STUDY GUIDE

BLOCK 3

INTEGRATED MODULER SYSTEM

ACADEMIC SESSION. 2023

1ST YEAR MBBS

RAHBAR MEDICAL AND DENTAL COLLEGE

LAHORE

Table of Contents

List of Abbreviations

1. A	**Anatomy**
2. Ag	**Ageing**
3. B	**Biochemistry**
4. BS	**Behavioral Sciences**
5. C	**Civics**
6. CSF	**Clinical Skills Foundation**
7. CM	**Community Medicine**
8. CVS	**Cardiovascular System**
9. ENT	**Ear Nost and Throat**
10. FM	**Forensic Medicine**
11. GO	**Gynecology and Obstetrics**
12. H & L	**Hematopoietic and Lymphatic**
13. IMS	**Integrated Modular System**
14. LGIS	**Large Group Interactive Session**
15. M	**Medicine**
16. MSK	**Musculo Skeletal**
17. O	**Ophthalmology**
18. P	**Physiology**
19. Pa	**Pathology**
20. Pe	**Pediatrics**
21. PERL	**Professionalism Ethics Research Leadership**
22. Ph	**Pharmacology**
23. Psy	**Psychiatry**
24. QI	**Quran and Islamiat**
25. RMDC	**Rahbar Medical and Dental College**
26. RS	**Respiratory System**
27. S	**Surgery**
28. SDL	**Self Directed Learning**
29. SGD	**Small Group Discussion**
30. UHS	**University of Health Sciences**

INTEGRATED MODULAR SYSTEM

Dear student's purpose of developing a new curriculum is to prepare competent, empathetic and efficient medical graduates that can provide standardized quality care to ailing humanity. To achieve this goal a modular integrated curriculum is developed to align MBBS Program Outcomes with that of Seven Star Doctors competencies.

SEVEN STAR DOCTORS

The expected generic competencies in a medical graduate are as follows:

No.	Competencies	Expectations
1	**Skillful**	Competent medical graduates require sound clinical skills grounded in knowledge of patient-centered care.
2	**Knowledgeable**	This embodies knowledge of basic medical and clinical sciences required for the practice of medicine.
3	**Community Health Promoter**	To deal with problems of population-based primary health care, including health promotion and disease prevention of vulnerable populations
4	**Clinical Thinker**	The ability to critically evaluate existing knowledge, technology, and information, and to be able to reflect on it, is necessary for solving problems.
5	**Professional**	Competent medical graduates require professional values, attitudes and behaviors that embody good medical practice i.e., life-long learning, altruism, empathy, cultural and religious sensitivity, honesty, accountability, probity, ethics, communication skills, and working in teams.
6	**Scholar**	The medical graduates are expected to demonstrate constructive criticism, a spirit of enquiry, creativity and a research-oriented attitude.
7	**Leader and Role Model**	The medical graduates are expected to demonstrate exemplary conduct and leadership potential.

INTRODUCTION TO STUDY GUIDE

This document, which is also labeled as study guide that can provide students an important resource in managing their own learning. Studying is a managed way is important for educational development and also builds personal skills. Good study skills can improve your confidence, competence, and self-esteem as well as helps reduce stress and anxiety around deadlines and exams. Creating a study guide is one of the best ways to prepare for an exam and improve your results. this guide will have important resources that will help you in preparing notes and summarizing your lectures precisely. Your study guide is more than just a collection of your notes from class. It's a personal study tool, customized to fit your unique learning style and studying routine. You can prepare your own self learning schedule from the information shared in this study guide, which will facilitate you in preparing for Block Examination and ultimately for your annual examination. This study helps both teachers and student directly in preparing and managing their learning activities while indirectly facilitating the other stakeholders like parents to keep an observer eye on their child studies and college activities, medical education department to coordinating and effectively achieving learning objectives and outcomes, administration to arrange resources as per requirement of each year.

BLOCK 3
CARDIOVASCULAR MODULE 1

MODULAR OUTCOMES:

1. Describe the normal structure of heart including development, topographical anatomy, neurovascular supply, and histology.

2. Review the arrangement of circulatory system (arteries, veins, lymphatics).

3. Define the congenital anomalies of cardiovascular system with reference to normal development and early circulation.

4. Define functions of cardiac muscle along with its properties

5.Interpret pressure changes during cardiac cycle along with regulation of cardiac pumping.

6. Interpret normal & abnormal ECG, ST-T changes, and its abnormalities.

7. Identify the risk factors and role of lipids in coronary blockage and atherosclerosis (hyperlipidemia/ dyslipidemia).

8. Define cardiac output and its modulating/controlling factors.

9. Differentiate left and right sided heart failure and correlate it with the importance of pressure differences.

10. Enumerate different types of arrhythmias and describe the electrical events that produce them.

11.Discuss the psychosocial impact of cardiovascular diseases in society.

GROSS ANATOMY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 14	
CV-A001	● Define mediastinum giving its boundaries and compartments. List the contents of its various compartments.	**Human Anatomy**	**Mediastinum**
	● Justify the clinical picture of superior mediastinum syndrome anatomically	**Integrate with Surgery**	
	● Describe the formation, tributaries, and termination of superior vena cava ● Describe the formation, branches, and relations of ascending aorta, aortic arch and descending thoracic aorta. ● Discuss the distribution of ascending aorta, aortic arch and descending thoracic aorta in reference to their branches ● Describe formation, course and tributaries of azygous, hemizygous and accessory hemizygous veins. ● Describe the course, relations, and distribution of vagus and thoracic splanchnic nerves in relation to nerve supply of heart.	**Human Anatomy**	
CV-A002	● Describe the pericardial cavity mentioning transverse and oblique sinuses. Discuss their clinical significance	**Human Anatomy**	**Pericardium**
	● Describe the surgical significance of pericardial sinus	**Integrate with Surgery**	
	● Describe the anatomical correlates of pericardial rub, pericardial pain, pericarditis, pericardial effusion, and cardiac tamponade. ● Describe the anatomical basis for pericardiocentesis.	**Integrate with Medicine**	
	● Describe the external features of heart. ● List various chambers of heart mentioning their salient features and openings. ● Describe the arterial supply of heart: coronary arteries and their distribution with special emphasis on collaterals established during ischemia. ● Describe the sites of anastomosis between right and left coronary arteries with the participating vessels.	**Human Anatomy**	

CV-A003	● Discuss the anatomical correlates of cardiac arterial supply ● Describe the anatomical basis for cardiac catheterization	**Integrate with cardiology/ Medicine**	**Heart**
	● Describe the anatomical correlates of electrocardiography, heart block, atrial fibrillation, artificial cardiac pacemaker, cardiac referred pain	**Integrate with Medicine**	
	● Describe the anatomical basis for echocardiography, coronary angiography, angioplasty, and coronary grafts ● Describe the features of angina pectoris and myocardial infarction and correlate them anatomically	**Integrate with Cardiology/ Medicine**	
	● Describe the venous drainage of heart. ● Describe the alternative venous routes to the heart ● Identify the vessels supplying the heart with their origins/terminations ● Describe the Lymphatics of heart ● Describe the formation, relations, and distribution of cardiac plexus. ● Describe components and significance of fibrous skeleton of heart ● Describe the cardiac valves	**Human Anatomy**	
	● Explain the anatomical basis for valvular heart diseases	**Integrate with Cardiology/ Medicine**	
	● Perform surface marking of various anatomical landmarks of heart and great vessels	**Human Anatomy**	
	● Perform percussion and auscultation of heart	**Integrate with Medicine**	
	● Identify the salient features of heart and great vessels on CT/ MRI	**Integrate with Radiology**	
CV-A004	● Describe the surgical importance of pericardial sinus	**Surgery**	**Pericardial Sinus**
CV-A005	● Discuss the anatomical principles of Varicose Veins	**Surgery**	**Varicose Veins**

EMBRYOLOGY & POST-NATAL DEVELOPMENT			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 01	
CV-A006	● Describe the early development of heart and blood vessels.	**Human Embryology**	**Introduction**
CV-A007	● Define parts of primitive heart tube and give its folding ● Describe the development of various chambers of heart with emphasis on their partitioning ● Identify various parts of developing heart tube and structures derived from them during embryonic and fetal life (Models and specimens)	**Human Embryology**	**Development of Heart**
CV-A7a	● Describe the embryological basis of dextrocardia and ectopia cordis ● Describe the partitioning of primordial heart: atrioventricular canal and atrium ● Describe the development of sinus venosus ● List clinically significant types of atrial septal defects along with their embryological basis and features. Describe probe patent foramen ovale	**Integrate with Pediatrics**	**Development of Heart and Development of Lymphatic System**
	● Describe the partitioning of truncus arteriosus and bulbus cordis ● Describe the formation of ventricles and interventricular septum	**Human Embryology**	
CV-A008	● Describe the clinical features and embryological basis of ventricular septal defects	**Integrate with Pediatrics**	
	● Describe the development of cardiac valves and conducting system.	**Human Embryology**	
	● Describe the development of lymphatic system	**Human Embryology**	
CV-A009	● Describe the embryological correlates and clinical presentation of developmental defects of heart: Tetralogy of Fallot, Patent ductus arteriosus, Unequal division of arterial trunks, Transposition of great vessels and Valvular stenosis, Coarctation of aorta	**Integrate with Pediatrics**	**Development of Arteries**
	● Describe the formation and fate of pharyngeal arch arteries	**Human Embryology**	
	● Describe the anomalies of great arteries emerging from heart: Coarctation of aorta, anomalous arteries	**Integrate with Cardiology/ Medicine**	
CV-A010	● Describe the development of embryonic veins associated with developing heart: Vitelline veins,	**Human Embryology**	**Development of Veins**

	Umbilical Veins and Common cardinal vein and their fate ● Describe the formation of superior & inferior vena cava and portal vein with their congenital anomalies ● With the help of diagrams illustrate the development of superior vena cava, inferior vena cava and portal vein		
CV-A011	● List the derivatives of fetal vessels and structures: Umbilical vein, ductus venosus, umbilical artery, foramen ovale, ductus arteriosus	**Human Embryology**	**Fetal Vessels & Circulation**
	● Describe Fetal and neonatal circulation mentioning transitional neonatal circulation with its clinical implication	**Integrate with Pediatrics/ Ob/gyn**	
CV-A012	● List clinically significant types of atrial septal defects along with their embryological basis and features. Describe patent foramen ovale ● Describe the embryological correlates and clinical presentation of developmental defects of heart: Tetralogy of Fallot, Persistent ductus arteriosus, Unequal division of arterial trunks, Transposition of great vessels and Valvular stenosis	**Pediatrics**	**Congenital Heart Defects**
MICROSCOPIC ANATOMY (HISTOLOGY & PATHOLOGY)			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 4	
CV-A013	● Describe the microscopic and ultramicroscopic structure of cardiac muscle emphasizing on Ttubules, sarcoplasmic reticulum and intercalated discs. ● Identify, draw and label histological structure of cardiac muscle	**Histology**	**Cardiac Muscle**
CV-A014	● Describe general histological organization of blood vessels: Tunica intima, media and adventitia. ● Identify, draw and label histological sections of elastic artery, muscular artery, arterioles, vein, capillaries and sinusoids	**Histology**	**Blood Vessels Organization**
CV-A015	● Describe histological features of arteries: Muscular arteries, elastic arteries, Arterioles	**Histology**	**Arteries**
CV-A016	● Describe histological features of veins and exchange vessels: large veins, medium sized veins, venules, Capillaries, and sinusoids ● Compare and contrast the light microscopic structure of arteries and veins	**Histology**	**Veins**

CV-A017	● Describe the histopathological basis of thrombus and embolus formation.	**Integrate with Pathology**	**Thrombus/ Embolus Formation**
CV-A018	● Explain the histological basis of arteriosclerosis and atherosclerosis	**Histology**	**Arteriosclerosis Atherosclerosis**
CV-A019	● Describe role of arterioles in hypertension		**Hypertension**
HISTOLOGY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 3	
CV-A020	● **Identify, draw and label histological structure of cardiac muscle**	**Histology**	**Histological Features of Cardiac Muscle**
CV-A021	● **Identify, draw and label histological sections of elastic artery, muscular artery, arterioles, vein, capillaries and sinusoids**	**Histology**	**Histological Features of Blood Vessels**
MEDICAL PHYSIOLOGY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 75	
CV-P001	● Explain the physiological anatomy of cardiac muscle. ● Explain the functional importance of intercalated discs. ● Discuss the properties of cardiac muscles. ● Describe and draw the phases of action potential of ventricle. ● Describe and draw the phases of action potential of SA node along with explanation of the mechanism of self excitation/ Auto rhythmicity of SA node. ● Define and give the duration of the Absolute and relative refractory period in cardiac muscle ● Draw & explain pressure & volume changes of left ventricle during cardiac cycle. ● Explain & draw relationship of ECG with cardiac cycle. ● Explain & draw the relationship of heart sounds with cardiac cycle. ● Enlist, draw, and explain the physiological basis of atrial pressure waves in relation to cardiac cycle.	**Physiology**	**Cardiac Muscle**
	● Define & give the normal values of the cardiac output, stroke volume, end diastolic volume & end systolic volume	**Integrate with Medicine**	

CV-P002	● Describe the Frank starling mechanism. ● Describe the autonomic regulation of heart pumping. ● Describe the effect of potassium, calcium ions & temperature on heart function. ● Define chronotropic effect- positive and negative. ● Define the inotropic effect: positive and negative. ● Define dromotropic effect: positive and negative ● Describe the location of adrenergic & cholinergic receptors in heart. ● Name the receptors present in coronary arterioles. ● Explain sympathetic & parasympathetic effects on heart rate & conduction velocity	**Physiology**	**Regulation of heart pumping**
CV-P003	● Draw and explain the conducting system of heart ● Describe the physiological basis and significance of AV nodal delay.	**Physiology**	**Conducting System of Heart**
	● Explain the ectopic pacemaker	**Integrate with Cardiology/ Medicine**	
CV-P004	● Enlist, draw, and explain the physiological basis & give durations of waves, intervals, and segments of normal ECG ● Describe the standard limb leads, Augmented limb leads & precordial leads. ● Define the standard limb leads, Augmented limb leads & precordial leads. ● Explain the physiological basis of upright T wave in normal ECG. ● Describe the location and significance of J point in ECG ● Explain the physiological basis of current of injury. ●	**Physiology**	
	● Enlist the ECG changes in myocardial infarction. ● Plot the mean cardiac axis. ● Enlist the physiological & pathological causes of right axis deviation of heart. ● Enlist the physiological & pathological causes of left axis deviation of heart ● Describe the abnormalities of T wave and their causes.	**Physiology**	
	● Describe the abnormalities of T wave and their causes	**Integrate with Medicine**	
CV-P005	● Describe the effect of hypokalemia and hyperkalemia on ECG ● Describe the effect of hypocalcemia and hypercalcemia on ECG	**Integrate with Biochemistry**	**Effect of electrolyte on ECG**

CV-P006	● Define tachycardia and enlist its causes. ● Define bradycardia and enlist its causes.	**Integrate with Medicine**	**Cardiac Arrhythmia**
	● Classify arrhythmias ● Explain the physiological basis of sinus arrythmia. ● Explain the physiological basis of reflex bradycardia in Athletes. ● Explain the carotid sinus syndrome	**Physiology**	
	● Enlist the causes of atrioventricular block ● Explain the types of atrioventricular blocks. ● Explain the ECG changes in 1st, 2nd & 3rd degree heart block	**Integrate with Cardiology/ Medicine**	
	● Explain the cause, physiological basis & ECG changes in Stokes Adam syndrome/ventricular escape	**Physiology**	
	● Enlist the causes of premature contractions. ● Explain the causes and ECG changes of premature atrial contractions	**Integrate with Cardiology/ Medicine**	
	● Explain the physiological basis of pulses deficit.	**Physiology**	
	● Enlist the causes and ECG findings in Long QT syndrome ● Explain the causes, physiological basis, features, ECG changes & management of ventricular fibrillation. ● Explain the causes, physiological basis, features & ECG changes of atrial fibrillation	**Integrate with Cardiology/ Medicine**	
	● Explain the physiological basis, features & ECG changes of atrial flutter.	**Physiology**	
	● Compare Flutter and Fibrillations	**Physiology**	
CV-P007	● Explain the functional parts of circulation (arteries, arterioles, capillaries, veins, venules).	**Physiology**	**Organization of Circulation**
CV-P008	● Explain the pressures in systemic & pulmonary circulation. ● Explain the types of Blood flow and significance of Reynolds number	**Physiology**	**Blood flow**
CV-P009	● Discuss acute local control of local blood flow. ● Discuss acute humoral control of local blood flow. ● Explain long term control of local blood flow. ● Name the organs in which auto regulation of blood flow occurs during changes in arterial pressure (metabolic & myogenic mechanisms).	**Physiology**	**Local & Humoral Control of Blood Flow**
CV-P010	● Explain the role of autonomic nervous system for regulating the circulation. ● Explain the vasomotor center. Explain the control of vasomotor center by higher nervous centers. Explain emotional fainting/vasovagal syncope. Identify vessels constituting micro-capillaries.		**Nervous Regulation of Circulation**

	Enumerate hydrostatic and osmotic factors that underline starlings Hypothesis for capillary function.	**Physiology**	
CV-P01	● Explain the role of nervous system in rapid control of arterial blood pressure ● Explain the regulation of arterial blood pressure during exercise. ● Enlist different mechanisms for short term regulation of arterial blood pressure. ● Explain the role of baroreceptors in regulation of arterial blood pressure. ● Explain the role of chemoreceptors in regulation of arterial blood pressure. ● Make a flow chart to discuss the role of Atrial volume reflexes/ Bainbridge reflex in control of blood pressure. ● Make a flow chart to show the reflex responses to increased blood volume which increase blood pressure and atrial stretch. ● Describe the role of CNS ischemic response in regulation of the blood pressure. ● Explain the Cushing reflex ● Explain the role of abdominal compression reflex to increase the arterial blood pressure.	**Physiology**	**Rapid control of Arterial Blood Pressure**
CV-P012	● Make a flow chart to discuss the role of renin angiotensin system for long term control of blood pressure ● Make a flow chart to show the regulation of blood pressure in response to increase in ECF volume.	**Physiology**	**Role of kidneys in long term Regulation of Arterial Blood Pressure**
CV-P013	● Define cardiac output, cardiac index & venous return with their normal values ● Explain the pathological causes of high & low cardiac output. ● Discuss the factors regulating cardiac output ● Discuss factors regulating venous return	**Integrate with Cardiology/ Medicine**	**Cardiac Output**
CV-P014	● Explain the regulation of skeletal muscle blood flow at rest & during exercise	**Physiology**	**Skeletal muscle Circulation**
CV-P015	● Explain the physiological anatomy of coronary circulation. ● Explain the regulation of coronary blood flow ● Explain the physiological basis of angina, myocardial & subendocardial infarction	**Physiology**	**Coronary Circulation**
CV-P016	● Define & enlist different types of shock	**Physiology**	

	● Explain the causes, features, and pathophysiology of hypovolemic/hemorrhagic shock. ● Explain the causes, features, and pathophysiology of septic shock. ● Explain the causes, features, and pathophysiology of neurogenic shock Explain the causes, features, and pathophysiology of anaphylactic shock	**Integrate with Pathology**	**Circulatory Shock**
	● Discuss the treatment of different types of shock.	**Integrate with Medicine**	
	● Explain the different stages of shock ● Explain the mechanisms that maintain the cardiac output & arterial blood pressure in non-progressive shock. ● Enlist different types of positive feedback mechanisms that can lead to the progression of shock.	**Physiology**	
CV-P017	● Enlist the different types of heart sounds and explain the physiological basis of each. ● Enlist the causes of 3rd and 4th heart sounds. ● Explain the causes & physiological basis of murmurs caused by valvular lesions	**Physiology**	**Heart Sounds**
	● Enumerate abnormal heart sounds and describe the physiological basis of each	**Integrate with Medicine**	
CV-P018	● Classify different types of heart failure ● Discuss the signs and symptoms of Heart failure. ● Discuss the management of Heart failure.	**General Medicine/ Cardiology**	**Heart Failure**
CV-P019	● Discuss the signs and symptoms of: Arrhythmias. ● Discuss the management of Arrhythmias		**Arrhythmias**
CV-P020	● Enlist various categories of ischemic heart diseases ● Discuss the signs and symptoms of ischemic heart diseases ● Discuss the management of ischemic heart diseases. ● Discuss the signs and symptoms of: Hypertension		**Ischemic Heart Disease (IHD)**
CV-P021	● Discuss the management of Hypertension		**Hypertensio n**
CV-P022	● Enlist various valvular heart diseases ● Identify presentations and signs and symptoms of valvular heart diseases ● Outline management strategies		**Valvular Heart Diseases**
CV-P023	● Identify various pericardial diseases ● Identify presentations and signs and symptoms ● Outline management strategies	**General Medicine/ Cardiology**	**Pericardial Diseases**

CV-P024	● Identify various endocardial and myocardial diseases ● dentify presentations and signs and symptoms ● Outline management strategies	**General Medicine/ Cardiology**	**Endocardial and Myocardial Diseases**
CV-P025	● Define Peripheral arterial diseases ● Identify symptoms and signs of PAD ● Outline management strategies	**General Medicine**	**Peripheral Arterial Diseases (PAD)**
CV-P026	● Enlist various sites of venous thromboembolism ● Identify various symptoms and signs of DVT ● Identify various symptoms and signs of pulmonary embolism ● Outline management strategies	**General Medicine, Surgery**	**Venous thromboembolism**
CV-P027	● dentify the salient features of heart and great vessels on CT/ MRI ● Discuss the principles of cardiac catheterization	**Radiology**	**Imaging in CVS Disorders**
CV-P028	● Justify the clinical picture of superior mediastinum syndrome anatomically	**Surgery**	**Superior mediastinum Syndrome**
CV-P029	● Describe Fetal and neonatal circulation mentioning transitional neonatal circulation with it clinical implication	**Pediatrics, Obgyn**	**Fetal circulation at Birth**
CV-P030	● Psychological basis of emotional fainting and its impact	**Behavioral Sciences**	**Emotional Fainting**
MEDICAL BIOCHEMISTRY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 30	
CV-B001	● Classify lipids.	**Biochemistry**	**Classificatio n of Lipids**
CV-B002	● Discuss the biomedical functions & properties of lipids	**Biochemistry**	**Functions of lipids & Properties of Lipids**
CV-B003	● Classify fatty acids. Discuss the role of trans saturated, saturated, poly- and mono-unsaturated fatty acids in diet on lipid profile	**Biochemistry**	**Classification of Fatty Acids**
CV-B004	● Explain the biochemical and therapeutic roles of eicosanoids (prostaglandins, leukotrienes, thromboxane, and prostacyclin)	**Biochemistry**	**Eicosanoids**

CV-B005	● Describe the types, structure, biomedical importance of Lipoproteins ● Discuss the synthesis, transport and fate of Lipoproteins	**Biochemistry**	**Circulation Lipoproteins**
CV-B006	● Interpret the disorders associated with impairment of lipoprotein metabolism especially atherosclerosis and LDL oxidized	**Biochemistry**	**Hyperlipidem ias**
CV-B007	● Explain the sources, properties, and biomedical role of cholesterol ● Describe the reactions of cholesterol biosynthesis Cholesterol and its regulation & fate ● Discuss Genetic basis of the Hypercholesterolemia	**Biochemistry**	**Cholesterol**
CV-B008	● Describe enzymes with reference to: a) Active sites b) Specificity c) Catalytic efficiency d) Cofactor e) Coenzyme f) Holoenzyme g) Apoenzyme h) Prosthetic group i) Zymogens Location	**Biochemistry**	**Hypercholest erolemia**
CV-B009	● Classify enzymes according to the reaction they catalyze. ● Explain the mechanism of enzyme action from reactants to products (catalysis). a) Illustrate enzyme kinetics in relation to MM Equation & Lineweaver- Burke plot ● Discuss the effect of various factors (with special reference to Km/V max) on enzymatic activity. a) Substrate concentration b) Temperature c) PH d) Enzyme concentration ● Explain the regulation of enzymatic activity. a) Compare allosteric regulation with regulation by covalent modification. b) Discuss the effect of inhibitors on enzymatic activity which includes: Competitive inhibition Uncompetitive inhibition c) Interpret the effect of organophosphorus poisoning on enzyme activity on basis of given data	**Integrate with Medicine/ Cardiology**	**Enzymes**

	● Explain the application of enzyme in clinical diagnosis and therapeutic use		
CV-B010	● Discuss the signs and symptoms of hyperlipidemia ● Interpret data related to hyperlipidemia	**Biochemistry / Medicine**	**Type I to V Hyperlipidemias**
MEDICAL BIOCHEMISTRY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 10+8=18	
CV-P031	● Record an electrocardiogram by correct lead placement and connections	**Physiology**	**ECG**
CV-P032	● Perform auscultation of chest to recognize normal heart sounds.		**Heart Sounds**
CV-P033	● Examine neck veins to determine Jugular Venous Pulse.		**JVP**
CV-P034	● Examine arterial pulse to recognize normal characteristics of pulse.		**Arterial Pulse**
CV-B011	● Perform estimation of Cholesterol by kit method	**Biochemistry**	**Cholesterol Estimation**
CV-B012	● Perform estimation of HDL, LDL		**HDL, LDL Estimation**
CV-B013	● Estimation of cardiac markers		**Cardiac Marker Estimation**
CV-B014	● Interpret lab reports based on enzymes for diseases like cardiac disorders and hyperlipidemias		**Interpretation of Lab Report**
AGING			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
	AGING	**TOTAL HOURS = 5**	
CV-Ag 001	● Discuss the effect of age on blood vessels with reference to hypertension	**Physiology/ Geriatrics/ Medicine**	**Hypertension**
CV-Ag 002	● Discuss the risk of cardiac attack in old age and weather conditions		**Cardiac Attack**
CV-Ag 003	● Discuss the effect of age on valvular system of the heart.		**Valvular Diseases**
CV-Ag 004	● Discuss the effect of age on neural conduction of the heart in relation to arrythmia.		**Arrythmia**
CV-Ag 005	● Discuss the protective role of female hormone against CVS diseases in women of reproductive age group	**Physiology/ Obstetrics and Gynecology**	**Role of Female Hormone on CVS Disease**

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 5+5=10	
CV-Pa 001	● Classify types of thrombosis, embolism, and infarction	**Pathology**	**Hemodynamics and CVS**
CV-Pa 002	● Discuss the pathophysiology of thrombosis, embolism, and infarction		**Atherosclerosis**
CV-Pa 003	● Identify the types and causes of hypertension		**Hypertension**
CV-Pa 004	● Discuss the pathophysiology of atherosclerosis, hypertension, and shock		**Shock**
CV-Pa 005	● Discuss the clinical consequences of hypertension and atherosclerosis ● Classify the types of heart failure ● Identify the causes leading to heart failure		**Cardiac Failure**
CV-Pa 006	● dentify the types of ischemic heart disease ● Discuss the pathophysiology of different types of ischemic heart disease		**Ischemic Heart Disease**
CV-Pa 006	● Identify the types of ischemic heart disease ● Discuss the pathophysiology of different types of ischemic heart disease	**Pharmacology**	**Ischemic Heart Disease**
CV-Ph 001	● Outline the pharmacological concepts of drugs used in hypertension.		**Antihypertensive drugs**
CV-Ph 002	● Outline the pharmacological concepts of drugs used in angina.		**Antianginal Drugs**
CV-Ph 003	● Outline the pharmacological concepts of drugs used in arrhythmias		**Antiarrhyth mics drugs**
CV-Ph 004	● Outline the pharmacological concepts of drugs used in cardiac failure		**Drugs for Cardiac Failure**
CV-Ph 005	● Outline the pharmacological concepts of drugs used in peripheral vascular diseases.		**Drugs for Peripheral Vascular Diseases**
DISEASE PREVENTION & IMPACT			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 15	
CV-CM001	● Describe the various strategies and models to prevent diseases		**Disease Prevention Models**
CV-CM 002	● Describe primordial prevention and its application to preventing CVS diseases. ● Depict the concept of primary prevention in context to CVS and able to apply on CVS diseases.		
CV-CM 003	● Discuss the basic concept of health promotion and its application to CVS.		**Health Promotion**

CV-CM 004	●	**Community Medicine and Public Health**	**Behavioral Change Intervention**
CV-CM 005	● To apply secondary and tertiary preventions on CVS diseases (coronary heart disease, ischemic heart disease, hypertension)		**Secondary & Tertiary Prevention**
CV-CM 006	● Describe the concept of cardiovascular diseases as non-communicable diseases		**Noncommunicable Disease**
CV-CM 007	● Identify the risk factors in the community for CVS diseases. ● Learn and apply interventions to prevent the risk factors in community.		**Risk factor Assessment of CVS Diseases**
CV-BhS 001	● Identify and deal with the various psychosocial aspects of Cardiovascular conditions (such as Hypertension, Coronary artery disease, Heart failure, Arrythmias, and other cardiovascular conditions) on Individual, Family and Society.	**Behavioral Sciences**	**Personal, Psychosocial and Vocational Issues**

Cardiovascular Planner

Weekly Planner

1 Year MBBS (Session 2022-23) CVS

WEEK – 1 Theme: Introduction to CVS

Date 04 Sept to 08 Sept 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 4 Sept 23	LGIS Biochemistry Classification of lipids CV-B-001 Prof.Dr. Azam Ali	LGIS Physiology CV-P-007,008 *Prof. Dr. Iram Qamar*	B R E A K	LGIS **Anatomy SH CV-A-013,014,015 *HOD**	LGIS **Physiology CV-P-009** Dr Salma Rizwan	SGD **Anatomy Gross Superior Mediastinum CV-A-001 *HOD**	Practicals Histology (A) Physiology (B) Biochemistry (C)	S D L
Tuesday 5 Sept 23	LGIS **Physiology CV-P-009** Dr. Jabeen Raza	LGIS **Anatomy SE** CV-A-006,007 Prof. Dr. Attiya Mubarak		LGIS **Biochemistry function and properties of lipids CV-B-002** *Prof. Dr. Azam Ali*	LGIS **Physiology CV-P 010 Prof. Dr. Iram Qamar**	SGD **Anatomy Gross** Posterior Mediastinum *CV-A-001 *HOD*	Practicals Histology (B) Physiology (C) Biochemistry (A)	
Wednesday 6 Sept 23	LGIS **Biochemistry Classification of fatty acids CV-B-003** *Prof. Dr. Azam Ali*	LGIS **Anatomy SE CV-A-007 Prof. Dr. Attiya Mubarak**		LGIS **Physiology CV-P 001** *Prof. Dr. Rafique Ahmed Khan*	LGIS **PERL** PERLs 002 Communication skills *HOD	LGIS **Physiology 010** Dr. Salma Rizwan	Practicals Histology (C) Physiology (A) Biochemistry (B)	
Thursday 7 Sept 23	LGIS **Biochemistry Effects of dietry lipids on lipid profile CV-B-003 Prof. Dr. Azam Ali**	LGIS **Pathology CV-Pa-001** Hemodynamics and CVS *H.O.D		LGIS Physiology CV-P-001 *Prof. Dr. Rafique Ahmed Khan*	LGIS Community Medicine *CV -CM- 001 Disease prevention model *HOD*	LGIS Physiology Tutorial *HOD	**1:15pm-2:15pm** Physiology Tutorial *HOD / **2:15pm-3:00pm** LGIS Islamiat/ Pak studies *H.O.D	
Friday 8 Sept 23	LGIS Physiology/BS CV-P 030	LGIS Community Medicine CV -CM- 001 Disease prevention model *HOD		LGIS **Anatomy SH CV-A-015,016** *HOD	**11:15am-01:15pm Biochemistry SGD** *HOD	**1:15pm-2:00pm** Jumma Prayer	**2:00pm-3:00pm LGIS QURAN.** *Prof. M. Ali*	

Practical Topics: (Anatomy FA-056, Physiology FP- 008, Biochemistry FB-015)

LGIS= Large Group Interactive Session, SGD= Small Group Discussion, SDL=Self Directed Learning, * as per direction of respective HOD

Weekly Planner

1 Year MBBS (Session 2022-23) CVS

WEEK – 3 Theme: Heart

Date 18 Sep to 22 Sep 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 18 Sept 23	Physiology Test	LGIS Physiology 015 *Prof. Dr. Irum Qamar*	B R E A K	LGIS **Biochemistry Hyperlipidemia CV-B-006** ***Prof. Dr. Azam Ali***	LGIS Physiology Medicine 020 *HOD	SGD Anatomy Gross Pericardium CV-A-002 *HOD	Practicals CFRC (A) Physiology (B) Biochemistry (C)	S D L
Tuesday 19 Sept 23	LGIS Physiology 016 *Dr. Jabeen Raza*	LGIS **Anatomy SE Development of Heart CV-A 008 Prof. Dr. Attiya Mubarak**		LGIS **Biochemistry Interpretation of disorders of lipoproteins CV-B-006** ***Prof. Dr. Azam Ali***	LGIS Physiology 016 *Prof .Dr. Irum Qamar*	SGD Anatomy Gross Heart CV-A-003	Practicals CFRC (B) Physiology (C) Biochemistry (A)	
Wednesday 20 Sept 23	LGIS Biochemistry Test	LGIS **Anatomy SE MCQ and SEQ Practice Prof. Dr. Attiya Mubarak**		LGIS Physiology 001 *Prof. Dr. Rafique* Ahmed Khan	LGIS **Pathology CV-Pa-003 Hypertension *H.O.D**	LGIS Physiology 016 Dr. Saima Rizwan	Practicals CFRC(C) Physiology (A) Biochemistry (B)	
Thursday 21 Sept 23	LGIS **Biochemistry Cholesterol CV-B-007 Prof. Dr. Azam Ali**	LGIS Behavioural Sciences *Dr. Sadia Imran Cheema*		LGIS Physiology 001 *Prof. Dr. Rafique*	LGIS Community Medicine CV-CM- 003 Health promotion *HOD	LGIS Physiology Tutorial *HOD	**1:15pm-2:15pm Physiology Tutorial *HOD** / **2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D**	
Friday 22 Sept 23	LGIS Physiology 016 *Dr. Jabeen Raza*	LGIS **Community Medicine CV-CM- 003 Health promotion *HOD**		LGIS Anatomy SH MCQ and SEQ Practice *HOD	**11:15am-01:15pm Biochemistry LGIS and SGD Cholesterol CV-B-007** ***Prof. Dr. Azam Ali***	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN. *Prof. M. Ali*	

Practical Topics: (Anatomy FA-056, Physiology FP- 008, Biochemistry FB-015)

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Weekly Planner

1 Year MBBS (Session 2022-23) CVS

WEEK – 4 Theme: Circulation

Date 25 Sep to 29 Sep 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 25 Sept 23	Anatomy TEST	LGIS Physiology 017 Prof. Dr. Irum Qamar	B R E A K	LGIS **Biochemistry Enzymology CV-B-008 Prof. Dr.Riffat Yasmeen**	LGIS Physiology 017 Dr. Saima Rizwan	SGD Anatomy Gross Heart CV-A-003 *HOD	Practicals CFRC (A) Physiology (B) Biochemistry (C)	S D L
Tuesday 26 Sept 23	LGIS Physiology 022 Medicine/ Cardiology *HOD	Embryology Museum Activity Anatomy SE *HOD		LGIS Biochemistry Co-enzyme and Co-factors CV-B-008 Prof. Dr.Riffat Yasmeen	LGIS Physiology 004 Prof .Dr. Irum Qamar	SGD Anatomy Gross Heart CV-A-003 *HOD	Practicals CFRC (B) Physiology (C) Biochemistry (A)	
Wednesday 27 Sept 23	LGIS Biochemistry *HOD	LGIS Anatomy Museum SE *HOD		LGIS Physiology Prof. Dr. Rafique Ahmed Khan	LGIS Pathology *HOD	LGIS Physiology Dr Saima Rizwan	Practicals CFRC(C) Physiology (A) Biochemistry (B)	
Thursday 28 Sept 23	LGIS Community Medicine CV-CM-004 Behavioral change intervention *HOD	LGIS Pathology CV-Pa-004 Shock *H.O.D		LGIS Physiology 002 Prof. Dr. Rafique Ahmed Khan	LGIS **Biochemistry Classification of enzymes CV-B-009 Prof. Dr.Riffat Yasmeen**	LGIS Physiology Tutorial *HOD	1:15pm-2:15pm Physiology Tutorial / 2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 29 Sept 23	LGIS Physiology 004 Dr. Saima Rizwan **RABIUL AWAL**	LGIS Community Medicine CV-CM-004 Behavioral change intervention *HOD **RABIUL AWAL**		Museum Activity Anatomy SE Embryology Models *HOD **RABIUL AWAL**	**11:15am – 1:15pm Biochemistry LGIS Mechanism of action of enzymes CV-B-009 Prof. Dr.Riffat Yasmeen**	1:15pm-2:00pm Jumma Prayer **RABIUL AWAL**	2:00pm-3:00pm LGIS QURAN. Prof. M. Ali **RABIUL AWAL**	

Practical Topics: (Anatomy FA-056, Physiology FP- 008, Biochemistry FB-015)

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Weekly Planner

1 Year MBBS (Session 2022-23) CVS

WEEK – 5 Theme: Circulation

Date 02 Oct to 06 Oct 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 2 Oct 23	Physiology Test	LGIS Physiology 004 Dr. Jabeen Raza	B R E A K	LGIS Biochemistry Enzyme Kinetics CV-B-009 Prof. Dr. Riffat Yasmeen	LGIS Physiology 018 Medicine/cardiology *HOD	Anatomy Quiz Competition	Practicals CFRC (A) Physiology (B) CFRC (C)	S D L
Tuesday 3 Oct 23	Physiology StuCon 23	Anatomy StuCon 23		Biochemistry StuCon 23	Physiology 005 StuCon 23	Anatomy StuCon 23	Practicals CFRC (B) Physiology (C) CFRC (A)	
Wednesday 4 Oct 23	LGIS Biochemistry Enzyme Kinetics CV-B-009 Prof. Dr. Riffat Yasmeen	Museum activity Anatomy SE Embryology Models *HOD		LGIS Physiology 002 Prof. Dr. Rafique Ahmed Khan	LGIS Pathology CV-Pa-005 Cardiac Failure *H.O.D	LGIS Physiology 006 Dr. Sara Naeem	Practicals CFRC(C) Physiology (A) CFRC (B)	
Thursday 5 Oct 23	LGIS Community Medicine CV-CM-005 Secondary and tertiary prevention *HOD	LGIS Aging Hypertension (001) Dr. Jabeen Raza		LGIS Physiology 003 Prof. Dr. Rafique Ahmed Khan	LGIS Biochemistry Enzyme Regulation CV-B-009 Prof. Dr. Riffat Yasmeen	LGIS Physiology Tutorial	1:15pm-2:15pm Physiology Tutorial / 2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D	
Friday 6 Oct 23	LGIS Physiology 006 Dr Sara Naeem	LGIS Community Medicine CV-CM-005. Secondary and tertiary prevention *HOD		SGD Anatomy Gross Heart CV-A-003 *HOD	11:15am-01:15pm Biochemistry SGD	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN. Prof. M. Ali	

Practical Topics: (Anatomy FA-056, Physiology FP- 008, Biochemistry FB-015)

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Weekly Planner

1 Year MBBS (Session 2022-23) CVS

WEEK – 6 Theme:

Date 09 Oct to 13 Oct 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 9 Oct 23	Anatomy TEST	LGIS Physiology 006 Dr Irum Qamar	B R E A K	**LGIS Biochemistry Enzyme inhibition CV-B-009 Prof. Dr. Riffat Yasmeen**	LGIS Physiology 023 Med/Cardiology *HOD	SGD Anatomy Gross Heart CV-A-003 *HOD	Practicals/OSPE test Histology (A) Physiology (B) Biochemistry (C)	S D L
Tuesday 10 Oct 23	LGIS Physiology 019 Med/Cardiology *HOD	LGIS Anatomy SE Development of Artries CV-A- 009 *HOD		**LGIS Biochemistry Competitive inhibition CV-B-009 Prof. Dr. Riffat Yasmeen**	LGIS Physiology 006 Dr Saima Rizwan	SGD Anatomy Gross Heart CV-A-003	Practicals/OSPE test Histology (B) Physiology (C) Biochemistry (A)	
Wednesday 11 Oct 23	Biochemistry Test+LGIS	LGIS Anatomy SE CV-A- 010 Embryonic Vein *HOD		LGIS Physiology 011 Prof. Dr. Rafique Ahmed Khan	**LGIS Community Medicine CV-CM- 006 Non communicable diseases *HOD**	LGIS Physiology 006 Dr Jabeen Raza	Practicals/OSPE test Histology (C) Physiology (A) Biochemistry (B)	
Thursday 12 Oct 23	**LGIS Community Medicine CV-CM- 006 Non communicable diseases *HOD**	LGIS Aging Cardiac attack (002) Dr. Irum Qamar		LGIS Physiology 011 Prof. Dr. Rafique	**LGIS Biochemistry Non-Competitive inhibition CV-B-009 Prof. Dr. Riffat Yasmeen**	LGIS Physiology Tutorial	1:15pm-2:15pm Physiology Tutorial / 2:15pm-3:00pm LGIS Islamiat/ Pak studies *H.O.D	
Friday 13 Oct 23	LGIS Physiology 024 Medicine	LGIS Pharmacology CV-Ph-001 Antihypertensive drugs *H.O.D		LGIS Anatomy Gross Heart CV-A-004,005	**11:15am-01:15pm Biochemistry LGIS and SGD Interpret the effects of organ phosphorus on enzyme activity CV-B-009 Prof. Dr. Riffat Yasmeen**	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN. Prof. M. Ali	

Practical Topics: (Anatomy FA-056, Physiology FP- 008, Biochemistry FB-015)

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Weekly Planner

1 Year MBBS (Session 2022-23) CVS

WEEK – 7 Theme:

Date 16 Oct to 20 Oct 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm	3:00pm-4:00pm
Monday 16 Oct 23	Module Test	Module Test	B R E A K	LGIS Pharmacology CV-Ph-002 Antianginal drugs *H.O.D	LGIS Community Medicine CV- CM- 007 Risk factor assessment for cardiovascular diseases *HOD	LGIS Physiology 025, 026 Medicine/Surgery *HOD	Practicals CFRC (A) Physiology (B) CFRC (C)	S D L
Tuesday 17 Oct 23	LGIS Physiology 027 Radiology *HOD	LGIS Anatomy SE CV-A-011 Fetal Circulation *HOD		LGIS Pharmacology CV-Ph-003 Antiarrhythmic drugs *H.O.D	LGIS Physiology 028 Surgery *HOD	SGD Anatomy Gross CVA-003 *HOD	Practicals CFRC (B) Physiology (C) CFRC (A)	
Wednesday 18 Oct 23	**LGIS Pharmacology CV-Ph-004 Drugs for cardiac failure *H.O.D**	LGIS Anatomy SE CV-A-012 Congenital Heart Defects *HOD		LGIS Physiology 012 Prof. Dr. Rafique Ahmed Khan	LGIS Pathology CV-Pa-006 Ischemic heart disease *H.O.D	LGIS Physiology 021 Medicine *HOD	Practicals CFRC(C) Physiology (A) CFRC (B)	
Thursday 19 Oct 23	LGIS. Minor Content Module test	LGIS Aging Valvular Diseases (003) Dr. Saima Rizwan		LGIS Physiology 012 Prof. Dr. Rafique Ahmed Khan	**LGIS Pharmacology CV-Ph-005 Drugs for peripheral vascular diseases *H.O.D**	LGIS Physiology Tutorial	**1:15pm-2:15pm Physiology Tutorial** / **2:15pm-3:00pm LGIS Islamiat/Pak studies *H.O.D**	
Friday 20 Oct 23	LGIS Physiology 029 Peads/Obst/Gynae *HOD	LGIS Anatomy Gross CVA-003 *HOD		**LGIS Community Medicine CV- CM- 007 Risk factor assessment for cardiovascular diseases *HOD**	**11:15am-01:15pm** LGIS (004, 005) AGING Dr Sara Naeem	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN. Prof. M. Ali	

Practical Topics: (Anatomy FA-056, Physiology FP- 008, Biochemistry FB-015)

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CARDIOVASCULAR SYSTEM C-FRC 1st YEAR MBBS SESSION 2023-2027

Week	Date/Time	Topic	Batch No	Venue	Facilitator	Log Book Entries
Week 3 Monday	18-09-23 01.15pm-03.00pm	Auscultation of heart sounds	A	Ward	*HOD Medicine/ Cardiology	3 Log book Entries
Week 3 Tuesday	19-09-23 01.15pm-03.00pm	Auscultation of heart sounds	B	Ward	*HOD Medicine/ Cardiology	3 Log book Entries
Week 3 Tuesday	19-09-23 01.15pm-03.00pm	Abdominal jugular reflex JVP	C	Ward	*HOD Medicine	3 Log book Entries
Week 3 Wednesday	20-09-23 01.15pm-03.00pm	Auscultation of heart sounds	C	Ward	*HOD Medicine/ Cardiology	3 Log book Entries
Week 4 Monday	25-09-23 01.15pm-03.00pm	Abdominal jugular reflex JVP	A	Ward	*HOD Medicine	3 Log book Entries
Week 4 Tuesday	26-09-23 01.15pm-03.00pm	Abdominal jugular reflex JVP	B	Ward	*HOD Medicine	3 Log Book Entries
Week 4 Wednesday	27-09-23	***12 RABIUL AWAL HOLIDAY***				
Week 5 Monday	02-10-23 01.15pm-03.00pm	1. Detection of ankle swelling/edema – pitting /non-pitting 2. Perform detection of pedal and carotid pulses	A & C	Ward	*HOD 1. A Surgery 2. C Medicine	3+3 Log Book Entries
Week 5 Tuesday	03-10-23 01.15pm-03.00pm	1. Detection of ankle swelling/edema – pitting /non-pitting 2. Perform detection of	B & A	Ward	*HOD 1. B Surgery 2. A Medicine	3 + 3 Log book Entries

		pedal and carotid pulses				
Week 5 Wednesday	04-10-23 01.15pm-03.00pm	1. Detection of ankle swelling/edema – pitting /non-pitting 2. Perform detection of pedal and carotid pulses	C & B	Ward	*HOD 1. C Surgery 2. B Medicine	3 + 3 Log book Entries
Week 6	**Practicals/OSPE TEST**					
Week 7 Monday	16-10-23 01.15pm-03.00pm	1.Organs of the thorax on CXR 2. Perform cervical and axillary lymph node examination	A & C	Ward	*HOD 1.A Radiology 2. C Surgery	3 + 3 Log book Entries
Week 7 Tuesday	17-10-23 01.15pm-03.00pm	1.Organs of the thorax on CXR 2. Perform cervical and axillary lymph node examination	B & A	Ward	*HOD 1. B Radiology 2. A Surgery	3 + 3 Log book Entries
Week 7 Wednesday	18-10-23 01.15pm-03.00pm	1.Organs of the thorax on CXR 2. Perform cervical and axillary lymph node examination	C & B	Ward	*HOD 1. C Radiology 2. B Surgery	3 + 3 Log book Entries

BLOCK 3
RESPIRATORY SYSTEM MODULE 2

MODULAR OUTCME:

1. Apply basic sciences knowledge to understand the causes of common respiratory diseases.
2. Explain the pathogenesis of respiratory diseases.
3. Enlist the main investigations relevant to respiratory disorders.
4. Recognize risk factors and preventive measures of main respiratory diseases.

GROSS ANATOMY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 30	
Re-A001	● Describe the anatomical features and neurovascular supply of nasal cavity	**Human Anatomy**	**Upper Respiratory Tract**
	● Describe the anatomical features and neurovascular supply of pharynx	**Human Anatomy**	
	● Describe the anatomical features and neurovascular supply of larynx	**Human Anatomy**	
Re-A002	● Describe the anatomical features of the Trachea with its extent, relations, neurovascular supply and lymphatics	**Human Anatomy**	**Trachea**
Re-A003	● Give the boundaries of thoracic cavity, superior and inferior thoracic apertures and list the structures contained/ traversing them.	**Human Anatomy**	**Thoracic Cavity**
	● Describe the anatomical correlates of Thoracic inlet syndrome & Thoracic outlet syndrome	**Integrate with Surgery**	**Rib Cage**
Re-A004	● Identify and differentiate the typical from atypical ribs ● Describe the anatomical features of ribs and give their attachments.	**Human Anatomy**	
	● Describe the anatomical correlates of supernumerary cervical rib.	**Integrate with Surgery**	
	● Classify the articulations of the ribs. ● Describe the anatomical features of these articulations.	**Human Anatomy**	
	● Describe the movements with the muscles producing articulations.	**Human Anatomy**	
	● Describe the effects of fracture to the neck of rib and give its anatomical justification. ● Describe the anatomical correlates of Flail Chest	**integrate with Orthopedics**	
Re-A005	● Describe the anatomical correlates of Thoracotomy	**Integrate with Surgery**	**Intercostal space**
	● Define the attachments, relations, nerve supply and actions of intercostal muscles ● Define an intercostal space and give details of its contents	**Human Anatomy**	
	● Describe the anatomical correlates of intercostal incisions		

		Integrate with Surgery	
Re-A006	● Describe the anatomical features and attachments on typical & atypical thoracic vertebrae. ● Differentiate between typical and atypical vertebrae ● Explain the thoracic part of vertebral column (normal curvature, intervertebral joints, muscles & fascia of the back, blood supply, lymphatic drainage, nerve supply of back) Associated Clinical conditions -Kyphosis, Scoliosis	**Human Anatomy**	**Thoracic Vertebrae**
Re-A007	● Describe the bony features and attachments on the sternum	**Human Anatomy**	
	● Describe the anatomical correlates of median sternotomy. ● Describe the anatomical correlates of sternal biopsy.	**Integrate with Surgery**	**Sternum**
Re-A008	● Describe the endo thoracic fascia with its attachments. ● Describe the supra-pleural membrane with its attachments.	**Human Anatomy**	**Connective tissue of thorax**
Re-A009	● Classify the joints of the thorax mentioning their articulations, movements with the muscle producing them. ● Describe the mechanism of thorax: pump handle and bucket handle movements	**Human Anatomy**	**Joints of thorax**
Re-A010	● Describe the origin, course, relations and distribution of intercostal nerves and vessels. ● Describe the course and relations of Internal thoracic vessels.	**Human Anatomy**	**Neurovascular supply of thorax**
	● Describe the alternate routes of venous drainage in blockage of superior/ inferior vena cava	**Integrate with medicine**	
Re-A011	● Describe the cutaneous nerve supply and dermatomes of thorax.	**Human Anatomy**	**Cutaneous nerve supply of thorax**
	● Give anatomical justification of the manifestations of herpes zoster infection on thoracic wall.	**Integrate with medicine**	
	● Discuss anatomical correlates of intercostal nerve block	**Integrate with Anesthesia**	
Re-A012	● Name the parts of diaphragm mentioning their attachments and neurovascular supply ● Explain the role of diaphragm in respiration ● Enumerate the diaphragmatic apertures with their vertebral levels, mentioning the structures traversing them.	**Human Anatomy**	**Diaphragm**

Re-A- 014	● Describe the anatomical features, relations of lungs ● Describe the neurovascular supply and lymphatic drainage of lungs. ● Compare and contrast the anatomical features and relations of right and left lung ● Describe the root of the lung and pulmonary ligament with arrangement of structures at the hilum ● Define Bronchopulmonary segments. Give their vascular supply, lymphatic drainage and clinical significance	**Human Anatomy**	**Lungs**
	● Describe the anatomical correlates of chest tube intubation ● Describe the anatomical correlates of thoracentesis	**Integrate with Surgery**	**Lungs**
	● Explain the pathophysiology of Atelectasis.	**Integrate with pulmonology**	
	● Describe the anatomical correlates of bronchoscopy	**Integrate with Pulmonology**	
	● Describe the anatomical basis for medicolegal significance of lungs in determining the viability of newborn	**Integrate with Forensic Medicine**	
	● Identify various anatomical landmarks on chest X-Rays, CT and MRI	**Integrate with Radiology**	
EMBRYOLOGY & POST-NATAL DEVELOPMENT			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 6	
Re-A015	● Describe the development of ribs, sternum, and thoracic vertebrae. Give the associated congenital malformations	**Human Embryology**	**Bony components of thoracic cavity**
Re-A016	● List the embryological sources of the diaphragm. Describe the events taking place in the development and descent of the diaphragm	**Human Embryology**	**Diaphragm**
	● Describe the embryological basis of congenital anomalies of the diaphragm: diaphragmatic hernias, eventuation of diaphragm, epigastric hernia, hiatal hernia, retrosternal hernia	**Integrate with Pediatrics**	
Re-A017	● Describe the development of upper respiratory tract: larynx and trachea	**Human Embryology**	
	● Describe congenital anomalies of larynx and trachea: laryngeal web, laryngeal atresia, tracheal stenosis and atresia.	**Integrate with Pediatrics**	

	● List the types of tracheo-esophageal fistulas. Describe their embryological basis and clinical presentation	**Integrated with Surgery**	
Re-A01	● List the phases of lung development with their time periods. Describe the events taking place in each phase	**Human Embryology**	**Lungs**
	● Describe the embryological basis and clinical presentation of respiratory distress syndrome/Hyaline membrane disease.	**Integrate with Pediatrics**	
MICROSCOPIC STRUCTURE			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 04	
Re-A019	● Give the general histological organization of respiratory system.	**Histology**	**Organization of Respiratory System**
Re-A02	● Describe the microscopic and ultramicroscopic structure of respiratory epithelium	**Histology**	**Respiratory Epithelium**
Re-A021	● Describe the histology of blood-air barrier	**Histology**	**Blood-Air Barrier**
Re-A022	● Describe the histological features of epiglottis and larynx	**Histology**	**Epiglottis & Larynx**
Re-A023	● Describe the histological features of trachea and lungs	**Histology**	**Trachea and Lungs**
Re-A024	● Explain the histological basis of: a) Coughing b) Atelectasis c) Infant respiratory distress syndrome d) Diffuse alveolar damage e) Lung carcinoma	**Integrate with pathology**	**Clinical Correlates**
HISTOLOGY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 05	
Re-A025	● Identify, draw and label the histologic sections of epiglottis and larynx.	**Histology**	**Epiglottis& Larynx**
Re-A026	● Describe the histological features of bronchial tree: trachea, bronchi, bronchioles, alveoli		**Trachea & Organization of Respiratory System**
Re-A027	● Identify, draw and label the histological sections of bronchial tree: trachea, bronchi, bronchioles, alveoli, Lung ● Describe the mucosal changes encountered in the trachea-bronchial tree		**Bronchial Tree & Lung**

	● Compare and contrast the histological features of various components of bronchial tree: trachea, bronchi, bronchioles, alveoli		
Re-A028	● Describe, compare and contrast the light and electron microscopic features of type I and type II pneumocytes		**Pneumocytes**
MEDICAL PHYSIOLOGY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 45	
Re-P001	● Enlist the muscles of inspiration and expiration in quiet breathing ● Enlist the muscles of inspiration and expiration in labored breathing	**Integrate with Anatomy**	**Breathing**
	● Explain the components of the work of breathing ● Discuss the mechanics of pulmonary ventilation ● Explain periodic breathing	**Medical Physiology**	
	● Explain the causes and pathophysiology of sleep apnea	**Integrate with medicineS**	
Re-P002	● Define lung compliance ● Enlist the factors that affect lung compliance ● Draw the compliance diagram of air filled and saline filled lungs ● Enlist the components of surfactant ● Describe the role of surfactant in lung compliance	**Medical Physiology**	**Lung Compliance**
	● Explain the role of surfactant in premature babies	**Integrate with Pediatrics**	
Re-P003	● Define the different lung volumes and capacities and their clinical significance ● Discuss fev1/ FVC ratio and its clinical significance ● Enlist the lung volumes and capacities that cannot be measured by spirometer. ● Define dead space & explain its types	**Medical Physiology**	**Lung Volumes and Capacities**
	● Discuss FEV1/FVC ratio in relation to Bronchial Asthma ● Discuss FEV1/FVC ratio in relation to Chronic Obstructive Pulmonary disease/restrictive lung diseases	**Integrate with Pulmonology**	
	● Discuss FEV1/FVC ratio in relation to pulmonary embolism	**Integrate with medicine**	
Re-P004	● Define alveolar ventilation. ● Define minute respiratory volume	**Medical Physiology**	**Alveolar Ventilation**
Re-P005	● Explain the ultrastructure of respiratory membrane ● Discuss the factors affecting diffusion of gases across the respiratory membrane	**Medical Physiology**	**Principles of Gaseous Exchange**

	● Explain the diffusion capacity of respiratory membrane for oxygen and carbon dioxide ● Define alveolar, pleural and transpulmonary pressure. ● Explain differences in the partial pressures of atmospheric, humidified, alveolar air and explain physiological basis of change in each pressure		
Re-P006	● Explain the different forms of transport of oxygen in the blood ● Draw and explain oxyhemoglobin dissociation curve ● Enlist the factors that cause rightward shift of oxyhemoglobin dissociation curve. ● Enlist the factors that cause leftward shift of oxyhemoglobin dissociation curve ● Explain Bohars effect	**Medical Physiology**	**Transport of Oxygen in the Blood**
	● Define; enlist the types, and causes of cyanosis	**Integrate with Medicine**	
Re-P007	● Enlist different forms in which CO2 is transported in the blood. ● Explain the Carboxyhemoglobin dissociation curve. ● Explain the Haldane effect. ● Explain the chloride shift/Hamburger phenomenon. ● Define the respiratory exchange ratio (RER)	**Medical Physiology**	**Transport of CO2 in Blood**
Re-P008	● Explain the alveolar oxygen and carbon dioxide pressure when VA/Q = infinity, zero and normal ● Explain the concept of physiological shunt when VA/Q ratio is less than normal ● Explain the concept of physiological dead space when VA/Q ratio is above normal	**Medical Physiology**	**VA/Q (Ventilation Perfusion Ratio)**
Re-P009	● Enlist the respiratory & non-respiratory functions of lungs. ● Explain the nervous control of bronchiolar musculature ● Trace the reflex arc of cough reflex and sneeze reflex	**Medical Physiology**	**Protective Reflexes**
Re-P010	● Explain the principal means by which acclimatization occurs ● Explain the events that occur during acute mountain sickness ● Enlist the features of chronic mountain sickness	**Medical Physiology**	**Aviation and Space**
Re-P011	● Explain the pathophysiology, features, prevention and treatment of decompression sickness.	**Medical Physiology**	**Deep sea Diving**
Re-P012	● Draw and explain the effect of CO poisoning on oxyhemoglobin dissociation curve	**Medical Physiology**	**CO Poisoning**
	● Explain the pathophysiology, features, and treatment of CO poisoning.	**Integrate with medicine**	

Re-P013	● Enumerate the components of respiratory centers and explain their functions ● Explain the inspiratory RAMP signal ● Explain the Herring Breuer reflex/lung inflation reflex and its clinical significance	**Medical Physiology**	**Nervous Regulation of Respiration**
Re-P014	● Explain the location of chemo sensitive area (central chemoreceptors) and peripheral chemoreceptors ● Explain the effect of hydrogen ions & carbon dioxide on the chemo- sensitive area ● Explain the role of oxygen in the control of respiration/peripheral chemoreceptors	**Medical Physiology**	**Chemical Control of Respiration**
Re-P015	● Explain the regulation of Respiration during Exercise	**Medical Physiology**	**Exercise and Respiration**
Re-P016	● Enlist the effects of acute hypoxia ● Explain the hypoxia inducible factor a master switch for body response to hypoxia	**Medical Physiology**	**Hypoxia**
	● Define and explain different types of hypoxias	**Integrate with Medicine**	
Re-P017	● Explain the pathophysiology of Tuberculosis	**Integrate with pathology**	**Tuberculosis**
Re-P018	● Describe the pathophysiology of Pneumonia	**Integrate with Pathology**	**Pneumonia**
Re-P019	● Differentiate between cardiac and respiratory dyspnea ● Outline management strategies for dyspnea	**General Medicine**	**Dyspnea**
Re-P020	● Enlist the causes of Pneumothorax ● Describe the signs and symptoms of Pneumothorax	**General Medicine**	**Pneumothorax**
Re-P021	● Enlist the causes of Pleuritis ● Describe the signs and symptoms of Pleuritis ● Discuss the management of Pleuritis		**Pleuritis**
Re-P022	● Enlist the causes of Bronchitis ● Discuss the signs and symptoms of Bronchitis ● Discuss the management of Bronchitis		**Bronchitis**
Re-P023	● Classify different types of pneumonia ● Discuss the sign symptoms of pneumonia ● Discuss the management of pneumonia		**Pneumonia**
Re-P024	● Classify different types of asthma ● Discuss the signs and symptoms of asthma ● Discuss the management of asthma		**Asthma**
Re-P025	● Classify different types of Tuberculosis ● Discuss the signs and symptoms of tuberculosis ● Discuss the management of Tuberculosis		**Tuberculosis**
Re-P026	● Classify different types of acute respiratory distress syndrome	**General Medicine**	**Acute respiratory**

	• Discuss the signs and symptoms of acute respiratory distress syndrome • Discuss the management of acute respiratory distress syndrome		**distress syndrome**
Re-P 027	• Define respiratory failure • Describe various types of respiratory failure • Enlist various causes of respiratory failure • Outline management strategies of respiratory failure	**General Medicine**	**Respiratory Failure**
Re-P 028	• Describe ABC in a trauma patient	**Surgery**	**First Aid in Surgical Patients**
MEDICAL BIOCHEMISTRY			
THEORY			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 15	
Re-B 001	• Explain and interpret the pedigree of single gene defect i.e., Emphysema and cystic fibrosis (autosomal recessive)	**Medical Biochemistry**	**Genetic Defects**
Re-B 002	• Explain the biochemical significance of phospholipids • Interpret Respiratory Distress syndrome on the basis of given data	**Integrate with Physiology**	**Phospholipids**
Re-B 003	• Describe the structure, synthesis, degradation and functions of Elastin	**Medical Biochemistry**	**Elastin**
	• Discuss the pathophysiology of Emphysema.	**Integrate with Pathology**	
Re-B 004	• Discuss the concept of acid base balance • nterpret metabolic and respiratory disorders of acid base balance on the basis of sign, symptoms and ABG findings	**Medical Biochemistry**	**Acid base Balance**
	• Describe the Clinical interpretation of acid base balance	**Integrate with Medicine**	
PRACTICAL			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 10	
Re-P 029	• Perform the clinical examination of chest for the respiratory system (inspection, palpation, percussion, Auscultation)	**Medical Physiology**	**Clinical Examination of Chest**
Re-P 030	• Determine Peak Expiratory Flow rate with Peak Flow Meter		**Peak Expiratory Flow rate measurement**
Re-P 031	• Determine Blood Oxygen Saturation with finger Pulse Oximeter		**Oxygen Saturation**

Re-P 032	● Determine Respiratory Volumes & Capacities with Spirometer/ Spiro lab. (FEV1/FVC ratio)		**Spirometry**
Re-P 033	● Student should be able to Record the movements of chest by stethograph		**Chest movements**
Re-B 005	● Determine the pH of the solution by pH meter	**Medical Biochemistry**	**Determinatio n of pH**
PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 5+3=8	
Re-Ph 001	● Identify the drugs for cough suppression & expectoration ● Explain the mechanism of action and adverse effects of cough suppressants	**Pharmacology & Therapeutics**	**Cough Suppressants**
Re-Ph 002	● Explain the mechanism of action and adverse effects of anti-histamines		**Antihistamines**
Re-Ph 003	● Explain the mechanism of action and adverse effects of anti-asthmatics		**Antiasthmatics**
Re-Pa 001	● Describe the pathophysiology of acute respiratory distress syndrome	**Pathology**	**Acute Respiratory Distress Syndrome**
Re-Pa 002	● Describe the pathophysiology of obstructive lung disease		**Obstructive lung Disease**
Re-Pa 003	● Re-Pa003		**Restrictive Lung Disease**
AGING THEORY			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
	AGING	**TOTAL HOURS = 3**	
Re-Ag 001	● Discuss the effect of age on decreased lung compliance	**Pathology**	**Ageinduced Lung Fibrosis**
Re-Ag 002	● Discuss the role of age on respiratory clearance leading to recurrent inflammatory processes at the ciliated respiratory epithelium		**Increased Vulnerability to Onfection & Neoplasia**
DISEASE PREVENTION & IMPACT			
PRACTICAL			
CODE	**SEPCIFIC LEARNING OBJECTIVES**	**DISCIPLINE**	**TOPIC**
		TOTAL HOURS = 10	
Re-CM 001	● Identify the common risk factors of acute respiratory infections with emphasis on smoking ● Discuss preventive strategies of different problems related to respiratory system	**Community Medicine and Public Health**	**Prevention of acute respiratory infections (ARI)**

	● Enlist the common vaccines used for the prevention of ARI		
	● Explain the role of vitamins in the respiratory tract infections	**Integrate with Biochemistry**	
Re-CM 002	● Explain the effect of air pollutants on the respiratory system	**Community Medicine and Public Health**	**Interaction of Environment & Respiratory System**
Re-CM003	● Describe the burden of respiratory diseases		**Epidemiology of Respiratory Diseases**
Re-CM 004	● Enlist the common respiratory diseases related to occupation		**Occupational Lung Diseases**
Re-BhS – 001	● identify the psychosocial factors leading to dyspnea		**Dyspnea**
Re-BhS 002	● Identify the psychosocial factors leading to psychogenic cough.	**Behavioral sciences**	**Occupational Lung Diseases**
Re-BhS – 001	● Identify the psychosocial factors leading to dyspnea.		**Dyspnea**
Re-BhS 002	● Identify the psychosocial factors leading to psychogenic cough		**Psychogenic Cough**
Re-BhS 003	● 00Identify and deal with the various psychosocial aspects of Respiratory conditions (such as Asthma, COPD, Tuberculosis, Cystic Fibrosis, Sleep Apnea) on Individual, Family and Society		**Personal, Psychosocial and Vocational Issues**

Weekly Planner

1 Year MBBS (Session 2022-23) Respiratory System

WEEK – 1Theme:

Date 23 Oct to 27 Oct 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 23 Oct 23	SGD Anatomy Gross	LGIS Physiology CV-P-001 Dr. Jabeen Raza	B R E A K	LGIS Community Medicine *HOD*	LGIS Physiology CV-P-001 Dr. Jabeen Raza	SGD Anatomy Gross	Practicals Histology (A) Physiology (B) Biochemistry (C)		LGIS Physiology
Tuesday 24 Oct 23	LGIS Physiology 001 Dr. Jabeen Raza	LGIS Biochemistry *Prof. Dr. Azam Ali*		LGIS Physiology 002 Dr. Sara Naeem	SGD Anatomy Gross	SGD Anatomy Gross	Practicals Histology (B) Physiology (C) Biochemistry (A)		LGIS Physiology
Wednesday 25 Oct 23	LGIS Biochemistry *Prof. Dr. Azam Ali*	LGIS Physiology 002 Dr. Sara Naeem		LGIS Physiology 005 *Prof. Dr. Rafique*	LGIS Anatomy SH *HOD	SGD Anatomy Gross	Practicals Histology (C) Physiology (A) Biochemistry (B)		SGD Anatomy Gross
Thursday 26 Oct 23	LGIS Biochemistry Prof. Dr. Azam Ali	LGIS Anatomy SE *HOD		LGIS Physiology 005 *Prof. Dr. Rafique*	LGIS Community Medicine *HOD*	LGIS Physiology Tutorial Physiology 004 Dr. Jabeen Raza	1:15pm-2:00pm Physiology Tutorial	2:00pm-3:00pm LGIS BS *H.O.D	SGD Anatomy Gross
Friday 27 Oct 23	LGIS PERLs *H.O.D	LGIS Physiology 003 Dr. Saima Rizwan		LGIS Biochemistry Prof. Dr. Azam Ali	SGD Anatomy Gross	LGIS Pharmacology *HOD*	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN/Islamiat/ Pak studies *Prof. M. Ali*	LGIS. Quran *H.O.D

Weekly Planner

1 Year MBBS (Session 2022-23) Respiratory Sysytem

WEEK – 2. Theme:

Date 30 Oct to 3 Nov 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 30 Oct 23	Anatomy TEST	LGIS Physiology 003 Dr. Saima Rizwan	B R E A K	LGIS Community Medicine *HOD	LGIS Physiology 003 Dr. Saima Rizwan	SGD Anatomy Gross	Practicals Histology (A) Physiology (B) Biochemistry /CFRC(C)		LGIS Physiology
Tuesday 31 Oct 23	LGIS Physiology 008 Dr. Jabeen Raza	LGIS Biochemistry *Prof. Dr. Azam Ali*		LGIS Physiology 008 Dr. Jabeen Raza	LGIS Anatomy SH *HOD	SGD Anatomy Gross	Practicals Histology (B) Physiology (C) Biochemistry/CFRC (A)		LGIS Physiology
Wednesday 1 Nov 23	LGIS Biochemistry *Prof. Dr. Azam Ali*	LGIS PERLs *H.O.D		LGIS Physiology 005 *Prof. Dr. Rafique*	LGIS Anatomy SE *HOD	SGD Anatomy Gross	Practicals Histology (C) Physiology (A) Biochemistry/CFRC (B)		SGD Anatomy Gross
Thursday 2 Nov 23	LGIS Biochemistry Prof. Dr. Azam Ali	LGIS Anatomy SE *HOD		LGIS Physiology 006 *Prof. Dr. Rafique*	LGIS Community Medicine *HOD	LGIS Physiology 009/ Tutorial Dr. Iram Qamar	1:15pm-2:00pm Physiology Tutorial	2:00pm-3:00pm LGIS BS *H.O.D	SGD Anatomy Gross
Friday 3 Nov 23	LGIS Pharmacology *H.O.D	LGIS Physiology 010 Dr. Iram Qamar		LGIS Biochemistry Prof. Dr. Azam Ali	SGD Anatomy Gross	LGIS 001 Aging Pathology	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN/Islamiat/ Pak studies *Prof. M. Ali*	LGIS. Quran *H.O.D

Weekly Planner

1 Year MBBS (Session 2022-23) Respiratory System

WEEK – 3. Theme:

Date 06 Nov to 10 Nov 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 06 Nov 23	SGD Anatomy Gross	LGIS Physiology CV-P-010 *Prof. Dr. Iram Qamar*	B R E A K	LGIS Pharmacology *H.O.D	LGIS Pathology *H.O.D	SGD Anatomy Gross	Practicals Histology (A) Physiology (B) CFRC (C)		LGIS Physiology
Tuesday 07 Nov 23	Physiology TEST Dr. Sara Naeem 011	LGIS Biochemistry *Prof. Dr. Azam Ali*		LGIS Physiology 013 Prof. Dr. Irm Qamar	LGIS Anatomy SE *HOD	SGD Anatomy Gross	Practicals Histology (B) Physiology (C) CFRC(A)		LGIS Physiology
Wednesday 0 8 Nov 23	LGIS Pathology *H.O.D	LGIS Physiology 013 Prof. Dr. Irum Qamar		LGIS Physiology 006 *Prof. Dr. Rafique*	LGIS Anatomy SE *HOD	SGD Anatomy Gross	Practicals Histology (C) Physiology (A) CFRC(B)		SGD Anatomy Gross
Thursday 09 Nov 23	LGIS Biochemistry Prof. Dr. Azam Ali	LGIS Anatomy SH *HOD		LGIS Physiology 007 *Prof. Dr. Rafique*	LGIS Community Medicine *HOD*	LGIS Physiology/Tutorial 014 Dr. Sara Naeem	1:15pm-2:00pm Physiology Tutorial	2:00pm-3:00pm LGIS BS *H.O.D	SGD Anatomy Gross
Friday 10 Nov 23	LGIS Community Medicine *HOD*	LGIS Physiology 014 Dr. Sara Naeem		LGIS Biochemistry Prof. Dr. Azam Ali	SGD Anatomy Gross	LGIS Pharmacology *H.O.D	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN/Islamiat/Pak studies *Prof. M. Ali*	LGIS. Quran *H.O.D

Weekly Planner

1 Year MBBS (Session 2022-23) Respiratory System

WEEK – 4 Theme:

Date 13th Nov to 17th Nov 2023

Days/Time	8:00am-09:00am	09:00am-10:00am	10:00am-10:15am	10:15am-11:15am	11:15am-12:15pm	12:15pm-1:15pm	1:15pm-3:00pm		3:00pm-4:00pm
Monday 13 Nov 23	Module TEST Anatomy	Module Test Physiology	B R E A K	LGIS Pharmacology *H.O.D	LGIS Pathology *H.O.D	SGD Anatomy Gross	Practicals CFRC(A) Physiology (B) CFRC (C)		LGIS Physiology
Tuesday 14 Nov 23	LGIS Physiology 016 Dr. Saima Rizwan	LGIS Biochemistry *Prof. Dr. Azam Ali*		LGIS Physiology 012 Dr. Sara Naeem	LGIS Anatomy SE *HOD	SGD Anatomy Gross	Practicals CFRC (B) Physiology (C)		LGIS Physiology
Wednesday 15 Nov 23	LGIS 002 Aging Pathology	LGIS Physiology 015 Dr. Iram Qamar		LGIS Physiology 007 *Prof. Dr. Rafique*	LGIS Anatomy SH *HOD	SGD Anatomy Gross	Practicals CFRC (C) Physiology (A) CFRC (B)		SGD Anatomy Gross
Thursday 16 Nov 23	LGIS Biochemistry Prof. Dr. Azam Ali	SGD Anatomy Gross		LGIS Physiology 017-18 *Dr. Iram Qamar*	LGIS Community Medicine *HOD*	LGIS Physiology/General Medicine 019, 023, 025	1:15pm-2:00pm Physiology Tutorial/ Medicine 022, 024, 026, 027	2:00pm-3:00pm LGIS PERLs *H.O.D	SGD Anatomy Gross
Friday 17 Nov 23	Minor Module TEST Community Medicine *HOD*	LGIS Physiology/ Surgery 020, 021, 028		SGD Anatomy Gross	TUTORIAL Biochemistry Prof. Dr. Azam Ali	TUTORIAL Biochemistry Prof. Dr. Azam Ali	1:15pm-2:00pm Jumma Prayer	2:00pm-3:00pm LGIS QURAN/Islamiat/Pak studies *Prof. M. Ali*	LGIS Islamiyat

Respiratory System C-FRC Schedule 1ST year MBBS Session 2023-2027

Week	Date/Time	Topic	Batch No	Venue	Facilitator	Log Book Entries
Week 2 Monday	30-10-23 01.15pm-03.00pm	1.Auscultation of Chest sounds 2. Clubbing of Fingers 3. Chest Compression	C	Ward	*HOD Medicine	2+2+2 Log book Entries
Week 2 Tuesday	31-10-23 01.15pm-03.00pm	1.Auscultation of Chest sounds 2. Clubbing of Fingers 3. Chest Compression	A	Ward	*HOD Medicine	2+2+2 Log book Entries
Week 2 Wednesday	01-11-23 01.15pm-03.00pm	1.Auscultation of Chest sounds 2. Clubbing of Fingers 3. Chest Compression	B	Ward	*HOD Medicine	2+2+2 Log book Entries
Week 3 Monday	06-11-23 01.15pm-03.00pm	1.Performance and significance of Arterial blood gases 2. Administering inhaler to patient	C	Lecture Hall # 1	*HOD Medicine	1+2 Log book Entries
Week 3 Tuesday	O7-11-23 01.15pm-03.00pm	1.Performance and significance of Arterial blood gases 2. Administering	A	Lecture Hall # 1	*HOD Medicine	1+2 Log book Entries

		inhaler to patient				
Week 3 Wednesday	08-11-23 01.15pm-03.00pm	1.Performance and significance of Arterial blood gases 2. Administering inhaler to patient	B	Lecture Hall # 1	*HOD Medicine	1+2 Log Book Entries
Week 4 Monday	13-11-23 01.15pm-03.00pm	Identification of pneumonic patch and COPD on chest X ray	A, B & C	Lecture Hall # 1	*HOD Medicine	2+2 Log Book Entries

ASSESSMENT SECTIONS

ASSESSMENT POLICY:

1. First Professional examination will be held at the end of the first year MBBS class as per University of Health Sciences schedule.
2. All students must prepare all the subjects mentioned as per above sections including clinical skills and PERL. The assessment will be held in all three blocks, which were taught during first year MBBS.
3. There will be four papers in the first-year professional examination as per following:
    a) Paper 01 will be based on contents of Block No. 01.
    b) Paper 02 will be based on contents of Block No. 02.
    c) Paper 03 will be based on contents of Block No. 03.
    d) Paper 04 will be based on contents of Islamic Studies, Ethics, Professionalism, Research and Pakistan Studies.
4. All papers will based on written and Oral/Practical/Clinical examination except Islamic Studies, Ethics, Professionalism, and Pakistan Studies, which will be written only.
5. The written and Oral/Practical/Clinical examination will carry 150 marks each thus a total of 300 marks for each of the three block (Block No. 01, 02 & 03).
6. The total marks of first year MBBS will be 1000 out of which 100 marks will be IofIslamic Studies, Ethics, Professionalism, and Pakistan Studies but these 100 marks will not be included i determining the overall merit and position of the student.
7. Major component of the first will include:
    a) Anatomy including Applied and Clinical Anatomy.
    b) Physiology including Applied and Clinical Physiology.
    c) Biochemistry including Applied and Clinical Biochemistry.
8. The Applied and Clinical part of all the above three mentioned component will be based on Clinical correlations.
9. Minor Components of the year include Pathology, Pharmacology and Therapeutics, Community Medicine, Behavioral Sciences, Clinical Foundation 1 and PERL 1.
10. Written Examination:
    a) There will be one written paper for each of Paper 1, 2 & 3 of the Blocks.
    b) This written paper will be based on one best type MCQs (70%) and SEQs (30%).

c) Each MCQ will have five options (One best option and four distractors) and each will carry 01 Mark.

d) There will be no sections of SEQs and each will carry 05 Marks.

e) SEQs will only be from the major components of first year that is Anatomy, Physiology and Biochemistry and their Applied C and Clinical part as mentioned in Para 07.

f) There will be total 85 MCQs and 07 SEQs in each of three Block papers that is Block 01, 02 & 03.

g) The duration of written paper will be of 180 Minutes or 03 Hours.

h) MCQs part will be of 110 Minutes and SEqs will be 70 Minutes.

11. Oral/Practical/Clinical Examination:

a) There will an Oral/Practical and Clinical Examination for each of the three Blocks that is Block 01, 02 & 03.

b) There will total 12 OSPE/OSCE/Viva stations for each of the Oral/Practical and Clinical Examination of Block 01, 02 & 03.

i. There will be 07 Observed stations from major components areas for each of the Oral/Practical and Clinical Examination of Block 01, 02 & 03.

ii. There will be 02 Observed stations 01 each from C-FRC and PERLS of each Oral/Practical and Clinical Examination of Block 01, 02 & 03.

iii. There will be 03 Structured Viva stations in each Oral/Practical and Clinical Examination of Block 01, 02 & 03.

c) Each OSPE/OSCE Observed station will carry 08 Marks.

d) Each Structured Viva station will carry 16 Marks (08 Each for External and Internal Examiner).

e) Duration of Oral/Practical and Clinical Examination is 150 Minutes or 02.5 Hours).

f) Time for each OSPE/OSCE station will be 08 Minutes.

g) Time for each structured Viva will be 20 Minutes (10 Minutes each for each External and Internal Examiner.

12. Each student of First Year MBBS will have to appear in First Year Professional Examination as follows:

a) Block No. 01 (Foundation and Hemopeotic and Lymphatics Modules) 300 Marks.

b) Block No. 02 (Musculoskeletal System Module) 300 Marks.

c) Block No. 03 (Cardiovascular and Respiratory System Module) 300 Marks.

d) Islamiat/Ethics/Pakistan Studies 100 Marks.

13. No grace marks shall be allowed either in written or practical examination.

14. Atleast 25% MCQs and 25% SEQ shall cover Applied Clinical Cases scenerio to assess high order thinking of First Year MBBS examination.

Block No. 01 (Foundation and Hemopoietic and Lymphatics Modules)

The examination of block no. 01 will be as follows:

1. One written paper of 120 Marks having following two parts:

a) First part include 85 one best out of five options Multiple Choice Question (MCQs) with 85 total marks and allocated time will be 110 Minutes.

b) Second part include 07 Structured Essay Questions (SEQs) with 35 total marks and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by College of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

Block No. 02 (Musculo-Skeletal Modules)

The examination of block no. 02 will be as follows:

1. One written paper of 120 Marks having following two parts

a) First part include 85 one best out of five options Multiple Choice Question (MCQs) with 85 total marks and allocated time will be 110 Minutes.

b) Second part include 07 Structured Essay Questions (SEQs) with 35 total marks and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by College of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

Block No. 03 (Cardiovascular and Respiratory Modules)

The examination of block no. 03 will be as follows:

1. One written paper of 120 Marks having following two parts:

a) First part include 85 one best out of five options Multiple Choice Question (MCQs) with 85 total marks and allocated time will be 110 Minutes.

b) Second part include 07 Structured Essay Questions (SEQs) with 35 total marks and allocated time will be 70 Minutes.

c) Oral/Practical/Clinical Examination shall be of 120 marks.

d) The Continuous Internal Examination conducted by College of enrollment shall carry 60 marks (20% of the total 300 marks) of the Block. These 60 marks will be equally distributed for Written and Oral/Practical/Clinical Examination.

Islamic Studies/Ethics/Pakistan Studies

The examination of Islamic studies/Ethics/Pakistan Studies will be as follows:

1. One written paper of 100 Marks having following pattern:

   a) First part include Islamic Studies/Ethics portion and it will include five Long Essay Question with a choice of three to attempt, each carry 20 marks and total 60 marks.

   b) Second part include Pakistan Studies portion and it will include four Long Essay Question with a choice of two to attempt, each carry 20 marks and total 40 marks.

2. The medium of instruction shall be English but Islamic Studies/Ethics can be attempted in Urdu.

Marks Distribution Table

Subject	Theory	Marks	Practical	Marks	Total
Foundation and Hemopeotic and Lymphatics Modules	Part I MCQs Part II SEQs	85 35	Oral/Practical/Clinical Examination	120	**300**
	Internal Assessment	30		30	
	Total	**150**	**Total**	**150**	
Musculo-Skeletal Module	Part I MCQs Part II SEQs	85 35	Oral/Practical/Clinical Examination	120	**300**
	Internal Assessment	30		30	
	Total	**150**	**Total**	**150**	
Cardiovascular and Respiratory Module	Part I MCQs Part II SEQs	85 35	Oral/Practical/Clinical Examination	120	**300**
	Internal Assessment	30		30	
	Total	**150**	**Total**	**150**	
Grand Total for Merit and Position					**900**
Islamic Studies/Ethics Pakistan Studies	Islamic Studies/Ethics 3 LEQs out of 5 LEQs			60	**100**
	Pakistan Studies 2 LEQs out of 4 LEQs			40	
	Total			**100**	
Grand Total					**1000**

REGULATION:

This examination shall be permitted to any students who:

1. Has been enrolled/registered and completed one academic year proceedings in a constituent or affiliated medical college of University of Health Sciences (UHS).
2. has his/her name been submitted for the purpose of examination to Registrar of UHS from Principal of constituent or affiliated medical college, where he /she is enrolled and eligible as per prerequisite of first year MBBS examination.
3. Has his/her marks of internal assessment of all the Blocks are submitted to Registrar of University of Health Sciences by the Principal of the college along with admission forms.
4. Produces the following certificates duly attested by the Principal of the medical college:
    a) Good Character.
    b) Attendance Certificate having not less than 75% attendance of full course in both lectures delivered and practical conducted in first year MBBS.
        i. Candidates failing short of attending lectures and practical conducted will not be admitted for the examination.
        ii. Student though will be allowed for next examination if they attend 75% of lectures delivered and practical conducted before the commencement of next examination by remaining enrolled as regular student of the college.
    c) Certificate of having passed all the Block examinations conducted by the college of enrollment with 50% cumulative percentage in aggregate of Block 1, 2 & 3.
5. The minimum passing marks shall be 50% in written and 50% in Oral/Practical/Clinical Examination and 50% as an aggregate, independently and concomitantly at one and the same time of first year MBBS examination.
6. Minimum numbers for Passing Islamic studies / Ethics and Pakistan Studies shall be 33% as an aggregate.
    a) Islamic Studies/Ethics and Pakistan Studies can be passed any time before final year MBBS examination.
    b) Marks of Islamic studies/Ethic and Pakistan studies shall not be counted towards the professional examination total marks and determination of position.
7. If there is a discrimination of less than 50% marks awarded in the Internal and External Examiners in any segment then UHS hholds the right to review and or re-examine the individual case.
8. Candidates securing more than 85% marks in any of Block will be declared as distinction in the Block subject he/she secured 80% marks in written component of that paper. Similarly, If he/she does not pass in first year examination as a whole at and same time shall not be declared to have a distinction in single Block or paper.
9. Any candidate failing to clear one or more papers in annual examination shall be provisionally allowed to join second year. He/she must clear that failed paper in supplementary examination within 4 weeks' time frame, failing to do he/she will be detained back in first year. Under no circumstances he/she shall be proted to second year MBBS profession until and unless he/she cleared the failed papers.

10. If a student appear by any chance for the first time in Supplementary examination as he/she did not appeared in annual examination and failed to clear one or more papers shall be detained in same first year class, no provisional joining in next class shall be allowed.
11. Any student failed to clear first year MBBS in four consecutive attempts inclusive of availed or unavailedafter being eligible for examination shall be expelled from college and shall not be allowed to continue MBBS or BDS studies in the college or shall not be allowed to get admission as fresh candidate in either MBBS or BDS.
12. Every candidate shall submit their admission to Registrar of UHS through Principal of the college where he/she is enrolled and completed first year MBBS.
13. The marks of internal assessment shall be submitted to Controller of Examination of UHS within 02 weeks after completion of each Block 1, 2 & 3 examination. No Internal Assessment will be accepted after the commencement of annual examination.
14. Parent Teacher Meeting should be schedule after every Block to share the attendance, internal assessment and performance of the students with their parents and University of Health Sciences.
15. Fresh internal assessment for supplementary examination shall not be permissible.
16. Fresh internal assessment for detained students can be submitted
17. A proper continuous internal assessment record shall be maintained by respective departments of the medical college.
18. If he/she submitted admission for after the due dates, the student will have to pay double of the normal fee as per notified schedule by the Registrar of University of Health Sciences before the commencement of examination. Medical College ahall also deposit a fine of PKR 50,000 as a fine to UHS.
19. The candidates will submit their respective fee to UHS through Principal of their College. Principal will deposit student fees through bank draft or pay order or cross cheque in the name Treasurer University of Health Sciences along with admission forms.

MBBS 1ST Professional

Paper 3

Theme	Written Exam				Oral/practical/clinical Exam			
	Subject	MCQ 1 Mark	SEQ 5 Marks	Marks	OSPE/OSCE/Viva Station			
					OSPE 8 Marks each observe	OSCE 8 Marks each observe	Structured viva 16 Marks each	Marks
Normal Structure	Anatomy & Applied/clinical	16	2	26	1	-	1	24
Normal Function	Physiology & Applied/clinical	31	4	51	4	-	1	48
	Biochemistry & Applied/clinical	18	1	23	2	-	1	32
Disease Burden & Prevention	Community Medicine & Public Health	06	-	06	-	-		-
	Behavioral Sciences	02	-	02	-	-		-
Pathophysiology & Pharmacotherapeutics	Pathology	07	-	07	-	-		-
	Pharmacology	05	-	05	-	-		-
CFRC	CF 1-1	-	-	-	-	1		08
PERLS	PERL 1-1	-	-	-	-	1		08
		85	7x5=35	120	7 Stations x 08 = 56	02 Stations x 08 = 16	3 Vivas x 16 = 48	120

Academic Calendar First Year
2023

WHITE COAT CEREMONY	**1st March 2023**
BLOCK 1 ● **Spring Break** ● **Foundation Module (8wks)** ● **H&L Module (3wks)** ● **Block 1 Exam**	**1st March to 2nd June 2023 (12 Wks + 1 wk Spring Break)** ● **1st April to 7th April 2023** ● **1st March to 5th May 2023** ● **8th May to 26th May 2023** ● **29th May - 2nd June 2023**
BLOCK 2 ● **Summer Break** ● **MSK Module (9wks)** ● **Block 2 Exam**	**5th June to 1st Sept 2023 (9 wks + 4wks Summer Break)** ● **16 June to 13th July 2023** ● **5th June to 25th August 2023** ● **28th August – 1st September 2023**
BLOCK 3 ● **CVS Module (7wks)** ● **Respiratory Module (4wks)** ● **Block 3 Exam** ***REVISION***	**4th September to 24th November 2023 (12 Weeks)** ● **4th September to 20th October 2023** ● **23rd October to 17th November 2023** ● **20th -24th November 2023** **25th November to 8th December 2023**
PREPARATORY LEAVES (4wks) **Winter break**	● **09 Dec 2023 to 11 Jan 2024** ● **25th December to 31st December 2023**
PROFESSIONAL EXAMS	**12 Jan 2024**

RESOURCE BOOKS:

ANATOMY:

- Langman's Medical embryology
- Snell's Clinical Anatomy
- Snell's Clinical Neuroanatomy. Walter Kluwer
- Laiq H.S. Medical histology Paramount Books
- Laiq H.S. General Anatomy Paramount books

PHYSIOLOGY:

- Guyton & Hall Textbook of Medical Physiology Latest Edition
- Essentials of Medical Physiology by Mushtaq Ahmad

BIOCHEMISTRY:

- Harper's Illustrated Biochemistry by Mayes Peter A. Murray, Robert K., and Granner, Daryl K. Latest edition
- Lippincott's Illustrated Reviews: Biochemistry Champe P.C. Harvey, E.A Latest Edition
- ABC of Clinical genetics by H.M. Kingston

PATHOLOGY:

- Robbins & Cotran Pathologic Basis of Disease. Vinay Kumar, Abul K. Abbas, Jon C. Aster latest edition
- Pocket Companion to Robbins & Cotran Pathologic Basis of Disease, Richard N Mitchell & Vinay Kumar & Abul K. Abbas
- Walter and Israel General Pathology

PHARMACOLOGY:

- Basic and Clinical Pharmacology latest Edition by Bertram Katzung
- Lippincott Illustrated Reviews: Pharmacology Book by Karen Whalen

BEHAVIOURAL SCIENCES:

- Handbook of Behavioural Sciences by Mowadat H Rana
- Medical and Psychosocial Aspects of Chronic Illness and Disability, Donna Falvo, PhD, RN; Beverley E. Holland

COMMUNITY MEDICINE:

- Park's Textbook Of Preventive And Social Medicine Unknown Binding – by K. Park
- Public Health and Community Medicine Ilyas, Ansari

SURGERY:

- Bailey & Love Short Practice of Surgery

MEDICINE:

- Davidson's Principles & Practice of Medicine

ISLAMIAT:

- Standard Islamiyat (Compulsory) For BA, BSC, MA, MSC, MBBS By Prof. M Sharif Islahi
- Ilmi Ialamiyat (Compulsory) For BA, BSC & equivalent