Bleeding Time **Biochemistry** C Solutions		**9:50 – 10:30** **LGIS** **Physiology** Anti- Coagulation Mechanisms	**10:30 - 11:10** **LGIS** **Biochemistry** Immunoglobulins	**11:10-12:10** **SGD** **Physiology** Topic Viva **Y** Team **Biochemistry** Topic Proteins **X** Team **(Supervised by)**		**12:20 - 1:30** **SGD** **General Anatomy** **Batch A** **Dr** **Batch B** **Dr.** **Batch C** **Dr.** **Revision G.A** **SGD** **General Anatomy** **Batch D** **Dr.** **Batch E** **Dr.** **Batch F** **Dr .**	
							(DISSECTION HALL)	
Wednesday 16/04/2025	**Practical** **Anatomy** C Glands **Physiology** A Determine Bleeding Time **Biochemistry** B Solutions		**LGIS** **Histology** Connective tissue II **Prof. Dr. Riaz Ahmad**	**LGIS** **Physiology** PT,INR Significance	**SGD** **Physiology** Topic Anemia & Polycythemia **X** Team **Biochemistry** Topic Plasma Proteins **Y** Team **(Supervised by)**		**SGD** **General Anatomy** **Batch A** **Dr** **Batch B** **Dr.** **Batch C** **Dr.** **Revision G.A** **SGD** **General Anatomy** **Batch D** **Dr.** **Batch E** **Dr.** **Batch F** **Dr .**	
							(DISSECTION HALL)	
Thursday 17/04/2025	**Practical** **Anatomy** B Glands **Physiology** C Determine Bleeding Time **Biochemistry** A Solutions		**LGIS** **Biochemistry** ALL **Module Lead with Team**	**LGIS** **Physiology** Coagulation Disorders	**11:10-11:45** **LGIS** **Embryology** Birth defects **11:45-12:20** **LGIS** **Patho** Enlist types of bacterial infection,stages and determinants of bacterial pathogenesis		**SGD** **General Anatomy** **Batch A** **Dr** **Batch B** **Dr.** **Batch C** **Dr.** **Assessment** **SGD** **General Anatomy** **Batch D** **Dr.** **Batch E** **Dr.** **Batch F** **Dr .**	
							(DISSECTION HALL)	
Friday 18/04/2025	**08:30 – 09:05** **LGIS** **Biochemistry** ALL **Module Lead with Team**	**09:05 – 09:40** **LGIS** **Embryology** Prenatal diagnosis	**09:40– 10:15** **LGIS** **Physiology** Immunity I	**10:15– 11:05** **SGD** **Physiology** Topic Anemia & Polycythemia **Y** Team **Dr.Khadija** **Biochemistry** Topic Plasma Proteins **X** Team	**11:05-11:40** **LGIS** **Behavior Sciences** Assessment		**11:40 - 1 :00** **SGD** **General Anatomy** Batch A Dr Batch B Dr. Batch C Dr. **Assessment** **SGD** **General Anatomy** **Batch D** **Dr.** **Batch E** **Dr.** **Batch F** **Dr .**	
							(DISSECTION HALL)	

Module Lead _____ **HoD Medical Education**_____ **Principal IMC** _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–8/8
First Year MBBS
Week-7

Day/Date	8:30 – 9:10	9:10-9:50	9:50 – 10:30	10:30 - 11:10	11:10-12:10	12:10 – 12:20	12:20 – 12:55	12:55 – 1:30
Monday 21/04/2025	**LGIS** **Pharma** Autonomic System	**LGIS** **Patho** General Microbiology	**LGIS** **Biochemistry** Immunoglobulins	**LGIS** **Biochemistry** **Immunoglobulins**	**SGD** **Physiology** X Topic Viva Team **Biochemistry** Topic Proteins Y Team **(Supervised by)**	**S h o r t B r e a k**	**LGIS Community Medicine** Disease prevention	**C-FRC** **Donning and Doffing** **(DISSECTION HALL)**
Tuesday 22/04/2025	**8:30 - 9:50** **Practical** **Anatomy** A Glands **Physiology** B Determine Bleeding Time **Biochemistry** C Solutions	**9:50 – 10:30** **LGIS** **Physiology** Anti- Coagulation Mechanisms	**10:30 - 11:10** **LGIS** **Biochemistry** Immunoglobulins	**11:10-12:10** **SGD** **Physiology** Y Topic Viva Team **Biochemistry** Topic Proteins X Team **(Supervised by)**			**12:20 - 1:30** **SGD** **General Anatomy** **Batch A** Dr **Batch B** Dr. **Batch C** Dr. **Revision G.A** **SGD** **General Anatomy** **Batch D** Dr. **Batch E** Dr. **Batch F** Dr . **(DISSECTION HALL)**	
Wednesday 23/04/2025	**Practical** **Anatomy** C Glands **Physiology** A Determine Bleeding **Biochemistry** B Solutions	**LGIS** **Histology** Connective tissue II **Prof. Dr. Riaz Ahmad**	**LGIS** **Physiology** PT,INR Significance	**SGD** **Physiology** X Topic Anemia & Polycythemia Team **Biochemistry** Topic Plasma Proteins Y Team **(Supervised by)**			**SGD** **General Anatomy** **Batch A** Dr **Batch B** Dr. **Batch C** Dr. **Revision G.A** **SGD** **General Anatomy** **Batch D** Dr. **Batch E** Dr. **Batch F** Dr . **(DISSECTION HALL)**	
Thursday 24/04/2025	**Practical** **Anatomy** B Glands **Physiology** C Determine Bleeding Time **Biochemistry** A Solutions	**LGIS** **Biochemistry** ALL **Module Lead with Team**	**LGIS** **Physiology** Coagulation Disorders	**11:10-11:45** **LGIS** **Embryology** Birth defects	**11:45-12:20** **LGIS** **Patho** Enlist types of bacterial infection,stages and		**SGD** **General Anatomy** **Batch A** Dr **Batch B** Dr. **Batch C** Dr. **Assessment** **SGD** **General Anatomy** **Batch D** Dr. **Batch E** Dr. **Batch F** Dr . **(DISSECTION HALL)**	
Friday 25/04/2025	**08:30 – 09:05** **LGIS** **Biochemistry** ALL **Module Lead with Team**	**09:05 – 09:40** **LGIS** **Embryology** Prenatal diagnosis	**09:40– 10:15** **LGIS** **Physiology** Immunity I	**10:15– 11:05** **SGD** **Physiology** Topic Anemia & Polycythemia **Biochemistry** Topic Plasma Proteins X Team	**11:05-11:40** **LGIS** **Behavior Sciences** Assessment		**11:40 - 1 :00** **SGD** **General Anatomy** Batch A Dr Batch C Dr. **Assessment** **SGD** **General Anatomy** **Batch D** Dr. **Batch F** Dr . **(DISSECTION HALL)**	

Module Lead _____ HoD Medical Education_____ Principal IMC _____

Islam Medical College, Sialkot
Training Program: Foundation Module-I Week–7/7 Continue
First Year MBBS
Week-8

Day/Date	8:30 – 9:10	9:10-9:50	9:50 – 10:30	10:30 - 11:10	11:10-12:10	12:10 – 12:20	12:20 – 12:55	12:55 – 1:30
Monday 28/04/2025	**LGIS Pharma** Autonomic System	**LGIS Patho** General Microbiology	**LGIS Biochemistry** Immunoglobulins	**LGIS Biochemistry Immunoglobulins**	**SGD** Physiology Topic Viva X Team Biochemistry Topic Proteins Y Team **(Supervised by)**	**Short Break**	**LGIS Community Medicine** Disease prevention	**C-FRC Donning and Doffing**
							(DISSECTION HALL)	
Tuesday 29/04/2025	**8:30 - 9:50** **Practical** **Anatomy** **A** Glands **Physiology** **B** Determine Bleeding Time **Biochemistry** **C** Solutions		**9:50 – 10:30** **LGIS Physiology** Anti- Coagulation Mechanisms	**10:30 - 11:10** **LGIS Biochemistry** Immunoglobulins	**11:10-12:10** **SGD** Physiology Topic Viva Y Team Biochemistry Topic Proteins X Team **(Supervised by)**		**12:20 - 1:30** **SGD** **General Anatomy** Batch A Dr Batch B Dr. Batch C Dr. **Revision G.A** **SGD** **General Anatomy** Batch D Dr. Batch E Dr. Batch F Dr .	
							(DISSECTION HALL)	
Wednesday 30/04/2025	**Practical** **Anatomy** **C** Glands **Physiology** **A** Determine Bleeding Time **Biochemistry** **B** Solutions		**LGIS Histology** Connective tissue II **Prof. Dr. Riaz Ahmad**	**LGIS Physiology** PT,INR Significance	**SGD** Physiology Topic Anemia & Polycythemia X Team Biochemistry Topic Plasma Proteins Y Team **(Supervised by)**		**SGD** **General Anatomy** Batch A Dr Batch B Dr. Batch C Dr. **Revision G.A** **SGD** **General Anatomy** Batch D Dr. Batch E Dr. Batch F Dr .	
							(DISSECTION HALL)	
Thursday 01/05/2025	**Practical** **Anatomy** **B** Glands **Physiology** **C** Determine Bleeding Time **Biochemistry** **A** Solutions		**LGIS Biochemistry** ALL **Module Lead with Team**	**LGIS Physiology** Coagulation Disorders	**11:10-11:45** **LGIS Embryology** Birth defects **11:45-12:20** **LGIS Patho** Enlist types of bacterial infection,stages and determinants of bacterial pathogenesis		**SGD** **General Anatomy** Batch A Dr Batch B Dr. Batch C Dr. **Assessment** **SGD** **General Anatomy** Batch D Dr. Batch E Dr. Batch F Dr .	
							(DISSECTION HALL)	
Friday 02/05/2025	**08:30 – 09:05** **LGIS Biochemistry** ALL **Module Lead with Team**	**09:05 – 09:40** **LGIS Embryology** Prenatal diagnosis	**09:40– 10:15** **LGIS Physiology** Immunity I	**10:15– 11:05** **SGD** Physiology Topic Anemia & Polycythemia Y Team **Dr.Khadija** Biochemistry Topic Plasma Proteins X Team	**11:05-11:40** **LGIS Behavior Sciences** Assessment		**11:40 - 1 :00** **SGD** **General Anatomy** Batch A Dr Batch B Dr. Batch C Dr. **Assessment** **SGD** **General Anatomy** Batch D Dr. Batch E Dr. Batch F Dr .	
							(DISSECTION HALL)	

Module Lead _____

HoD Medical Education_____

Principal IMC _____

ASSESSMENTTOOLS

Students will be assessed by the following methods

1. **Fortnightly Assessments**

Assessments will be conducted every Monday.

2. **Assignments/PBLs:**

Assignments/PBLs will be given monthly.

3. **Block Exam:**

At the end of block an exam will be conducted comprising of theory(MCQs & SEQs)

and practical/OSPE content.

4. **Departmental quizzes, presentations & group projects:**

Above mentioned can be the assessment tools for different departments on their will.

Table 1

YEAR-1						
Subject	**Theory**		**Practical**			**Total**
Block 1 **Modules** (Foundation-I + Hematopoietic and Lymphatic)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	011 OSPE 02 OSCE 03 OSVE	Marks 88 10 42	**350**
	Part II SEQS (10)	50 Marks				
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	**175**	Total	**175**		
Block 2 **Modules** (Musculoskeletal & Locomotion-I)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	11 OSPE 02 OSCE 03 OSVE	Marks 88 10 42	**350**
	Part II SEQS (10)	50 Marks				
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	**175**	Total	**175**		
Block 3 **Modules** (Cardiovascular-I & Respiratory-I)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	11 OSPE 02 OSCE 03 OSVE	Marks 88 10 42	**350**
	Part II SEQS (10)	50 Marks				
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	**175**	Total	**175**		
				Total Marks:		**1050**
YEAR-2						
Block 4 **Modules** (GIT & Nutrition-I + Renal-I)	Part I MCQs (90)	90 Marks	Practical /Clinical Examination	11 OSPE 02 OSCE 03 OSVE	Marks 88 10 42	**350**
	Part II SEQS (10)	50 Marks				
	Internal Assessment 10%	35 Marks	Internal Assessment 10%	35 Marks		
	Total	**175**	Total	**175**		
Block 5 **Modules** (Endocrinology & Reproduction-I +	Part I MCQs (90)	90Marks	Practical /Clinical Examination	11 OSPE 02 OSCE 03 OSVE	Marks 88 10 42	**350**
	Part II SEQS (10)	50Marks				

Internal Assessment Theory

Sr.	Scoring Parameter	Marks out of 20%	Marks Distribution
1	Attendance in Lectures	85-90%=1% , > 90%=2% Remedial classes – re-sit exam allowed only after case endorsed and submitted by the college **Principal** and approval given by the **Competent Authority**. However, no marks given Remedial classes – re-sit exam allowed only in genuine cases after approval from **Competent Authority**. However, no marks given	85-90%= **01** mark > 90%=**02** marks
2	Block Exam	15%	**22**
3	Continuous Internal Assessment/Class Quiz/Class participation/ Professional Behaviour/ Ethical practices/ Leadership traits/ Module Exam Discipline/Punctuality	3%	**06**

Internal Assessment Practical & Behavioral

Sr.	Scoring Parameter	Marks out of 20%	Marks Distribution
1	Attendance in Practicals & Rotations	85-90%=1% , > 90%=2% Remedial classes – re-sit exam allowed only after case endorsed and submitted by the college **Principal** and approval given by the **Competent Authority**. However, no marks given Remedial classes – re-sit exam allowed only in genuine cases after approval from **Competent Authority**. However, no marks given	85-90%= **01** mark > 90%=**02** marks
2	Block Exam (OSPE/OSCE/OSVE)	15%	**26**
3	CFRC Log Book / PERLs Portfolio	04%	**07**

MBBS 1st Professional

Block-1

Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (5 marks each observed)	OSVE (14 marks each observed)	Marks
Normal Structure	Anatomy applied/clinical	20	04	40	04	-	01	46
Normal Function	Physiology applied/clinical	22	03	37	03	-	01	38
	Biochemistry applied/clinical	24	02	34	02	-	01	30
Disease Burden & Prevention	Community Medicine & Public Health	06	-	06	-	-	-	-
	Behavioral Sciences	05	-	05	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	08	01	13	1	-	-	8
	Pharmacology	05	-	05	1	-	-	8
CFRC	CF-I	-	-	-	-	01	-	05
PERLs	PERLs-I	-	-	-	-	01	-	05
Total		**90**	**10x5=50**	**140**	**11 stations x 08 = 88**	**02 stations x 05 = 10**	**03 stations x 14=42**	**140**

LIST OF RESOURCES

Anatomy

- Snell's Clinical Anatomy 10th ed.
- Langman's Medical Embryology 12th ed
- Medical Histology by Laiq Hussain Siddiqui 8th edition.
- General Anatomy by Laiq Hussain Siddiqui 6th edition.

Biochemistry

- Harpers illustrated Biochemistry (latest edition). Rodwell.V.W MCGrawHill publishers.
- Lippincott illustrated Review (latest edition). Kluwer.W.
- Essentials of Medical Biochemistry vol 1&2 by Mushtaq Ahmed.

Pathology

- Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pathologic basis of disease. WB Saunders.
- Robbins and Cotran Pathological Basis of Disease. Kumar, V., Abbas, A. and Aster, J. Latest Edition
- Richard Mitchall, Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pocket Companion to Pathologic basis of diseases, Saunder Harcourt.
- Walter and Israel. General Pathology. Churchill Livingstone.
- Robbins & Kumar, Medical Microbiology and Immunology Levinson.

General Medicine

- Principles and Practice of Medicine by Davidson (latest edition)
- Clinical Medicine by Parveen J Kumar & Michaell Clark
- Oxford Handbook of Medicine
- Macleod's Clinical Examination book
- Medicine and Toxicology by C.K. Parikh
- Hutchison's Clinical Methods by Michael Swash. 21st edition

Pharmacology And Therapeutics

- Katzung and Trevor's Pharmacology: Examination and Board Review- 15th Edition
- Basic and Clinical Pharmacology by Bertram G Katzung (case scenarios only) - 16th Edition-
- Current Medical Diagnosis and Treatment- reference book –Edition-2024
- Basic and Clinical Pharmacology by Bertram G Katzung (case scenarios only) - 15th Edition
- Basic and Clinical Pharmacology by Katzung, McGraw-Hill. 16th Edition.
- Pharmacology by Champe and Harvey, Lippincott Williams & Wilkins 8th Edition.

- Katzung Basic and Clinical pharmacology, Lippincot Illustated reviews.
- Clinical Pathology Interpretations by A. H. Nagi

Behavioural Sciences

- Handbook of Behavioural Sciences by Prof. Mowadat H.Rana, 3rd Edition
- Medical and Psychosocial aspects of chronic illness and disability 6th edition by Donna R.Falvo and Beverely E.Holland,
- Integrating behavioral sciences in healthcare, Asma Humayun,2003, 1st edition

Community medicine

- Parks Textbook of Preventive and Social Medicine. K. Park
- Public Health and Community Medicine by Ilyas Ansari
- MSDS manual of Government of Punjab
- Text book of Community Medicine by Park J E. Latest Edition

Surgery

- Bailey & Love's Short Practice of Surgery (latest edition)
- Browse's Introduction to the Symptoms & Signs of Surgical Disease 4th Edition
- Bailey & Love Short Practice of Surgery, Clinical Surgery pearls by Dayananda Babu RACS for Surgical Audits.

Patient Safety

- Patient Safety Currciulum Guide: Multi Professional Guide

Microbiology

- Levinson's review of Microbiology
- Medical Microbiology and Immunology by Levinson and Jawetz,

Pediatrics Medicine

- Nelson Textbook of Pediatrics
- Basis of Pediatrics by Pervez Akbar Khan

Gynecology

- Gynecology by Ten Teachers

Infection Control

- National Guidelines Infection Prevention and control, National Institute of Health Pakistan

Biosafety

- Biosafety in Microbiological and Biomedical Laboratories, 6th Edition (CDC, USA)
- WHO Laboratory Biosafety Manual, Fourth Edition, And Associated Monographs
- WHO safe management of wastes from healthcare facilities chapter 7 -8 page 77-99, 105-125)

Family medicine

- Oxford Handbook of General Practice, 5th Edition

Orthopedics

- Apley and Solomon's System of Orthopaedics and Trauma by Ashley Blom (Editor)

Rheumatology

- Davidson's Principles and Practice of Medicine
- Clinical Medicine by Parveen J Kumar & Michaell, Clark
- Hutchison's Clinical Methods by Michael Swash

Radiology

- Aids to Radiological Differential Diagnosis by Chapman S. and Nakielny R. 4th edition. Elsevier Science Limited; 2003.

Forensic Medicine

- Knight's Forensic Pathology by Barnard Knight 3rd edition
- G. Principles and Practice of Forensic Medicine by Prof. NasibR. Awan,2nd edition
- Forensic DNA Typing – 2nd Edition, Author: John M. Butler
- Parikh's Text book of Medical Jurisprudence, Forensic Medicine and Toxicology by C.K. Parikh 6th Ed., CBS Publisher.
- Gun Shot Wounds 2nd edition by V.J.Deimaio
- Knight B. Simpson's Forensic Medicine.
- Knight and Pekka. Principles of Forensic Medicine

Forensic Pathology

- Forensic pathology 2nd edition by V.J.Deimaio CRC press Boca Raton London New York Washington DC

Toxicology

- Principles of clinical toxicology 3rd edition Thomas . Gossel CRC press Taylor and Francis group

Forensic Sciences

- Fundamentals of Forensic Science- 3rd Edition: Author: Max M Houck, Jay A. Siegel
- Text Book of forensic medicine and toxicology Principles and Practice 5th edition by Krishan Vig

Biomedical ethics

- Principles of Biomedical ethics, 8th edition by Tom. L. Beauchamp, James F. Childress.

Evidence Based Medicine

- Databases for the latest articles/manuscripts
- Clinical Practice Guidelines- local and international - (within last 3 years)
- Books (Latest edition-within last 5 years)

Pediatrics

- Nelson's Book of Pediatric 22 edition Illustrated book of Pediatrics, Pervaiz Akbar textbook peads medicine

Islamiyat

- Standard Islamiyat (compulsory) for B.A, BSc, MA, MSc, MBBS by Prof M Sharif Islahi.
- IImi Islamiyat(compulsory) for BA, BSc & equivalent.

MODULAR INTEGRATED CIRRICULUM 2K23

version 3.0

VOLUME:01

LOGBOOK

CLINICAL-FOUNDATION ROTATION CLERKSHIP

C-FRC

LOGBOOK
C-FRC

C-FRC-1
YEAR-1

BLOCK-01

FOUNDATION MODULE		
Objectives	**Skill**	**Miller's Pyramid Level Reflected**
Demonstrate steps of hand washing	Hand washing	Shows
Demonstrate the procedure of taking thepulse	Radial Pulse	Shows
Record the Respiratory Rate of patient	Respiratory Rate measurement	Shows
Demonstrate the procedure of taking theBlood Pressure	Blood Pressure	Shows
Demonstrate the process of wearing thegloves	Donning and Doffing	Shows

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines
Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Date Observed: _____

CHECKLIST FOR HANDWASHING **(Some of the following steps/tasks should be performed simultaneously.)**	**CASES (Minimum 2 Entries)**	
STEP/TASK		
GETTING READY: 1. Has read the handwashing procedure and understands the 4 moments of hand hygiene. i. Before Contact with patient and/or their environment ii. Before performing a clean and/or aseptic procedure iii. After exposure to blood and/or body fluid iv. After contact with patient and/or their environment		
SKILL/ACTIVITY PERFORMED SATISFACTORILY		
THE PROCEDURE: 1. Wet hands with warm water		
2. Apply soap and lather thoroughly		
3. Rub palms, spaces between fingers, backs of hands and wrists, rubbing it vigorously.		
4. Able to identify how long handwashing procedure is		
5. Rinse under running water.		
6. Pat hands dry with paper towel.		

7. Turn off tap with paper towel		
SKILL/ACTIVITY PERFORMED SATISFACTORILY		
SIGNATURES OF SUPERVISOR		

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

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Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Date Observed: _____

CHECKLIST FOR RADIAL PULSE **(Some of the following steps/tasks should be performed simultaneously.)**	**CASES (Minimum 2 Entries)**		
STEP/TASK			
GETTING READY:			
1. Washed hands/sanitized hands			
2. Prepared equipment: watch with second hand.			
3. Explained procedure to the patient and take consent			
4. Determined if the patient is taking any medications that may affect the pulse rate.			
5. Assisted the patient to a comfortable position			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
THE PROCEDURE:			
6. Located the radial artery. Use the tip of the index and third fingers of your other hand to feel the pulse in your radial artery between your wrist bone and the tendon on the thumb side of your wrist.			
7. Placed the tips of index and middle fingers over the vessel.			
8. Pushed lightly at first, adding pressure till feeling the pulsation			

SKILL/ACTIVITY PERFORMED SATISFACTORILY			
POST PROCEDURE: 9. Discussed the findings with the facilitator			
10. Washed hands.			
11. Recorded the results as beats / minute and comment on, rate and rhythm			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
SIGNATURES OF SUPERVISOR			

VITAL SIGNS REFERENCE RANGES

(Ref: EMT National Training - National Exams)

Ages	Heart Rae	Respiratory Rate	Systolic Blood Pressure	Temperature
Infancy (Birth to 1 Year)	100 to 160 (first 30 minutes) Settling around 120 bpm	40 to 60 initially 30-40 after first few minutes. 20-30 by one year	70 at Birth to 90 at 1 year	98-100
Toddler (12 to 36 Months) and Preschool Age (3 to 5 Years)	20 to 130 bpm 20 to 120 bpm	20 to 30 20 to 30	70 to 100 mmHg 80 to 110 mmHg	96.8 – 99.6
School-age Children (6 to 12 Years)	70 to 110 bpm	20 to 30	80 to 120 mmHg	98.6
Adolescence (13 to 18 Years)	55 to 105 bpm	12 to 20	100 to 120 mmHg	98.6
Early Adulthood (20 to 40 Years)	70 bpm average	16 to 20 (12-20 normal)	120/80 mmHg average	98.6
Middle Adulthood (41 to 60 Years	70 bpm average	16 to 20 (12-20 normal)	120/80 mmHg average	98.6

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines
Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Date Observed: _____

Note: Respiratory rate is not taken in isolation, usually it is performed while checking radial pulse.

CHECKLIST FOR RESPIRATORY **(Some of the following steps/tasks should be performed simultaneously.)**	**CASES (Minimum 3 Entries)**		
STEP/TASK			
GETTING READY: 1. Introduce yourself to the patient.			
2. Explain the procedure of radial pulse measurement and reassure the patient.			
3. Get patient's consent.			
4. Wash hands/Sanitize hands			
5. Prepare the necessary material (clock/watch)			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
THE PROCEDURE: 6. Check radial pulse (see pulse checklist for reference).			
7. Proceed with taking the Respiratory rate (RR) while your hand is still on the patient's radial artery (Do not inform your patient that you are taking the RR).			

8. Placed Observe the rise and fall of the patient's chest and count the number of respirations for another one full minute. (One respiration consists of one complete rise and fall of the chest, or the inhalation and exhalation of air).			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
SIGNATURES OF SUPERVISOR			

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines
Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Date Observed: _____

CHECKLIST FOR BLOOD PRESSURE **(Some of the following steps/tasks should be performed simultaneously.)**	**CASES (Minimum 3 Entries)**		
GETTING READY:			
1. Introduce yourself to the patient.			
2. Explain the procedure and reassure the patient. (blood pressure measurement)			
3. Get patient's consent.			
4. Wash hands/sanitize hands			
5. Prepare the necessary material (clock/watch)			
6. Position the patient in a sitting position and uncover one of his /her arms. (Make sure the patient is relaxed and comfortable).			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
THE PROCEDURE:			
6.Turn on the mercury valve (if it is mercury sphygmomanometer).			
7. Select an appropriately sized cuff and apply it to the upper arm ensuring that it fits securely. (The centre of the cuff bladder must be over brachial artery [the bladder should cover 80% of the circumference of the upper arm] and lower edge 2.5 cm above the ante-cubital fossa).			

8. Palpate the brachial or radial artery while inflating the cuff till the point where pulsation disappears and keep inflating the cuff 20-30 mmHg more.			
9. Slowly deflate the cuff, noting the pressure at which the pulse reappears. (This is the approximate level of the systolic blood pressure).			
10. Continue to deflate the cuff slowly at 2 mm Hg/second. Note the point at which Korotkoff sounds disappear completely as the diastolic pressure.			
11. Turn off the mercury valve (if it is mercury sphygmomanometer).			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
POST PROCEDURE:			
12. Wash hands.			
13. Document the findings			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines
Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Date Observed: _____

CHECKLIST FOR DONNING & DOFFING **(Some of the following steps/tasks should be performed simultaneously.)**	**Minimum 2 Entries**	
STEP/TASK		
GETTING READY: 1. Washed hands.		
2. Preparation: gloves, in place		
SKILL/ACTIVITY PERFORMED SATISFACTORILY		
THE PROCEDURE: (gloving) 3. Pick up one glove and place the palm away from you. Slide the fingers under the glove cuff and spread them so that a wide opening is created. Keep thumbs under the cuff.		
4. The doctor will thrust his or her hand into the glove. Do not release the glove yet		
5. Gently release the cuff (do not allow the cuff to snap sharply) while unrolling it over the wrist. Proceed with the other glove using the same technique.		
SKILL/ACTIVITY PERFORMED SATISFACTORILY		

Signatures of Supervisor	

HEMATOPOEITC AND LYMPHATIC MODULE		
Objectives	**Skill**	**Miller's Pyramid Level Reflected**
Detail the steps of drawing blood from a vein.	*Venipuncture and blood collection	Knows how
Check for pallor in the conjunctiva, tongue, and palm of hands	Pallor	Shows

- These skills are at the 'Knows how' level of the miller's pyramid, meaning thereby that students need not perform them themselves but may develop a perception regarding them by observing performance/working on simulated patients/facilitation with video.

COLLECTION

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines
Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

Date Observed: _____

CHECKLIST FOR VENIPUNCTURE **(Some of the following steps/tasks should be performed simultaneously.)**	**CASES** **(Minimum 2 Entries)**	
GETTING READY:		
1. Identification of patient		
2. Washed hands/ sanitized hands		
3. Preparation: gloves, in place		
SKILL/ACTIVITY DESCRIBED SATISFACTORILY		
THE PROCEDURE:		
4. Explain procedure to the patient and obtain consent		
6. Clean the site with an antiseptic solution and allow it to dry		
7. Select an appropriate site for venipuncture, such as the antecubital fossa or the back of the hand		
7. Apply a tourniquet above the site to enhance vein distention		
8. Ask the patient to make a fist to further enhance vein distention		
9. Insert the needle into the vein at a 15–30-degree angle with the bevel up		
10. Once the needle is in the vein, release the tourniquet and apply pressure to the site with gauze or a cotton ball		

11. Remove the needle and apply pressure to the site for a few minutes		
12. Dispose of the needle and syringe in a sharp's container		
13. Label the specimen with the patient's information and send it to the lab for analysis		
SKILL/ACTIVITY DESCRIBED SATISFACTORILY		
Signatures of Supervisor		

Place a **"✓"** in case box if step/task is performed satisfactorily, an **"X"** if it is not performed satisfactorily, or **N/O** if not observed.

Satisfactory: Performs the step or task according to the standard procedure or guidelines
Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

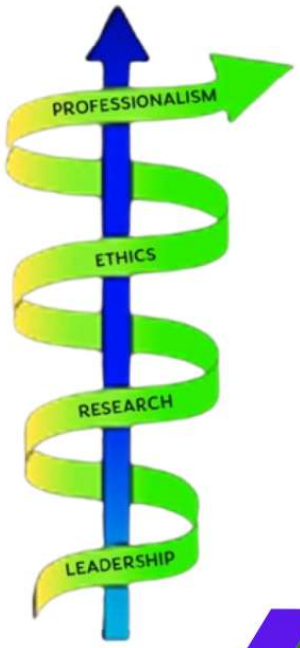
Date Observed: _____

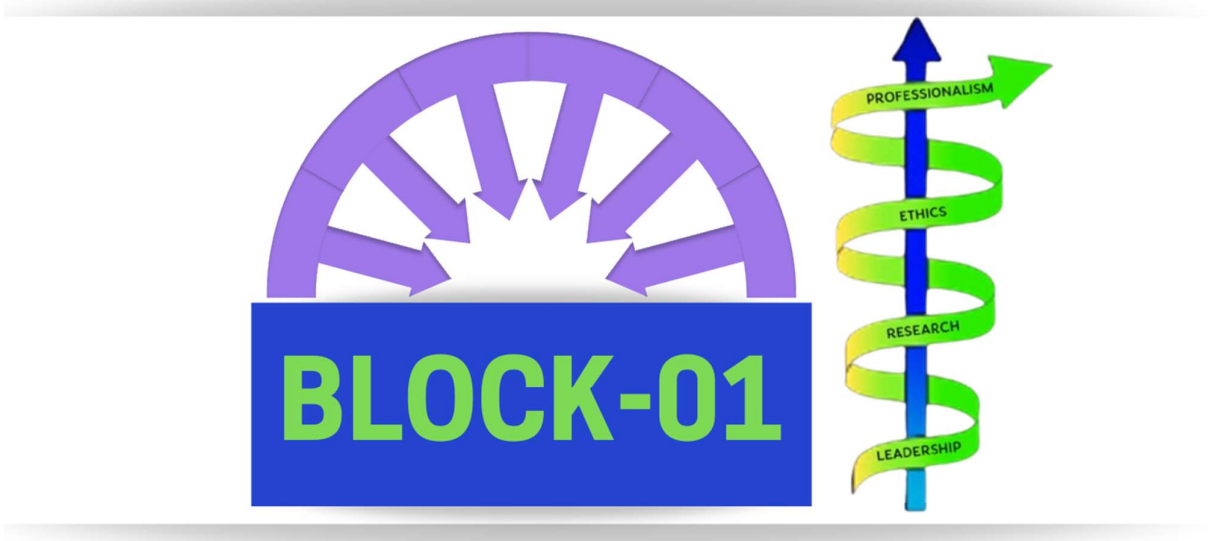
CHECKLIST FOR PALLOR **(Some of the following steps/tasks should be performed simultaneously.)**	**CASES** **(Minimum 2 Entries)**	
GETTING READY: 1. Identification of patient		
2. Presence of natural light		
SKILL/ACTIVITY OBSERVED AND DESCRIBED SATISFACTORILY		
THE PROCEDURE: 3. Obtain informed consent from the patient		
4. Examine in natural light		
EXAMINATION OF THE CONJUNCTIVA: 5. Request the patient to look upwards and simultaneously pull the lower eyelid gently downward, thereby exposing the lower palpebral conjunctiva. The lower conjunctiva has a half-moon shape and has been divided into: *i.* posterior rim: the posterior portion of the half-moon shape attached to the sclera. *ii.* anterior rim: the anterior or front portion of the half-moon shape attached to the eyelid. Normally, the anterior rim is of bright red color, in sharp contrast to the posterior rim which has relatively pale fleshy color.		
6. Report pallor (Pallor is said to be present if the anterior rim is not markedly redder as compared to the posterior rim.) (Severe pallor is considered when both, anterior and posterior rims of the palpebral conjunctivae have the same very pale fleshy color.)		

EXAMINING THE TONGUE FOR PALLOR: 7. Ask the patient to protrude the tongue and observe the dorsal surface.		
8. Report pallor (pallor is said to be present if the tongue and oral mucosa are visibly pale)		
EXAMINING THE HANDS FOR PALLOR:		
9. Holds the patient's hand gently and checks the palm, compares the color of the palm with his/her own palm.		
10. Reports pallor (severe pallor-very pale or white, some pallor-pale)		
SKILL/ACTIVITY PERFORMED SATISFACTORILY		
Signatures of Supervisor		

PERLs-I

Year-I




BLOCK-01
PROFESSIONALISM
ETHICS
RESEARCH
LEADERSHIP

ORIENTATION				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours = 10.5
Code	**Domain**	**Topic**	**Specific Learning Objectives**	**Proposed Portfolio Entry**
	Professionalism	History of Medical Profession	• Discuss the origins of Medicine in Ancient Civilizations • Explain the key Figures in Medical History (Hippocrates, Avicenna, Florence Nightingale) • Discuss modernization of Medicine and Technological Advances • Introduce the development of Medical Education and Licensing	-
		Reflective Doctor	• Discuss the concept of reflective practice and its importance in medical professionalism, including self-awareness, critical thinking, and continuous improvement. • Write a reflective entry after a learning experience, identifying key lessons, areas for improvement, and how these insights will influence their future practice.	
	Ethics	Hippocratic Oath taking	• Explain the history and Significance of the Hippocratic Oath • Discuss the importance of Professional Integrity and Moral Conduct • Explain the need for lifelong Commitment to	-

			Patient Care and Well-being • Describe ethical Principles in the Oath: Autonomy, Beneficence, Non-maleficence, and Justice	
	Research	Academic Writing Basics	• Introducing the fundamentals of academic writing, • Discuss organizing thoughts, writing basic sentences and paragraphs, and understanding the purpose of academic writing in medical education. • Discuss College Rules and Regulations for assignment writing and submission	-

	Leadership	The Doctor as a learner- Study Skills	• Time Management:
			  • Recognize the importance of planning and prioritizing tasks to make the most of available study time.
			  • Learn to break down complex tasks and schedule study sessions to optimize productivity.
			• Organization:
			  • Understand how to organize study materials, notes, and resources in a structured manner to make learning more efficient.
			  • Develop systems for tracking assignments, deadlines, and upcoming exams to
				Submit a reflection on your study skills, highlighting your personal strategies for time management, organization, and learning efficiency. Include a weekly study schedule that demonstrates how you balance academic responsibilities with self-care and well-being.

			stay on top of coursework. • Learning Efficiency: • Explore techniques for active learning, including summarization, self-testing, and spaced repetition. • Understand how to avoid common distractions and maintain focus during study sessions.	
	Leadership	Role Modelling/ Mentoring Session I	• Participate in the first mentoring session. • Introduce yourself to your assigned mentor. • Discuss their strengths and weaknesses with their mentor, receive feedback, and collaboratively create an action plan for personal and professional development	Submit a summary of your mentoring session, including feedback, areas identified for improvement, and the action plan you developed with your mentor to enhance your professional growth.
	Computer/ IT	Academic Writing-IT Skills	• Demonstrate the use of essential IT skills for academic writing, including word processing software (e.g., Microsoft Word), formatting documents, and essential editing tools to enhance the quality of academic papers. • Practice creating and formatting a simple document using a word processing tool, applying basic formatting features like headings, bullet points, and spacing to organize their writing.	

FOUNDATION-I				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				**Total Hours = 7.5**
Code	**Domain**	**Topic**	**Specific Learning Objectives**	**Proposed Portfolio Entry**
	Professionalism	Introduction of medical Professionalism	• Define Medical Professionalism • Discuss Core Values: Altruism, Accountability, Integrity • Explain Ethical Practice and Moral Responsibility Reflect on a scenario or case study that demonstrates professionalism in healthcare, identifying key behaviours and attitudes that align with professional standards	Submit a reflective entry discussing what professionalism means in the context of healthcare. Use a case or example to highlight key professional behaviours you observed or practiced.
		Responsible & Accountable Medical Student	• Understand the importance of responsibility and accountability in maintaining regularity and punctuality as core professional behaviors expected of medical students. • Demonstrating regular attendance and punctuality in academic and clinical activities, reflecting on how this consistency contributes to their professional development.	Evidence of Attendance Record.
	Ethics	Code of Conduct: Duties of healthcare professionals	• Appreciate student responsibility in following the code of conduct of the college • Review the college's code of conduct and identify key responsibilities expected of them as medical students.	Submit a reflective entry discussing the key points of the college's code of conduct and your responsibilities as a medical student. Include how adherence to these rules shapes your

			Reflect on the importance of following these guidelines in maintaining professionalism and being aware of actions for misconduct(academic, non-academic/disciplinary).	journey toward becoming a responsible healthcare professional.
	Leadership	Personal Qualities: Self Directed Learner	• Develop the ability to become a self-directed learner by setting achievable long-term and short-term goals and effectively managing time to meet academic and personal milestones. • Create a personal plan that includes both long-term and short-term academic goals and a weekly time schedule to help manage their studies and personal responsibilities.	Submit a personal learning plan outlining your long-term and short-term goals, as well as a detailed weekly time schedule. Reflect on how this plan will support your academic success and personal development as a self-directed learner
		Verbal Communication	• Develop effective verbal communication skills, focusing on clear and concise communication in academic, clinical, and team-based settings to enhance collaboration and leadership abilities. • Practice delivering clear and concise verbal explanations of medical concepts or tasks during group activities, focusing on tone, clarity, and engagement with peers	Submit a reflection on a group activity where you practiced verbal communication skills. Highlight how you conveyed information clearly and effectively, and reflect on areas where you can improve your verbal communication in academic or clinical settings.

HEMATOPOETIC & LYMPHATIC				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				**Total Hours =03**
Code	**Domain**	**Topic**	**Specific Learning Objectives**	**Proposed Portfolio Entry**
	Research	Structure of a Manuscript	• Discuss the basic structure of a research manuscript using the IMRAD format (Introduction, Methods, Results, and Discussion) and its importance in scientific writing. • Identify various components of a given research manuscript using the IMRAD structure,	Submit the identified components on the manuscript.
	Leadership	Non-Verbal Communication	• Discuss the role of non-verbal communication, including body language, facial expressions, and gestures, in effectively conveying messages and building rapport in healthcare settings • Practice using appropriate non-verbal communication during simulated patient interactions or group discussions, such as eye contact, posture, and active listening cues.	Submit a reflection on a group activity or simulated interaction where you consciously used non-verbal communication to enhance the interaction. Discuss how it impacted your ability to lead or communicate effectively

Volume:01

STUDENT

Portfolio

university of
Health Sciences
Lahore

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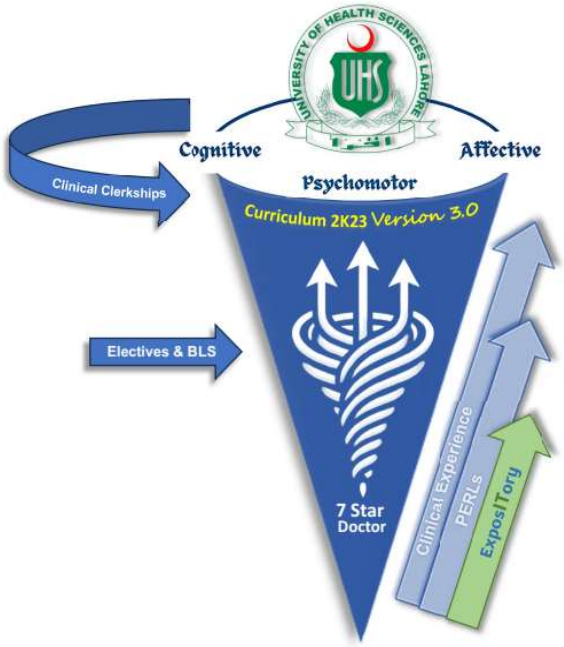


MODULE: ORIENTATION

DATE FROM: _____

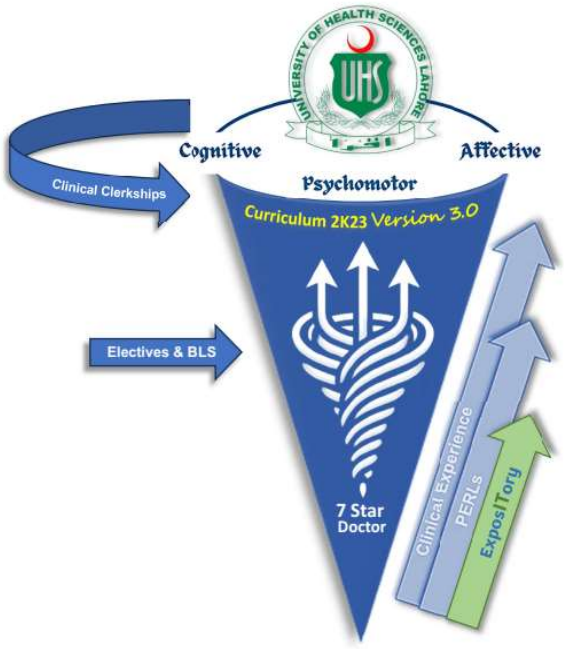
DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a reflection on your study skills, highlighting your personal strategies for time management, organization, and learning efficiency. Include a weekly study schedule that demonstrates how you balance academic responsibilities with self-care and well-being.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a summary of your mentoring session, including feedback, areas identified for improvement, and the action plan you developed with your mentor to enhance your professional growth.	
Facilitator Remarks:	

Curriculum 2K23 Version 3.0



MODULE: FOUNDATION-I

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a reflective entry discussing what professionalism means in the context of healthcare. Use a case or example to highlight key professional behaviours you observed or practiced.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a reflective entry discussing what professionalism means in the context of healthcare. Use a case or example to highlight key professional behaviours you observed or practiced.	
Facilitator Remarks:	

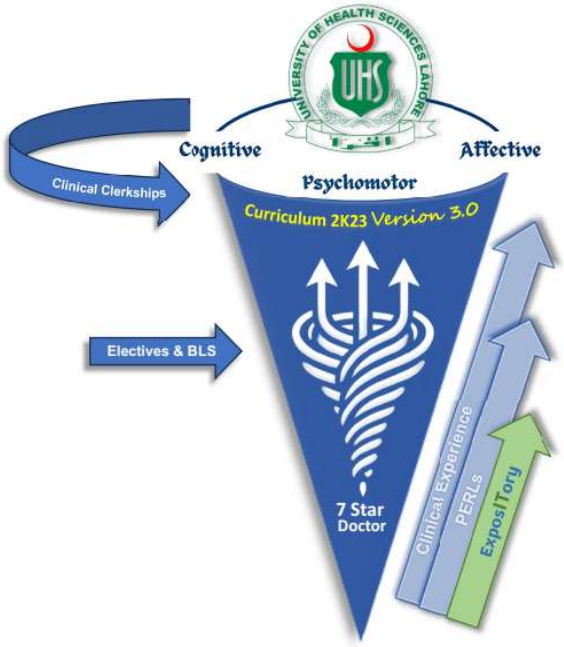
Roll No:	
Assignment Topic:	
Date:	
Submit a reflective entry discussing the key points of the college's code of conduct and your responsibilities as a medical student. Include how adherence to these rules shapes your journey toward becoming a responsible healthcare professional.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a personal learning plan outlining your long-term and short-term goals, as well as a detailed weekly time schedule. Reflect on how this plan will support your academic success and personal development as a self-directed learner	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a reflection on a group activity where you practiced verbal communication skills. Highlight how you conveyed information clearly and effectively, and reflect on areas where you can improve your verbal communication in academic or clinical settings.	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Evidence of Attendance Record.	
Facilitator Remarks:	

Curriculum 2K23 Version 3.0



MODULE: HEAMTOPOIETIC & LYMPHOID-I

DATE FROM: _____

DATE TO: _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit the identified components on the manuscript	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	
Date:	
Submit a reflection on a group activity or simulated interaction where you consciously used non-verbal communication to enhance the interaction. Discuss how it impacted your ability to lead or communicate effectively	
Facilitator Remarks:	

Block-1 Coordinators

BIOCHEMISTRY

Dr. Tabinda
Sr. Lecturer
Office: AP Office Biochemistry, Academic block1, First Floor
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

ANATOMY

Dr. Aqiba
Assistant Professor of Anatomy
Office: Anatomy Department Academic block 1, First Floor
Office Hours: Monday to Friday from 0800Hours till 1500Hours

PHYSIOLOGY

Dr. Omar Shamim
Professor of Physiology
Office: Physiology Department, Academic block 1, Ground Floor
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

PATHALOGY

Prof. Dr. Qamar Aziz
HOD/Professor of Pathology
Office: HOD Office Pathology, Academic block 2, Ground Floor
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

COMMUNITY MEDICINE

Dr. Arooj
Lecturer Community Medicine
Office: Community Medicine, Academic block1,First Floor
Office Hours: Monday to Friday from 0800 Hours till 1500 Hours

BEHAVIOUR SCIENCES

Dr. Rubab Waseem
Senior Lecturer Behavioural Sciences
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

PHARMACOLOGY

Dr. Maira Arif
Lecturer Pharmacology
Office: Departmet of Pharmacology, Academic block2, First Floor
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

CFRC

Dr. Sikandar
Office: Departmet of Medicine,
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

PERLs

Dr. Anum
Lecturer Medical Education
Office: Departmet of Medical Eduction,
Office Hours: Monday to Friday from 0800 Hours till 1500Hours

IMPORTANTNOTE

To be able to sit in Annual Exam

85% attendance and at least 50% in internal assessment is mandatory

DISCLAIMER

This module guide may be subject to changes and students should stay updated through official communication chang