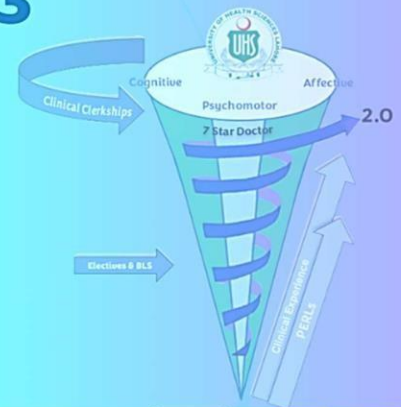




MODULAR INTEGRATED CURRICULUM 2K23



version 2.0



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Principal's Message

Dear Students and Faculty,

It is with great pride and enthusiasm that we embark on this transformative journey together at our newly established medical college. This is a moment of new beginnings, brimming with possibilities, and an opportunity to shape a future grounded in academic excellence, innovation, and compassionate care.

To our students, you are stepping into a world where knowledge meets responsibility. Medicine is more than a profession; it is a calling to serve humanity with integrity and empathy. We are committed to nurturing not just your intellect but also your values, so you may emerge as competent and compassionate healthcare professionals. As you navigate this rigorous yet rewarding journey, remember that perseverance, curiosity, and a spirit of service will be your guiding stars.

To our esteemed faculty, your dedication and expertise form the cornerstone of this institution. Together, let us inspire our students, foster a culture of inquiry, and build a learning environment that emphasizes collaboration, critical thinking, and lifelong learning. You have the unique opportunity to shape the minds and hearts of future leaders in healthcare, and I am confident that your unwavering commitment will pave the way for their success.

Our first block of study marks the foundation of an academic experience that integrates the principles of holistic education with cutting-edge medical training. It is designed to challenge, motivate, and inspire both students and faculty. Let this guide serve as a roadmap, helping us achieve our shared goals while upholding the highest standards of education and care.

The journey ahead will undoubtedly present challenges, but it is in overcoming these that we find growth. Let us work together to create a legacy of excellence that will guide generations to come. With determination, collaboration, and a shared vision, I have no doubt that we will achieve greatness together.

Welcome to the start of an extraordinary chapter.

Warm regards,

Prof. Shireen Khawar
Principal, QMCK



Vision, of Queen Medical College

Improving health through excellence in teachings and learnings, leaderships and innovations in health care practice and research.

Mission, of Queen Medical College

To make a valuable contribution to the undergraduate medical education in the country, by developing core knowledge, practical skills and ethical attitudes towards patient's care in our graduates.

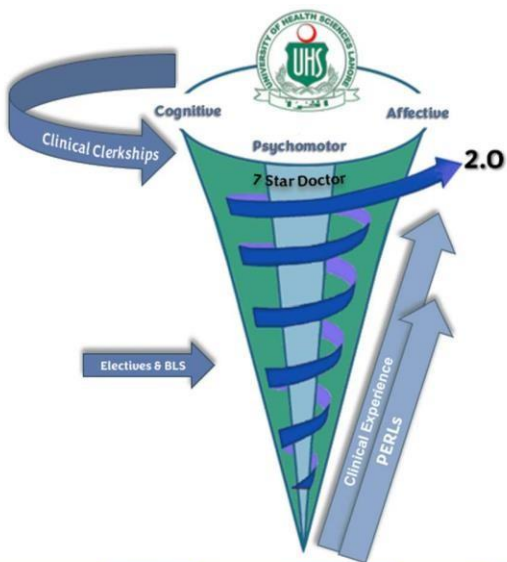
To produce health care professionals who will enhance and extend quality of life in diverse clinical settings, offering the best in terms of efficacy and safety. To strive to attain high standards in education, researches and clinical cares and develop tomorrow's health care leaders who practice patient centered medicine of highest professional standard.



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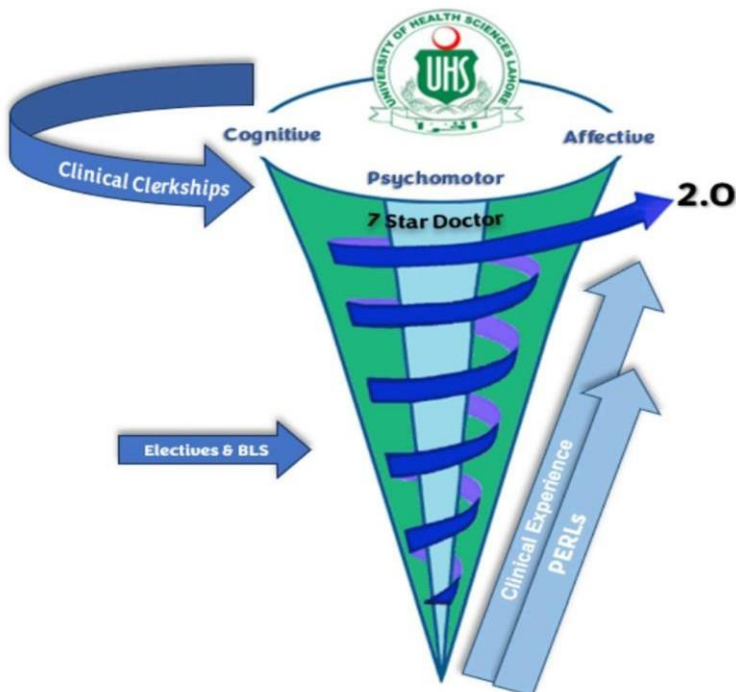
BLOCK-3





MODULE NO. 04: CARDIOVASCULAR-1

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MODULE RATIONALE

The Cardiovascular system comprises the study of the heart & circulatory system. The initial learning activities will help in understanding the normal structure & development of the organs of the system. Understanding of anatomical details of each component of Cardiovascular System (CVS) will be accompanied by study of normal physiological mechanisms. This will help in better understanding the possible pathological conditions of the system, including some of the most prevalent conditions in society like ischemic heart disease, hypertension, shock, heart block, heart failure. This will be followed by discussion on some important group of drugs used for treatment and/or prevention of these conditions (administration route, mechanism of action and side effects). The impact of cardiovascular diseases on society and the effect of ageing on cardiovascular system will be discussed.

MODULE OUTCOMES

- Describe the normal structure of heart including development, topographical anatomy, neurovascular supply, and histology.
- Review the arrangement of circulatory system (arteries, veins, lymphatics).
- Define the congenital anomalies of cardiovascular system with reference to normal development and early circulation.
- Define functions of cardiac muscle along with its properties
- Interpret pressure changes during cardiac cycle along with regulation of cardiac pumping.
- Interpret normal & abnormal Electrocardiogram (ECG), ST-T changes, and its abnormalities.
- Identify the risk factors and role of lipids in coronary blockage and atherosclerosis (hyperlipidemia/ dyslipidemia).
- Define cardiac output and its modulating/controlling factors.
- Differentiate left and right sided heart failure and correlate it with the importance of pressure differences.
- Enumerate different types of arrhythmias and describe the electrical events that produce them.
- Discuss the psychosocial impact of cardiovascular diseases in society.

THEMES

- Heart

- Circulation

CLINICAL RELEVANCE

- Cardiac Failure
- Arrhythmias
- Atherosclerosis and Ischemic heart diseases
- Hypertension
- Shock
- Congenital Heart diseases
- Peripheral arterial diseases

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 OF CARDIOVASCULAR-1 MODULE



NORMAL STRUCTURE			
THEORY			
CODE	GROSS ANATOMY	TOTAL HOURS = 10	
	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
CV-A-001	Define mediastinum giving its boundaries and compartments. List the contents of its various compartments.	Human Anatomy	Mediastinum
	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.		
CV-A-002	Describe Pericardium and its parts with emphasis on their nerve supply.	Human Anatomy	Pericardium
	Describe the pericardial cavity mentioning transverse and oblique sinuses. Discuss their clinical significance		
	Describe the anatomical correlates of various pericardial conditions like pericardial rub, pericardial pain, pericarditis, pericardial effusion, and cardiac tamponade.	Integrate with Medicine	
	Describe the anatomical basis for Paracentesis /pericardiocentesis.		

CV-A-003	Describe the external features of heart.	Human Anatomy	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.		
	Discuss the anatomical correlates of cardiac arterial supply	Integrate with cardiology/ Medicine	
	Describe the anatomical correlates of electrocardiography, cardiac referred pain.	Integrate with Cardiology/ Medicine	
	Describe the anatomical basis for angioplasty, and coronary grafts.		
	Describe the features of angina pectoris and myocardial infarction and correlate them anatomically	Human Anatomy	
	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 formation, relations, and distribution of cardiac plexus.		
	Describe components and significance of fibrous skeleton of heart		
	Describe the cardiac valves		
	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	Integrate with Radiology		

	on Computed tomography/ Magnetic Resonance Imaging CT/ MRI		
THEORY			
CODE	EMBRYOLOGY & POST-NATAL DEVELOPMENT	TOTAL HOURS = 14	
	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
CV-A-004	Describe the early development of heart and blood vessels	Human Embryology	Introduction
	Describe the development of pericardial cavity	Human Embryology	
CV-A-005	Define parts of primitive heart tube and give its folding	Human Embryology	Development of Heart
	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)		
CV-A-006	Describe the embryological basis of dextrocardia and ectopia cordis	Human Embryology	Development of Heart and Development of Lymphatic System
	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	
	Describe the partitioning of truncus arteriosus and bulbus cordis	Human Embryology	
	Describe the formation of ventricles and interventricular septum		
	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-A-007	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-A-008	Describe the development of embryonic veins associated with developing heart: Vitelline veins, Umbilical Veins and Common cardinal vein and their fate	Human Embryology	Development of Veins
	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-A-009	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/ Obgyn	
CV-A-010	List clinically significant types of atrial septal defects along with their embryological basis and features. Describe patent foramen ovale.	Pediatrics	Congenital Heart defects
	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		
THEORY			
CODE	MICROSCOPIC ANATOMY (HISTOLOGY & PATHOLOGY)	TOTAL HOURS = 04	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
CV-A-011	Describe microscopic structure of Heart wall (Endocardium, Myocardium, Epicardium) Describe histology of Cardiac skeleton, SA (sinoatrial) node, AV (atrioventricular) node, Purkinje fibers.	Histology	Heart & Cardiac Muscle
	Describe the microscopic and ultramicroscopic structure of cardiac muscle emphasizing on Tubules, sarcoplasmic reticulum and intercalated discs. Identify, draw and label histological structure of cardiac muscle		
CV-A-012	Describe general histological organization of blood vessels: Tunica intima, media and adventitia.	Histology	Blood Vessels Organization
	Identify, draw and label histological sections of elastic artery, muscular artery, arterioles, vein, capillaries and sinusoids		
CV-A-013	Describe histological features of arteries: Muscular arteries, elastic arteries, Arterioles	Histology	Arteries
CV-A-014	Describe histological features of veins and exchange vessels: large veins, medium sized veins, venules, Capillaries, and sinusoids	Histology	Veins
	Compare and contrast the light microscopic structure of arteries and veins		
CV-A-015	Describe the histopathological basis of thrombus and embolus formation.	Integrate with Pathology	Thrombus/ Embolus formation
CV-A-016	Explain the histological basis of arteriosclerosis and atherosclerosis. Describe role of arterioles in hypertension	Histology	Arteriosclerosis atherosclerosis Hypertension
CV-A-017	Describe histological features of Lymph vascular		Lymph vascular

	system (Lymph capillaries, Lymph vessels & Lymphatic duct)		System
			
CODE	HISTOLOGY	TOTAL HOURS = 03	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
CV-A-018	Identify, draw and label histological structure of cardiac muscle	Histology	Histological features of Cardiac Muscle
CV-A-019	Identify, draw and label histological sections of elastic artery, muscular artery, arterioles, vein, capillaries and sinusoids	Histology	Histological features of Blood Vessels
NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 68	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
CV-P-001	Explain the physiological anatomy of cardiac muscle.	Physiology	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.		
	Describe the mechanism of excitation-contraction coupling and relaxation in cardiac muscle.		

	Draw & explain pressure & volume changes of left ventricle during cardiac cycle.		
	Explain & draw relationship of ECG (Electrocardiography) 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.		
	Define & give the normal values of the cardiac output, stroke volume, end diastolic volume & end systolic volume	Integrate with Medicine	
CV-P-002	Describe the Frank starling mechanism.	Physiology	Regulation of heart pumping
	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		
CV-P-003	Draw and explain the conducting system of heart	Physiology	Conducting system of heart
	Describe the physiological basis and significance of AV nodal delay.		
CV-P-004	Explain the ectopic pacemaker	Integrate with Cardiology/Medicine	Fundamentals of ECG
	Enlist, draw, and explain the physiological basis & give durations of waves, intervals, and segments of normal ECG.	Physiology	
	Describe the standard limb leads, Augmented limb		

	leads & precordial leads.		
	Define Einthoven's Triangle & Einthoven's law.		
	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.		
	Enlist the ECG changes in angina pectoris.	Integrate with Medicine	
	Enlist the ECG changes in myocardial infarction.		
	Plot the mean cardiac axis.	Physiology	
	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	Integrate with Medicine	
CV-P- 005	Describe the effect of hypokalemia and hyperkalemia on ECG	Integrate with Biochemistry	Effect of electrolyte on ECG
	Describe the effect of hypocalcemia and hypercalcemia on ECG.		
CV-P- 006	Define tachycardia and enlist its causes.	Integrate with Medicine	Cardiac arrhythmia
	Define bradycardia and enlist its causes.	Physiology	
	Classify arrhythmias		
	Explain the physiological basis of sinus arrhythmia.		
	Explain the physiological basis of reflex bradycardia in Athletes.		
	Explain the carotid sinus syndrome.		
	Enlist the causes of atrioventricular block.	Integrate with Cardiology/ Medicine	
	Explain the types of atrioventricular blocks.		
	Explain the ECG changes in 1 st , 2 nd & 3 rd degree heart block.		
	Explain the cause, physiological basis & ECG changes in Stokes Adam syndrome/ventricular	Physiology	

	escape.		
	Enlist the causes of premature contractions.	Integrate with Cardiology/ Medicine	
	Explain the causes and ECG changes of premature atrial contractions.		
	Explain the physiological basis of pulses deficit.	Physiology	
	Explain the causes and ECG changes in Premature Ventricular Contraction (PVC)	Integrate with Cardiology/ Medicine	
	Enlist the causes and ECG findings in Long QT syndrome.		
	Explain the causes, physiological basis, features, ECG changes & management of premature heartbeat.		
	Explain the causes, physiological basis, features, ECG changes & management of atrial fibrillation.		
	Explain the causes, physiological basis, features & ECG changes of ventricular fibrillation.		
	Explain the physiological basis, features & ECG changes of atrial flutter.	Physiology	
	Compare Flutter and Fibrillations	Physiology	
CV-P-007	Explain the functional parts of circulation (arteries, arterioles, capillaries, veins, venules).	Physiology	Organization of Circulation
CV-P-008	Explain the pressures in systemic & pulmonary circulation.	Physiology	Blood flow
	Explain the types of Blood flow and significance of Reynolds number.		
CV-P-009	Describe local control of blood flow according to tissue needs.	Physiology	Local & Humoral Control of Blood flow
	Discuss humoral control of local blood flow.		
	Explain long term control of local blood flow.		
	Describe vascular control by ions and other chemical factors.		
	Name the organs in which auto regulation of blood		

	flow occurs during changes in arterial pressure (metabolic & myogenic mechanisms).		
CV-P-010	Explain the role of autonomic nervous system for regulating the circulation.	Physiology	Nervous Regulation of 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. Enumerate hydrostatic and osmotic factors that underlie Starling's hypothesis for capillary function.		
CV-P-011	Explain the role of nervous system in rapid control of arterial blood pressure.	Physiology	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.		
CV-P-012	Make a flow chart to discuss the role of renin		Role of

	angiotensin system for long term control of blood pressure.	Physiology	kidneys in long term Regulation of Arterial Blood Pressure
	Make a flow chart to show the regulation of blood pressure in response to increase in ECF (Extra Cellular Fluid) volume.		
	Make a flow chart to show the regulation of blood pressure in response to increase in salt intake.		
CV-P-013	Define cardiac output, cardiac index & venous return with their normal values.	Integrate with Cardiology/ Medicine	Cardiac output
	Discuss the factors regulating cardiac output		
	Discuss factors regulating venous return	Physiology	
CV-P-014	Explain the regulation of skeletal muscle blood flow at rest & during exercise.	Physiology	Skeletal muscle circulation
CV-P-015	Explain the physiological anatomy of coronary circulation.	Physiology	Coronary circulation
	Explain the regulation of coronary blood flow.		
	Explain the physiological basis of angina, myocardial & subendocardial infarction		
CV-P-016	Define & enlist different types of shock.	Physiology	Circulatory shock
	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.	Integrate with Pathology	
	Explain the causes, features, and pathophysiology of anaphylactic shock.		
	Discuss the treatment of different types of shock.	Integrate with Medicine	
	Explain the different stages of shock.		

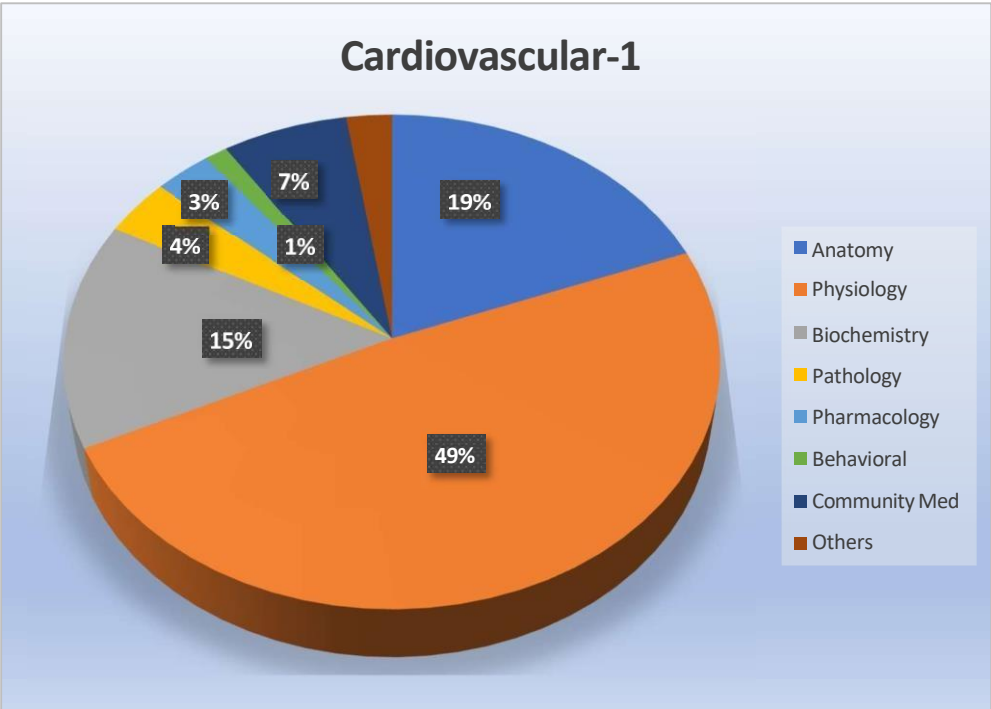
	Explain the mechanisms that maintain the cardiac output & arterial blood pressure in non-progressive shock.	Physiology	
	Enlist different types of positive feedback mechanisms that can lead to the progression of shock.		
CV-P-017	Enlist the different types of heart sounds and explain the physiological basis of each.	Physiology	Heart sounds
	Enlist the causes of 3 rd and 4 th heart sounds.		
	Explain the causes & physiological basis of murmurs caused by valvular lesions.		
	Enumerate abnormal heart sounds and describe the physiological basis of each.	Integrate with Medicine	
THEORY			
CODE	MEDICAL BIOCHEMISTRY	TOTAL HOURS = 21	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
CV-B-001	Classify lipids	Biochemistry	Classification of lipids
CV-B-002	Discuss the biomedical functions & properties of lipids	Biochemistry	Functions of lipids & Properties of lipids
CV-B-003	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-B-004	Discuss lipid peroxidation and its significance	Biochemistry	
CV-B-005	Explain the biochemical and therapeutic roles of eicosanoids (prostaglandins, leukotrienes, thromboxane, and prostacyclin)	Biochemistry	Eicosanoids
CV-B-006	Interpret the disorders associated with impairment	Biochemistry	Hyperlipidemias
CV-B-007	of lipoprotein metabolism especially atherosclerosis and LDL (Low-Density Lipoprotein) oxidized	Biochemistry	Cholesterol

CV-B-008	Discuss the signs and symptoms of hyperlipidemia	Biochemistry	Type I to V hyperlipidemias
	Interpret data related to hyperlipidemia		
CV-B-009	Discuss the sources, biomedical importance, active states, deficiency and excess of fat-soluble vitamins: Vitamins A,D. E and K	Biochemistry	Fat soluble vitamins
CV-B-010	Discuss the sources, biomedical importance, active states, deficiency and excess of water-soluble vitamins: Vitamins B group	Biochemistry	Water soluble vitamins
CV-B-011	Discuss the sources, biomedical importance, active states, deficiency and excess of minerals and trace elements especially zinc, Mg, Na, K, I, Ca, P, Se, S, Cu	Biochemistry	Minerals and trace elements
			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 10+3=13	
		DISCIPLINE	TOPIC
CV-P-018	Record an electrocardiogram by correct lead placement and connections a to identify normal heart sound	Physiology	ECG
CV-P-019	Determine the effect of posture and exercise on blood pressure by auscultatory method.		Blood Pressure
CV-P-020	Measure the blood pressure of the subject by palpatory and auscultatory methods.		Blood Pressure
CV-P-021	Examine arterial pulse to recognize normal characteristics of pulse.		Arterial Pulse
CV-P-022	Examine neck veins to determine Jugular Venous Pulse (JVP)		JVP
CV-B-012	Perform cardiac markers Creatine Kinase and Lactate Dehydrogenase (CK and LDH) Interpret lab reports based on enzymes for diseases	Biochemistry	Performance Interpretation of Lab report

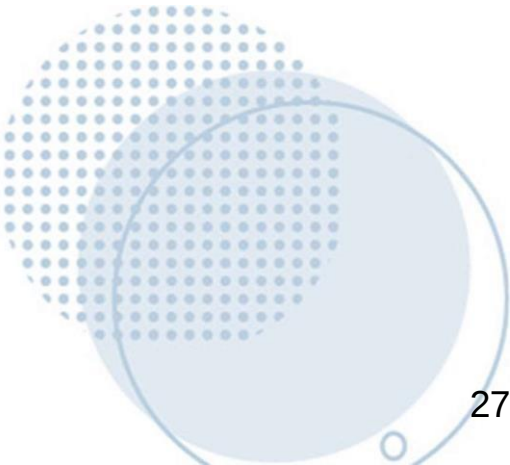
	like cardiac disorders and hyperlipidemias		
AGING			
THEORY			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 05	
		DISCIPLINE	TOPIC
CV-Ag-001	Discuss the effect of age on blood vessels with reference to hypertension	Physiology/ Geriatrics/ Medicine	Hypertension
CV-Ag-002	Discuss the risk of cardiac 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 arrhythmia.		Arrhythmia
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			
THEORY			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 6+5=11	
		DISCIPLINE	TOPIC
CV-Pa-001	Classify types of thrombosis, embolism, and infarction	Pathology/ Integrate with medicine	Atherosclerosis
	Discuss the pathophysiology of thrombosis, embolism, and infarction		
CV-Pa-002	Identify the types and causes of hypertension		Hypertension
	Discuss the clinical consequences of hypertension and atherosclerosis		
CV-Pa-003	Discuss the pathophysiology of shock		Shock
CV-Pa-004	Classify the types of heart failure		Cardiac Failure
	Identify the causes leading to heart failure		

CV-Pa-005	Identify the types of ischemic heart disease		Ischemic Heart Disease
	Discuss the pathophysiology of different types of ischemic heart disease		
CV-Pa-006	Explain the pathological causes of high & low cardiac output.		Cardiac Output
CV-Ph-001	Discuss briefly the therapeutic effect of various antihypertensive drugs.	Pharmacology	Anti-hypertensive drugs
CV-Ph-002	Discuss briefly the therapeutic effect of various antianginal drugs		Antianginal drugs
CV-Ph-003	Discuss briefly the therapeutic effect of various antiarrhythmic drugs		Antiarrhythmic mics drugs
CV-Ph-004	Discuss briefly the therapeutic effect of drugs used in cardiac failure.		Drugs for cardiac failure
DISEASE PREVENTION AND IMPACT			
THEORY			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 11+2=13	
		DISCIPLINE	TOPIC
CV-CM-001	Describe the various strategies and models to prevent diseases.	Community Medicine and Public Health	Disease Prevention Models
CV-CM-002	Describe primordial prevention and its application to preventing CVS diseases.		Primordial Prevention
	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	Discuss various methods of behavioural change interventions at community level.		Behavioural 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.		Risk factor assessment of CVS diseases
	Learn and apply interventions to prevent the risk factors in community.		
CV-BhS-001	Identify and deal with the various psychosocial aspects of Cardiovascular conditions (such as Hypertension, Coronary artery disease, Heart failure, Arrhythmias, and other cardiovascular conditions) on Individual, Family and Society.	Behavioral Sciences	Personal, Psychosocial and vocational issues
CV-BhS-002	Psychological basis of emotional fainting & its impact		Emotional fainting



Module Weeks	Recommended Minimum Hours
07	162



Days/ Time	Week-1								
	8:00 - 9:00	09.00-9.45	09.45-10.30	10:30 - 11:15	11:15 - 12:00	12 to 1:30		1:30 - 3:00	
Monday	Introduction to Module				Pak studies	Anatomy Dissection CV-A-001 Mediastinum		Practical Batch A: Anatomy CV-A-018 Cardiac Muscle Batch B: Physiology CV-P-018: ECG Batch C: Biochemistry CV-B-012: Cardiac Markers Batch D: Skills Lab: Carotid and Pedal pulse	
Tuesday	Islamiat Life of Holy Prophet	Quran Divine revelation of Holy Book	Biochemistry LGIS CV-B-001 Classification of Lipids		Embryology LGIS CV-A-004 Early Development of Heart + Blood Vessels	SDL		Practical Batch B: Anatomy CV-A-018 Cardiac Muscle Batch C: Physiology CV-P-018: ECG Batch D: Biochemistry CV-B-012: Cardiac Markers Batch A: Skills Lab: Carotid and Pedal pulse	
Wednesday	Anatomy Dissection CV-A-002 Pericardium	Physiology LGIS CV-P-002 Regulation of Heart Pumping	Biochemistry LGIS CV-B-002 Functions of lipids and properties of lipids		Community Medicine LGIS CV-CM-001+002 Disease prevention model + primordial Prevention	Embryology LGIS CV-A-004 Development of Pericardial Cavity	Clinical Skill foundation CV-CSF Ankle Edema (Demonstrate + Peer Assessment)	Practical Batch C: Anatomy CV-A-018 Cardiac Muscle Batch D: Physiology CV-P-018: ECG Batch A: Biochemistry CV-B-012: Cardiac Markers Batch B: Skills Lab: Carotid and Pedal pulse	
Thursday	Anatomy Mediastinum	Quran Divine revelation of Holy Book	Biochem		Islamiyat	PBL A Cardiac Cycle		Practical Batch D: Anatomy CV-A-018 Cardiac Muscle Batch A: Physiology CV-P-018: ECG Batch B: Biochemistry CV-B-012: Cardiac Markers Batch C: Skills Lab: Carotid and Pedal pulse	
Friday	8:00 - 9:00	9:00 - 9:40	9:40 - 10:20	10:20 - 10:30	10:30 - 11:10	11:10 - 11:50	11:50 - 12:30	12:30 - 2 :00	2:00 – 3:00
	Physiology LGIS CV-P-001 Cardiac Muscles	BS	Pak Studies	Break	Quran	Anatomy Dissection Topic: Pericardium		Jummah Break	Self Directed Learning

		Week-2							
Days/ Time	8:00 - 9:00	9:00 - 9:45	09:45 - 10:30	10:30 - 11:00	11:00 - 11:45	11:45 - 12:30	12:30 - 1:15	1:15 - 3:00	
Monday	Anatomy Dissection CV-A-002 Pericardium	Physiology LGIS CV-P-003 Conducting system of the Heart	Biochemistry LGIS CV-B-003 Classification of fatty acid	Break	Embryology LGIS CV-A-005 Development of Heart	Pathology LGIS CV-Pa-001 Thrombosis embolism and infarction	Physiology LGIS CV-P-004 Fundamentals of ECG	Practical Batch A: Anatomy CV-A-018 Cardiac Muscle Batch B: Physiology CV-P-018: ECG Batch C: Biochemistry CV-B-012: Cardiac Markers Batch D: Clinical Skills Foundation. Ankle oedma, Lymph node examination	
Tuesday	SGIS Batch A: Anatomy CV-A-074: Ossification Batch B: Physiology CV-P-001 SA node Action Potential Batch C: Biochemistry CV-B-003 Lipid Peroxidation	Physiology LGIS CV-P-004 Fundamentals of ECG	Biochemistry LGIS CV-B-003 Lipid Peroxidation		Behavioural Sciences LGIS CV- BhS-001 Personal, Psychosocial and vocational issues related to CVS disorder	PERL Workshop PERLs 1-20 Tolerance, patience, Giving feedback	Embryology LGIS CV-A-005 Embryological basis of dextrocardia, ectopia cordis	Practical Batch B: Anatomy CV-A-018 Cardiac Muscle Batch C: Physiology CV-P-018: ECG Batch D: Biochemistry CV-B-012: Cardiac Markers Batch A: Clinical Skills Foundation. Ankle oedma, Lymph node examination	
Wednesday	SGIS Batch A: Physiology CV-P-001: SA node Action Potential Batch B: Biochemistry CV-B-003: Lipid Peroxidation Batch C: Anatomy CV-A-074: Ossification	Physiology LGIS CV-P-005 electrolyte effect on ECG	Biochemistry LGIS CV-B-003 Lipid Peroxidation		Community Medicine LGIS CV-CM-003=004 Health promotion+ Behaviour change related to CVS Disorder	PBL B: Cardiac Cycle		Practical Batch C: Anatomy CV-A-018 Cardiac Muscle Batch D: Physiology CV-P-018: ECG Batch A: Biochemistry CV-B-012: Cardiac Markers Batch B: Clinical Skills Foundation. Ankle oedma, Lymph node examination	
Thursday	SGIS Batch A: Biochemistry CV-B-003: Lipid Peroxidation Batch B: Anatomy CV-A-074: Ossification Batch C: Physiology CV-P-001: SA node Action Potential	Physiology LGIS CV-P-006 Sinus Arrhythmias causes of tachycardia/bradycardia	Biochemistry LGIS CV-B-004 Eicosanoids		Histology LGIS CV-A-011 Heart wall + Cardiac Muscles	Anatomy Dissection CV-A-003 Heart: External Features/Chambers		Practical Batch D: Anatomy CV-A-018 Cardiac Muscle Batch A: Physiology CV-P-018: ECG Batch B: Biochemistry CV-B-012: Cardiac Markers Batch C: Clinical Skills Foundation. Ankle oedma, Lymph node examination	
Friday	8:00 - 9:00	9:00 - 9:40	9:40 - 10:20	10:20 - 10:30	10:30 - 11:10	11:10 - 11:50	11:50 - 12:30	12:30 - 2 :00	2:00 -03:00
	Anatomy Dissection CV-A-003 Heart: Arterial Blood Supply + Clinical Correlation	Physiology LGIS CV-P-006 Reflex Bradycardia in athletes	Biochemistry LGIS CV-B-004 Eicosanoids	Break	Pathology LGIS CV-Pa-002 Hypertension	Aging/Physiology LGIS CV-Ag-001 Effect of age on blood vessels with reference to hypertension	Pharmacology LGIS CV-Ph-001 Antihypertension	Jummah Break	Self Directed Learning

Days/ Time	Week-3								
	8:00 - 9:00	9:00 - 9:45	09:45 - 10:30	10:30 - 11:00	11:00 - 11:45	11:45 - 12:30	12:30 - 1:15	1:15 - 3:00	
Monday	Anatomy Dissection CV-A-002-b Paricardium	Physiology LGIS CV-P-003 Conducting system of Heart	Biochemistry LGIS CV-B-003 Classification of Fatty acids	Break	Embryology LGIS CV-A-005 Development of Heart	Pathology LGIS CV-Pa-001 Thrombosis embolism, and infaction	Physiology LGIS CV-P-004 Fundamental of ECG	Practical Batch A: Anatomy CV-A-018 Cardiac Muscle Batch B: Physiology CV-P-018: ECG Batch C: Biochemistry CV-B-012: Cardiac Markers Batch D: Apex beat location	
Tuesday	SGIS Batch A: Anatomy CV-A-074: Ossification Batch B: Physiology CV-P-001: SA node Action Potential Batch C: Biochemistry CV-B-003: Lipid Peroxidation	Physiology LGIS CV-P-0044 Fundamentals of ECG	Biochemistry LGIS CV-B-003 Lipid Peroxidation		PERL Workshop PERLs1-20 Tolerance, Patience, Giving Feedback	Physiology LGIS CV-P-005 Electrolyte effect on ECG	Embryology LGIS CV-A-006-a Embryological basis of dextrocardia. Ectopia cordis	Practical Batch B: Anatomy CV-A-018 Cardiac Muscle Batch C: Physiology CV-P-018: ECG Batch D: Biochemistry CV-B-012: Cardiac Markers Batch A: Apex beat location	
Wednesday	SGIS Batch A: Physiology CV-P-001: SA node Action Potential Batch B: Biochemistry CV-B-003: Lipid Peroxidation Batch C: Anatomy CV-A-074: Ossification	Physiology/Medicine LGIS CV-P-006 Sinus arrhythmias + causes of tachycardia/bradycardia	Biochemistry LGIS CV-B-003 Lipid Peroxidation		Community Medicine LGIS CV-CM-003 + 004 Health Promotion + Behaviour Changes related to CVS disorder	Anatomy Dissection CV-A-002-b Pericardium		Practical Batch C: Anatomy CV-A-018 Cardiac Muscle Batch D: Physiology CV-P-018: ECG Batch A: Biochemistry CV-B-012: Cardiac Markers Batch B: Apex beat location	
Thursday	SGIS Batch A: Biochemistry CV-B-003: Lipid Peroxidation Batch B: Anatomy CV-A-074: Ossification Batch C: Physiology CV-P-001: SA node Action Potential	Physiology LGIS CV-P-006 Reflex bradycardia in athletes Behavioural Sciences	Biochemistry LGIS CV-B-004 Eicosanoids		Histology LGIS CV-A-011 Heart wall + Cardiac muscles	Anatomy Dissection CV-A-003-a Heart: External Features/chambers		Practical Batch D: Anatomy CV-A-018 Cardiac Muscle Batch A: Physiology CV-P-018: ECG Batch B: Biochemistry CV-B-012: Cardiac Markers Batch C: Apex beat location	
Friday	8:00 - 9:00	9:00 - 9:40	9:40 - 10:20	10:20 - 10:30	10:30 - 11:10	11:10 - 11:50	11:50 - 12:30	12:30 - 2 :00	2:00 - 3:00
	Anatomy Dissection CV-A-003-b Heart: Arterial Blood Supply + Clinical correlations	Behavioural Sciences LGIS CV-BhS-001 Personal, psychosocial and vocational issues related to CVS disorders	Biochemistry LGIS CV-B-004 Eicosanoids	Break	Pathology LGIS CV-Pa-002 Hypertension	Aging/Physiology LGIS CV-Ag-001 Effect of age on blood vessels with reference to hypertension	Pharmacology LGIS CV-Ph-001 Antihypertensives	Jummah Break	Self Directed Learning

Days/ Time	Week-4								
	8:00 - 9:00	9:00 - 9:45	09:45 - 10:30	10:30 - 11:00	11:00 - 11:45	11:45 - 12:30	12:30 - 1:15	1:15 - 3:00	
Monday	Physiology Test	Physiology/Medicine LGIS CV-P-006 AV Blocks, Stocks Adam Syndrome/ ventricular escape + ECG Changes	Biochemistry LGIS CV-B-006 Hyperlipidaemias	Break	Histology LGIS CV-A-012 Blood Vessels Organization	Physiology/Medicine LGIS CV-P-006 PAC/PVC (Atrial/Ventricular fibrillation + Flutter + ECG changes	Embryology LGIS CV-A-005-a Development of AV canal and atrium, Sinus venous, Truncus arteriosus and bulbus cordis	Practical Batch A: Histology CV-A-019-a Elastic & Muscular arteries, arterioles Batch B: Physiology CV-P-018: Blood Pressure Batch C: Biochemistry CV-B-012: Interpretation Batch D: Skills Lab	
Tuesday	Integrated Seminar							Practical Batch B: Histology CV-A-019-a Elastic & Muscular arteries, arterioles Batch C: Physiology CV-P-018: Blood Pressure Batch D: Biochemistry CV-B-012: Interpretation Batch A: Skills Lab	
Wednesday	Aging/Physiology LGIS CV-Ag-004 Effect of age on neural conduction of heart in relation to arrythmias	Physiology/Medicine LGIS CV-P-008+009 Blood Flow (Local and Humoral control of blood flow)	Biochemistry LGIS CV-B-007 Cholesterol	Break	Community Medicine CV-CM-005 Secondary + Tertiary Prevention related to CVS disorder	Gross Anatomy Audiovisual Demonstration CV-A-003 Anastomosis of arterial supply and Cardiac valves	Histology LGIS CV-A-013 Arteries	Practical Batch C: Histology CV-A-019-a Elastic & Muscular arteries, arterioles Batch D: Physiology CV-P-018: Blood Pressure Batch A: Biochemistry CV-B-012: Interpretation Batch B: Skills Lab	
Thursday	Pharmacology LGIS CV-Ph-003 Antiarrhythmic drugs	Physiology LGIS CV-P-004 ECG Changes in Angina Pectoris and Myocardial Infarction	Biochemistry LGIS CV-B-008 Type I to V Hyperlipidaemias		Histology LGIS CV-A-013 Arteries	Physiology LGIS CV-P-010 Nervous Regulation of circulation	Gross Anatomy Audiovisual Demonstration CV-A-003-b Venous and Lymphatic Drainage of Heart	Practical Batch D: Histology CV-A-019-a Elastic & Muscular arteries, arterioles Batch A: Physiology CV-P-018: Blood Pressure Batch B: Biochemistry CV-B-012: Interpretation Batch C: Skills Lab	
Friday	8:00 - 9:00	9:00 - 9:40	9:40 - 10:20	10:20 - 10:30	10:30 - 11:10	11:10 - 11:50	11:50 - 12:30	12:30 - 2 :00	2:00 - 3:00
	Gross Anatomy Audiovisual Demonstration CV-A-003-c Fibrous skeleton of Heart and Cardiac Plexuses	Behavioural Sciences LGIS CV-BhS-002 Emotional Fainting	Biochemistry LGIS CV-B-008 Type I to V Hyperlipidaemias	Break	Pathology LGIS CV-Pa-005 ischemic heart disease	Pharmacology LGIS CV-Ph-002 Antianginal Drug	Gross Anatomy SGD External and Internal Features of Heart with Vascular supply	Jummah Break	Self Directed Learning

	Week-5											
Days/ Time	8:00 - 9:00		9:00 - 9:45	09:45 - 10:30	10:30 - 11:00	11:00 - 11:45	11:45 - 12:30		12:30 - 1:15	1:15 - 3:00		
Monday	Biochemistry Test		Physiology LGIS CV-P-010 Nervous Regulation of Circulation	Biochemistry LGIS CV-B-008 Type I to V Hyperlipidaemias	Break	Pathology LGIS CV-Pa-002 Hypertension	Histology LGIS CV-A-014 Veins		Physiology LGIS CV-P-011 Rapid control of Arterial blood pressure	Practical Batch A: Histology CV-A-019-b Veins, Capillaries & Sinuses Batch B: Physiology CV-P-021 Arterial Pulse Batch C: Biochemistry CV-B-012 Interpretation of Lab reports Batch D: Skills Lab, Auscultation of Heart Sound		
Tuesday	SGIS Batch A: Anatomy External & internal features of heart with blood supply Batch B: Physiology CV-P-001: SA node Action Potential Batch C: Biochemistry CV-B-003: Lipid Peroxidation		PERL PERLs1-20 Stress Coping mechanisms	Biochemistry LGIS CV-B-010 Fat-Soluble Vitamins		Embryology LGIS CV-A-006-a & c Development of Ventricles, IV Septum + defects	Gross Anatomy SDG Revision of whole Mediastinum		Practical Batch B: Histology CV-A-019-b Veins, Capillaries & Sinuses Batch C: Physiology CV-P-021 Arterial Pulse Batch D: Biochemistry CV-B-012 Interpretation of Lab reports Batch A: Skills Lab, Auscultation of Heart Sound			
Wednesday	SGIS Batch A: Physiology CV-P-001: SA node Action Potential Batch B: Biochemistry CV-B-003: Lipid Peroxidation Batch C: Anatomy External & internal features of heart with blood supply		Physiology LGIS CV-P-011 Rapid Control of Arterial blood pressure	Biochemistry LGIS CV-B-010 Fat-Soluble Vitamins		Aging/Physiology LGIS CV-Ag-001 Effect of age on blood vessels with Reference to hypertension	Embryology LGIS CV-A-006-b Clinical significance of ASD with embryological basis, Patent Foramen ovale	Gross Anatomy SDG Revision of Fibrous Skeleton of Heart	Practical Batch C: Histology CV-A-019-b Veins, Capillaries & Sinuses Batch D: Physiology CV-P-021 Arterial Pulse Batch A: Biochemistry CV-B-012 Interpretation of Lab reports Batch B: Skills Lab, Auscultation of Heart Sound			
Thursday	SGIS Batch A: Biochemistry CV-B-003: Lipid Peroxidation Batch B: Anatomy External & internal features of heart with blood supply Batch C: Physiology CV-P-001: SA node Action Potential		Physiology LGIS CV-P-012 Kidney in long term Regulation of Arterial Blood Pressure	Biochemistry LGIS CV-B-011 Water-Soluble Vitamins		Embryology LGIS CV-A-006-d Development of Cardiac valves, Conducting & Lymphatic systems	Gross Anatomy SDG CV-A-003-d Surface marking of heart & Great Vessels		Practical Batch D: Histology CV-A-019-b Veins, Capillaries & Sinuses Batch A: Physiology CV-P-021 Arterial Pulse Batch B: Biochemistry CV-B-012 Interpretation of Lab reports Batch C: Skills Lab, Auscultation of Heart Sound			
Friday	8:00 - 9:00		9:00 - 9:40	9:40 - 10:20	10:20 - 10:30	10:30 - 11:10	11:10 - 11:50		11:50 - 12:30		12:30 - 2 :00	2:00 - 3:00
	Gross Anatomy/Medicine/Cardiology Audiovisual Demonstration CV-A-003-e Clinical corelates of arterial supply, Echocardiography, Angiography, Coronary Grafts, Angina & MI		Biochemistry LGIS CV-B-012 Minerals and trace elements		Break	Histology LGIS CV-A-015 & 016 Thrombus and embolus for mation, Arteriosclerosis, Atherosclerosis & Hypertension	Gross Anatomy/Cardiology Audiovisual Demonstration CV-A-002-f Anatomical correlation of ECG, Heart Block, AF and Valvular Heart Disease		Gross Anatomy SDG Revision of Cardiac Plexus		Jummah Break	Self Directed Learning

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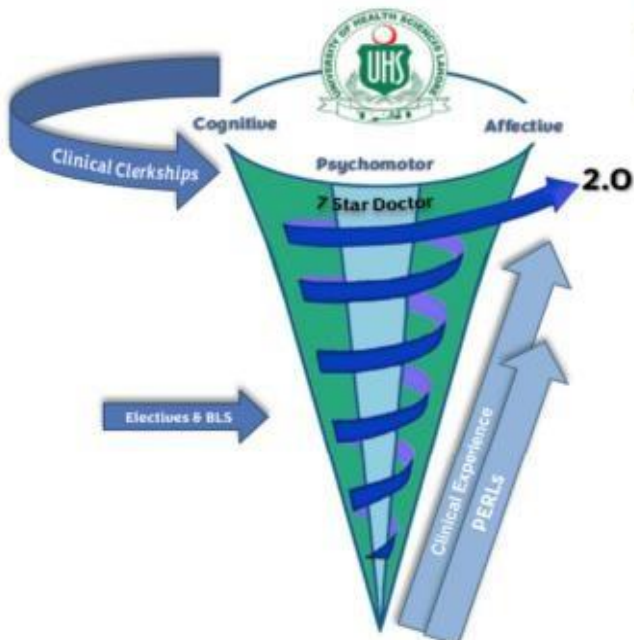
	Week-6								
Days/ Time	8:00 - 9:00	9:00 - 9:45	09:45 - 10:30	10:30 - 11:00	11:00 - 11:45	11:45 - 12:30	12:30 - 1:15	1:15 - 3:00	
Monday	SGIS Batch A: Anatomy: Mediastinum Batch B: Physiology CV-P-001 SA node Action Potential Batch C: Biochemistry CV-B-003: Lipid Peroxidation	Physiology LGIS CV-P-014 Skeletal Muscle Contraction	Biochemistry LGIS CV-B-012 Minerals and trace elements	Break	Embryology LGIS CV-A-007-a,b & c Development of Arteries with Clinical Correlations	Radiological Anatomy/ Radiology SGD CV-A-003-g Percussion and auscultation of heart, silent features of heart and great vessels on X-Ray, CT & MRI		Practical Batch A: Histology OSPE Practice Test Batch B: Physiology CV-P-022+021: JVP + Arterial Pulse Batch C: Biochemistry CV-B-012 Interpretation of lab reports Batch D: JVP, Abdominojugular reflux	
Tuesday	SGIS Batch A: Physiology CV-P-001 SA node Action Potential Batch B: Biochemistry CV-B-003: Lipid Peroxidation Batch C: Anatomy: Mediastinum	Physiology LGIS CV-P-013 Cardiac output	Biochemistry LGIS CV-B-012 Minerals and trace elements		Embryology LGIS CV-A-008 Development of Veins	Aging/Physiology LGIS CV-Ag-002 Risk of Cardiac attack in old age and weather conditions	Histology LGIS CV-A-017 Lymph vascular system	Practical Batch B: Histology OSPE Practice Test Batch C: Physiology CV-P-022+021: JVP + Arterial Pulse Batch D: Biochemistry CV-B-012 Interpretation of lab reports Batch A: JVP, Abdominojugular reflux	
Wednesday	SGIS Batch A: Biochemistry CV-B-003: Lipid Peroxidation Batch B: Anatomy: Mediastinum Batch C: Physiology CV-P-001 SA node Action Potential	Physiology LGIS CV-P-015 Coronary Circulation	Biochemistry LGIS CV-B-012 Minerals and trace elements		Pathology CASE BASE LEARNING	Pharmacology LGIS CV-Ph-004 Drugs for cardiac Failure	Embryology LGIS CV-A-009-a & b Fetal vessels and Circulation with clinicals	Practical Batch C: Histology OSPE Practice Test Batch D: Physiology CV-P-022+021: JVP + Arterial Pulse Batch A: Biochemistry CV-B-012 Interpretation of lab reports Batch B: JVP, Abdominojugular reflux	
Thursday	Anatomy Test/Stage	Physiology LGIS CV-P-016 Circulatory shock	Aging/Physiology CV-Ag-003 Effect of Age on valvular system of the heart		Aging/ ObsGyn CV-Ag-005 Protective role of female hormone on CVS disease	Physiology LGIS CV-P-016 Circulatory shock	Pathology LGIS CV-Pa-003 Shock	Practical Batch D: Histology OSPE Practice Test Batch A: Physiology CV-P-022+021: JVP + Arterial Pulse Batch B: Biochemistry CV-B-012 Interpretation of lab reports Batch C: JVP, Abdominojugular reflux	
Friday	8:00 - 9:00	9:00 - 9:40	9:40 - 10:20	10:20 - 10:30	10:30 - 11:10	11:10 - 11:50	11:50 - 12:30	12:30 - 2 :00	2:00 - 3:00
	Gross Anatomy SGD Gross OSPE Practice on All Available Resources		Physiology/Medicine LGIS CV-P-017 Heart Sound	Break	Community Medicine CV-CM-006+007 CVS Diseases as non-communicable diseases + risk factors assessment	Embryology LGIS CV-A-010 Congenital Heart Defects	Embryology/ ObsGyn LGIS CV-A-009 Fetal And neonatal circulation	Jummah Break	Self directed Learning



Rectangular Snip

MODULE NO. 05: RESPIRATORY-1

**MODULAR INTEGRATED
CURRICULUM 2K23** *version 2.0*



MODULE RATIONALE

The diseases related to the respiratory system are on the rise not only in developing countries but also in developed countries. The infant mortality rate in Pakistan is highest in Southeast Asia and one of the important reasons is common respiratory infections in children. With the world suffering from COVID-19 not only physically but also mentally, it is very important for medical students to study in detail the structures, functions, prevention, epidemiology, genetic basis of diseases and their management.

The respiratory system is responsible for bringing oxygen into the body and removing carbon dioxide. It is made up of several organs and structures, including the nose, pharynx, larynx, trachea, bronchi, lungs, and diaphragm.

MODULE OUTCOMES

- Apply basic sciences` knowledge to understand the causes of common respiratory problems.
- Explain the pathogenesis of respiratory diseases.
- Enlist the main investigations relevant to respiratory disorders.
- Recognize risk factors and preventive measures of main respiratory diseases.

THEMES

- Rib cage
- Thoracic vertebrae
- Upper respiratory system
- Lower Respiratory system

CLINICAL RELEVANCE

- Acute Respiratory Distress Syndrome
- Bronchial Asthma
- Tuberculosis
- Pneumonia

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 OF RESPIRATORY-1 MODULE



NORMAL STRUCTURE			
THEORY			
CODE	GROSS ANATOMY	TOTAL HOURS = 24	
	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
Re-A-001	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-A-002	Describe the anatomical features of the Trachea with its extent, relations, neurovascular supply and lymphatics.	Human Anatomy	Trachea
Re-A-003	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 outlet syndrome	Integrate with Surgery	
Re-A-004	Identify and differentiate the typical from atypical ribs.	Human Anatomy	Rib Cage
	Describe the anatomical features of ribs		
	Describe the anatomical correlates of supernumerary cervical rib.	Integrate with Surgery	
	Classify the articulations of the ribs.	Human Anatomy	
	Describe the anatomical features of these articulations.		
	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	Integrate with Orthopedics	
	Describe the anatomical correlates of Flail Chest.		
Re-A-005	Describe the anatomical correlates of Thoracotomy	Integrate with Surgery	Intercostal space
	Define the attachments, relations, nerve supply and actions of intercostal muscles	Human Anatomy	

	Define an intercostal space and give details of its contents		
Re-A-006	Describe the anatomical features of typical & atypical thoracic vertebrae.	Human Anatomy	Thoracic Vertebrae
	Differentiate between typical and atypical vertebrae		
	Explain the thoracic part of the vertebral column (normal curvature, intervertebral joints & fascia of the back, blood supply, lymphatic drainage, nerve supply of back) Associated Clinical conditions -Kyphosis, Scoliosis		
Re-A-007	Describe the bony features of the sternum	Human Anatomy	Sternum
	Describe the anatomical correlates of sternal biopsy. and sternotomy	Integrate with Surgery	
	Describe the presentation of sternal fractures and correlate it anatomically	Integrate with Orthopedics	
Re-A-008	Define endo thoracic fascia	Human Anatomy	Connective tissue of Thorax
	Describe the supra-pleural membrane with its attachments.		
Re-A-009	Classify the joints of the thorax mentioning their articulations, movements with the muscle producing them.		Joints of Thorax
	Describe the mechanics of inspiration and expiration		
Re-A-010	Describe the origin, course, relations and distribution of intercostal nerves and vessels		Neurovascular supply of Thorax
	Describe the alternate routes of venous drainage in blockage of superior/ inferior vena cava		
Re-A-011	Describe the cutaneous nerve supply and dermatomes of thorax.	Integrate with Medicine	Cutaneous nerve supply of Thorax
	Give anatomical justification of the manifestations of herpes zoster infection on thoracic wall.	Human Anatomy	
	Discuss anatomical correlates of intercostal nerve block	Integrate with Medicine	
Re-A-012	Name the parts of diaphragm mentioning their	Integrate with	Diaphragm

	attachments and neurovascular supply	Anesthesia	
	Explain the role of diaphragm in respiration	Human Anatomy	
	Enumerate the diaphragmatic apertures with their vertebral levels, mentioning the structures traversing them.		
Re-A-013	Describe the pleura giving its parts, layers, neurovascular supply, and lymphatic drainage	Human Anatomy	Pleural cavity
	Describe the pleural cavity giving its recesses and the lines of pleural reflection		
	Describe the anatomical correlates of pleural pain pleurisy, pneumothorax, pleural effusion		
	Describe the anatomical features, relations of lungs	Integrate with Medicine	
Re-A-014	Describe the neurovascular supply and lymphatic drainage of lungs.	Human Anatomy	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		
	Describe the anatomical correlates of chest tube intubation	Integrate with Surgery	
	Describe the anatomical correlates of thoracentesis		
	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	

THEORY			
CODE	EMBRYOLOGY & POST-NATAL DEVELOPMENT	TOTAL HOURS = 05	
	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
Re-A-015	Describe the development of ribs, sternum, and thoracic vertebrae. Give the associated congenital malformations	Human Embryology	Bony components of Thoracic cavity
Re-A-016	List the embryological sources of the diaphragm. Describe the events taking place in the development and descent of the diaphragm	Human Embryology	Diaphragm & Thoracic cavity
	Describe the development of Thoracic cavities (Pleural and Pericardial cavities)	Integrate with Pediatrics	
Re-A-017	Describe the development of upper respiratory tract: larynx and trachea	Human Embryology	Upper Respiratory Tract
	Describe congenital anomalies of Trachea-Tracheoesophageal fistulas of different types	Integrate with Pediatrics	
Re-A-018	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 of respiratory distress syndrome/Hyaline membrane disease, Ectopic Lung lobes, Congenital cysts of Lung	Integrate with Pediatrics	
THEORY			
CODE	MICROSCOPIC STRUCTURE	TOTAL HOURS = 04	
	SPECIFIC LEARNING OUTCOMES	DISCIPLINE	TOPIC
Re-A-019	Give the general histological organization of respiratory system.	Histology	Organization of respiratory system
Re-A-020	Describe the microscopic features of respiratory epithelium & Olfactory epithelium	Histology	Respiratory epithelium
Re-A-021	Describe histology of Nasopharynx	Histology	Nasopharynx
Re-A-022	Describe the histological features of epiglottis and larynx	Histology	Epiglottis & larynx

Re-A-023	Describe the histological features of trachea and lungs Describe histology of blood-air barrier	Histology	Trachea & lungs blood-air barrier
Re-A-024	Explain the histological basis of: 1. Laryngitis 2. Singer's nodules 3. Emphysema 4. Pneumonia 5. Atelectasis 6. Infant respiratory distress syndrome	Integrate with Pathology	Clinical correlates
			
CODE	HISTOLOGY	TOTAL HOURS = 05	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
Re-A-025	Identify, draw and label the histologic sections of epiglottis and larynx.	Histology	Epiglottis & Larynx
Re-A-026	Describe the histological features of bronchial tree: trachea, bronchi, bronchioles, alveoli		Trachea & Organization of Respiratory System
Re-A-027	Identify, draw and label the histological sections of bronchial tree: trachea, bronchi, bronchioles, alveoli, Lung		Bronchial tree & Lung
	Describe the mucosal changes encountered in the trachea-bronchial tree		
	Compare and contrast the histological features of various components of bronchial tree: trachea, bronchi, bronchioles, alveoli.		
Re-A-028	Describe, compare and contrast the light and electron microscopic features of type I and type II pneumocytes		Pneumocytes

NORMAL FUNCTION			
THEORY			
CODE	MEDICAL PHYSIOLOGY	TOTAL HOURS = 45	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
Re-P-001	Enlist the muscles of inspiration and expiration in quiet breathing	Integrate with Anatomy	Breathing
	Enlist the muscles of inspiration and expiration in labored breathing		
	Explain the components of the work of breathing	Medical Physiology	
	Discuss the mechanics of pulmonary ventilation		
	Explain periodic breathing		
	Explain the causes and pathophysiology of sleep apnea	Integrate with medicine	
Re-P-002	Define and explain lung compliance	Medical Physiology	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		
	Explain the role of surfactant in premature babies	Integrate with Pediatrics	
Re-P-003	Define the different lung volumes and capacities and their clinical significance	Medical Physiology	Lung volumes and Capacities
	Discuss Forced Expiratory Volume 1/ Forced Vital Capacity (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		
	Discuss FEV1/FVC ratio in relation to Bronchial Asthma.	Integrate with Pulmonology	
	Discuss FEV1/FVC ratio in relation to Chronic Obstructive Pulmonary disease/restrictive lung		

	diseases	Integrate with medicine	
	Discuss Forced Expiratory Volume 1/ Forced Vital Capacity (FEV1/FVC) ratio in relation to pulmonary embolism		
Re-P-004	Define alveolar ventilation.	Medical Physiology	Pulmonary ventilation
	Define minute respiratory volume		
	Describe the pressures in the pulmonary system.		
Re-P-005	Describe the blood volume of the Lungs	Medical Physiology	Pulmonary Circulation
	Describe the distribution and regulation of blood flow through the lungs.		
	Describe the mechanics of blood flow in the three blood flow zones of the lung		
	Describe the effect of heavy exercise on pulmonary arterial pressure.		
	Describe the function of pulmonary circulation when left atrial pressure rises as a result of left-sided heart failure.		
	Explain pulmonary capillary dynamics.		
Re-P-006	Discuss pathophysiology and common causes of pulmonary edema		Pulmonary Edema, and Pleural Fluid
	Explain the safety factors that prevent pulmonary edema.		
	Explain the physiological basis of the presence of fluid normally in the pleural cavity.		
	Define pleural effusion and give its causes.		
Re-P-007	Explain the ultrastructure of respiratory membrane	Medical Physiology	Principles of Gaseous Exchange
	Discuss the factors affecting diffusion of gases across the respiratory membrane		
	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-P-008	Explain the different forms of transport of oxygen in the blood	Medical Physiology	Transport of oxygen in the blood
Re-P-009	Draw and explain oxyhemoglobin dissociation curve		oxyhemoglobin dissociation curve
	Enlist the factors that cause the rightward shift of oxyhemoglobin dissociation curve		
	Enlist the factors that cause the leftward shift of oxyhemoglobin dissociation curve		
	Explain the Bohr's effect		Bohr's effect
	Define, enlist the types and causes of cyanosis	Integrate with Medicine	Cyanosis
Re-P-010	Enlist different forms in which Carbon dioxide CO ₂ is transported in the blood	Medical Physiology	Transport of CO ₂ in blood
	Explain carboxyhemoglobin dissociation curve		
	Explain the Haldane effect		
	Explain the chloride shift/Hamburger phenomenon		
	Define the respiratory exchange ratio (RER)		
Re-P-011	Explain the alveolar oxygen and carbon dioxide pressure when Pulmonary ventilation (V) and Perfusion (Q), VA/Q= infinity, zero, and normal	Medical Physiology	VA/Q (ventilation perfusion ratio)
	Explain the concept of physiological shunt when VA/Q ratio is above normal		
	Explain the concept of physiological dead space when VA/Q ratio is above normal		
Re-P-012	Enlist the respiratory and non-respiratory functions of the lung	Medical Physiology	Protective reflexes
	Explain the nervous control of bronchiolar musculature		
	Trace the reflex arc of cough reflex and sneeze reflex		
Re-P-013	Explain the principle means by which acclimatization occurs	Medical Physiology	Aviation and space
	Explain the events that occur during acute mountain sickness		
	Enlist the features of chronic mountain sickness		

Re-P-014	Explain the pathophysiology, features, prevention and treatment of decompression sickness.	Medical Physiology	Deep sea diving
Re-P-015	Draw and explain the effect of CO poisoning on oxyhemoglobin dissociation curve	Medical Physiology	Carbon monoxide poisoning
	Explain the pathophysiology, features, and treatment of CO poisoning.	Integrate with Medicine	
Re-P-016	Enumerate the components of respiratory centers and explain their functions.	Medical Physiology	Nervous regulation of respiration
	Explain the inspiratory RAMP signal		
	Explain the Herring Breuer reflex/lung inflation reflex and its clinical significance		
Re-P-017	Explain the location of chemo sensitive area (central chemoreceptors) and peripheral chemoreceptors	Medical Physiology	Chemical control of respiration
	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		
Re-P-018	Explain the regulation of Respiration during Exercise	Medical Physiology	Exercise and Respiration
Re-P-019	Enlist the effects of acute hypoxia	Medical Physiology	Hypoxia
	Explain the hypoxia inducible factor a master switch for body response to hypoxia		
	Define and explain different types of hypoxias	Integrate with Medicine	
Re-P-020	Explain the pathophysiology of Tuberculosis.	Integrate with Pathology	Tuberculosis
Re-P-021	Describe the pathophysiology of Pneumonia	Integrate with Pathology	Pneumonia
Re-P-022	Define Dyspnea	General Medicine	Dyspnea
	Enlist different causes of dyspnea		
	Differentiate between cardiac and respiratory dyspnea		
	Outline management strategies for dyspnea		
Re-P-023	Enlist the causes of Pneumothorax	Integration	Pneumothora

	Describe the signs and symptoms of Pneumothorax	with Surgery	x
Re-P-024	Enlist the causes of Pleuritis		Pleuritis
	Describe the signs and symptoms of Pleuritis		
	Discuss the management of Pleuritis		
Re-P-025	Enlist the causes of Bronchitis	Integration with General Medicine	Bronchitis
	Discuss the signs and symptoms of Bronchitis		
	Discuss the management of Bronchitis		
Re-P-026	Classify different types of pneumonia		Pneumonia
	Discuss the sign symptoms of pneumonia		
	Discuss the management of pneumonia		
Re-P-027	Classify different types of asthma		Asthma
	Discuss the signs and symptoms of asthma		
	Discuss the management of asthma		
Re-P-028	Classify different types of Tuberculosis		Tuberculosis
	Discuss the signs and symptoms of tuberculosis		
	Discuss the management of Tuberculosis		
Re-P-029	Classify different types of acute respiratory distress syndrome	Integration with General Medicine	Acute respiratory distress syndrome
	Discuss the signs and symptoms of acute respiratory distress syndrome		
	Discuss the management of acute respiratory distress syndrome		
Re-P-030	Define respiratory failure	Integration with General Medicine	Respiratory Failure
	Describe various types of respiratory failure		
	Enlist various causes of respiratory failure		
	Outline management strategies of respiratory failure		
Re-P-031	Describe ABC in a trauma patient	Integration with Surgery	First Aid in Surgical Patients
THEORY			
CODE	MEDICAL BIOCHEMISTRY	TOTAL HOURS = 14	
	SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TOPIC
Re-B-001	Explain and interpret the pedigree of single gene	Medical Biochemistry	Genetic defects

	defect i.e., Emphysema and cystic fibrosis (autosomal recessive)		
Re-B-002	Describe the biochemical basis of emphysema, Chronic obstructive pulmonary disease (COPD) and cystic fibrosis	Medical Biochemistry	Respiratory diseases
	Interpret Respiratory Distress syndrome on the basis of given data	Integrate with Physiology	
Re-B-003	Discuss the concept of acid base balance	Medical Biochemistry	Acid base balance
	Interpret metabolic and respiratory disorders of acid base balance on the basis of sign, symptoms and ABG findings		
	Describe the Clinical interpretation of acid base balance	Integrate with Medicine	
PRACTICAL			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 10	
		DISCIPLINE	TOPIC
Re-P-039	Perform the clinical examination of chest for the respiratory system (inspection, palpation, percussion, Auscultation)	Medical Physiology	Clinical Examination of Chest
Re-P-040	Determine lung volumes and capacities with spirometer		Peak Expiratory Flow rate measurement
Re-P-041	Determine Blood Oxygen Saturation with finger Pulse Oximeter		Oxygen Saturation
Re-P-044	Perform Cardio pulmonary Resuscitation (CPR) on adult and infant.		CPR
Re-B-005	Determine the pH of the solution by pH meter	Medical Biochemistry	Determination of pH

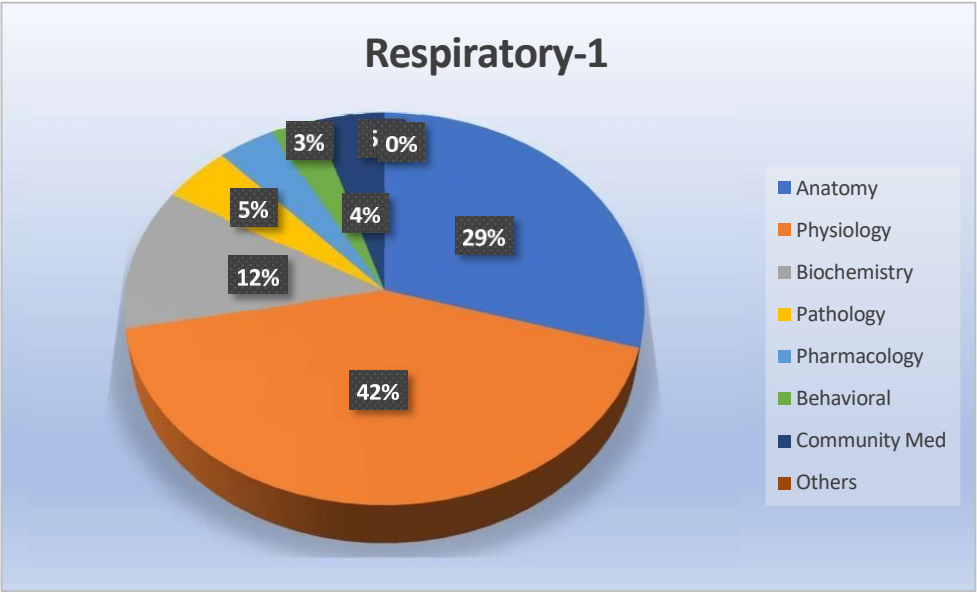
PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS			
THEORY			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 5+3=08	
		DISCIPLINE	TOPIC
Re-Ph-001	Identify the drugs for cough suppression & expectoration	Pharmacology & Therapeutics	Cough Suppressants
	Explain the mechanism of action and adverse effects of cough 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		Anti asthmatics
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	Describe the pathophysiology of Restrictive Lung Disease		Restrictive Lung Disease
DISEASE PREVENTION & IMPACT			
THEORY			
CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 10	
		DISCIPLINE	TOPIC
Re-CM-001	Identify the common risk factors of acute respiratory infections with emphasis on smoking	Community Medicine and Public Health	Prevention of acute Respiratory Infections (ARI)
	Discuss preventive strategies of different problems related to respiratory system		
	Enlist the common vaccines used for the prevention of ARI		
	Explain the role of vitamins in the respiratory tract	Integrate with	

	infections	Biochemistry	
Re-CM-002	Explain the effect of air pollutants on the respiratory system		Interaction of environment & Respiratory System
Re-CM-003	Describe the burden of respiratory diseases	Community Medicine and Public Health	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.	Behavioral Sciences	Dyspnea
Re-BhS-002	Identify the psychosocial factors leading to psychogenic cough.		Psychogenic Cough
Re-BhS-003	Identify 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

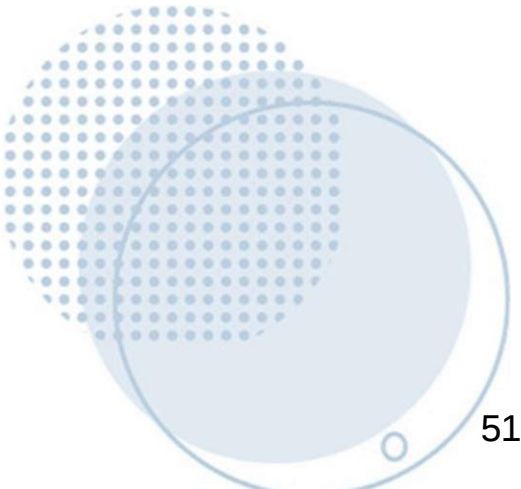
AGING

THEORY

CODE	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 03	
		DISCIPLINE	TOPIC
Re-Ag-001	Discuss the biochemical basis of respiratory infections in old age in cold weather	Pathology	Respiratory infections in old age
Re-Ag-002	Discuss the role of age on respiratory clearance leading to recurrent inflammatory processes at the ciliated respiratory epithelium		Increased vulnerability to infection & neoplasia
	Describe the biochemical basis of emphysema, COPD and cystic fibrosis		Respiratory diseases



Module Weeks	Recommended Minimum Hours
04	128



QUEENS MEDICAL COLLEGE, KASUR

Timetable 1st Year MBBS (Session-2024-25)

28th October 2025 – 14th November 2025

Module -Respiratory System

Week 1:

	8:00- 9:00	9:00 – 9:45	9:45- 10:30	10:30 – 11:15	11:15-11:45	11:45 – 12:15	12:15-12:45	12:45 – 3:00	
Monday	CVS MODULE Theory Paper 8:00 am - 10:00 am 40 MCQs + 2 stations = 50 marks Pharmacology, Pathology, Community Medicine, Behavioural Sciences, PERL, CSF		BIOCHEMISTRY LGIS Re-B-xxx Topic: Pedigree of single gene defect Teacher:	PHYSIOLOGY LGIS Re-P-005 Topic: Pulmonary circulation	Break	Histology-LGIS Re-A-019 Organization of Respiratory System	PHYSIOLOGY LGIS Re-006 Topic pulmonary edema	Practical Batch A: Histology Re-A-026 Trachea & Organization of Respiratory System (Dr. Mahwish) Batch B: : Physiology Spirometry Batch C: Biochemistry: pH metre	
Tuesday	SGIS Batch 1: Anatomy Re-A-002 Gross Anatomy of Trachea Batch 2: Physiology Pulmonary Circulation Batch 3: Biochemistry: Pedigree of single gene defect (Autosomal recessive) Batch 4: CSF: Examination of Chest	PHYSIOLOGY LGIS Re-P-001 Topic Breathing	BIOCHEMISTRY LGIS Re-B-xxx Topic: Emphysema and cystic fibrosis(autosomal recessive	Histology-LGIS Re-A-020 Respiratory Epithelium		Histology-LGIS Re-A-020 Respiratory Epithelium	Gross Anatomy - Audiovisual Demonstration Re-A-001 Anatomical Features & Neurovascular Supply of Nasal Cavity, Pharynx & Larynx	Practical Batch C: Histology Re-A-026 Trachea & Organization of Respiratory System (Dr. Mahwish) Batch A : Physiology Spirometry Batch B: Biochemistry: pH metre	
Wednesday	SGIS Batch 4: Anatomy Re-A-002 Gross Anatomy of Trachea Batch 1 : Physiology Pulmonary Circulation Batch 2: Biochemistry: Pedigree of single gene defect (Autosomal recessive) Batch 3: CSFCSF Examination of Chest	PHYSIOLOGY LGIS Re-P-002 Topic Lung compliance	BIOCHEMISTRY LGIS Re-B-xxx Topic: Biochem: basis of Emphysema	PHYSIOLOGY LGIS Re-P-001 Topic Breathing		PERL Workshop PERL 1-17 Developing an Argument	Histology-LGIS Re-A-021 Nasopharynx	Practical Batch B: Histology Re-A-026 Trachea & Organization of Respiratory System (Dr. Mahwish) Batch C: Physiology Spirometry Batch A: Biochemistry: pH metre	
Thursday	SGIS Batch 3: Anatomy Re-A-002 Gross Anatomy of Trachea Batch 4: Physiology Pulmonary Circulation Batch 1: Biochemistry: Pedigree of single gene defect (Autosomal recessive) Batch 2: CSF Examination of Chest	PHYSIOLOGY LGIS Re-P-003 Topic Lung volumes and capacities Teacher Prof.Dr. M. Shahid	BIOCHEMISTRY LGIS Re-B-xxx Topic: Biochem: basis of COPD	PHYSIOLOGY LGIS Re-P-002 Topic Lung compliance		COMMUNITY MED LGIS Re-CM-xxx Prevention of acute respiratory infection ARI	PHYSIOLOGY LGIS Re-P-012 Topic protective reflexes	Gross Anatomy - SGD Re-A-003 Thoracic Cavity with clinicals Batch-A (Dr. Mahrukh) Batch-B	
Friday	8:00- 9:00	9:00-9:40	9:40- 10:20	10:20-11:00	11:00-11:40	11:40-12:20	12:20-01:00	01:00– 1:30	1:30-3:00
	Batch 2: Anatomy Re-A-002 Gross Anatomy of Trachea Batch 3: Physiology Batch 4: Biochemistry: Pedigree of single gene defect (Autosomal recessive) Batch 1: CSF Examination of Chest	BEHAVIOURAL SCIENCES Re-Bs-001 Psychosocial aspect of dyspnea	PHYSIOLOGY LGIS Re-P-007 Topic Principles of Gaseous Exchange	PATHOLOGY LGIS Re-Pa-xxx Topic Acute respiratory distress syndrome	Break	PHARMACOLOGY LGIS Re-Ph-001 Bronchial Asthma	Histology-LGIS Re-A-022 Epiglottis & Larynx	Jumma Prayer	Self Directed Learning

Week -2

	8:00- 900	9:00 – 9:45	9:45- 10:30	10:30 – 11:15	11:15-11:45	11:45 – 12:15	12:15-12:45	12:45 –3:00	
Monday	PATHOLOGY/AGING LGIS Re-Pa-xxx Topic: obstructive lung diseases (pathophysiology)	PHYSIOLOGY LGIS Re-P-xxx Topic:Hypoxia/Cyan osis	BIOCHEMISTRY LGIS Re-B-xxx Topic: Bichem: basis of cystic fibrosis	PHYSIOLOGY LGIS Re-P-xxx Topic: Provides of gas exchange II	Break	Histology- LGIS Re-A- 023 Trachea, Lungs & Blood Air Barrier	PHYSIOLOGY LGIS Re-P-xxx Topic: Alveolar ventilation	Practical Batch A: Histology Re-A-025 Epiglottis & Larynx Batch B: : Physiology Stethography Batch C: Biochemistry: Block-I OSPE Revision	
Tuesday	SGIS Batch 1: Gross Anatomy Re-A- 006 & 007 THORACIC VERTEBRAE & STERNUM Batch 2: Physiology Mechanics of Respiration Batch 3: Biochemistry: Biochem: basis of Emphysema COPD & cystic fibrosis Batch 4: CSF	PHYSIOLOGY LGIS Re-P-xxx Topic: Composition of Alveolar and Diffusion through	BIOCHEMISTRY LGIS Re-B-xxx Topic:Respiratory Distress Syndrome	Histology-LGIS Re-A-024 LGIS Re-P-xxx Topic: histological basis of Respiratory Clinical Conditions		Gross Anatomy - SGD Re-A-004 & 005 Rib Cage & Intercostal Spaces Batch-A Batch-B Batch-C		Practical Batch C: Histology Re-A-025 Epiglottis & Larynx (Dr. Mahwish) Batch A : Physiology Stethography Batch B: Biochemistry: Block-I OSPE Revision	
Wednesday	SGIS Batch 4: Gross Anatomy Re-A- 006 & 007 THORACIC VERTEBRAE & STERNUM Batch 1 : Physiology Mechanics of Respiration Batch 2: Biochemistry: Biochem: basis of Emphysema COPD & cystic fibrosis Batch 3: CSF	PHYSIOLOGY LGIS Re-P-xxx Topic: Emphysema & premonic	BIOCHEMISTRY LGIS Re-B-xxx Topic: RDS	PHYSIOLOGY LGIS Re-P-xxx Topic: Measurement of diffusing capacity Teacher:		Embryology-LGIS Re-A-015 Development of bony component of thoracic cavity with congenital malformations	Gross Anatomy - Audiovisual Demonstration Re-A- 008 Connective tissues of thorax	Practical Batch B: Histology Re-A-025 Epiglottis & Larynx (Dr. Mahwish) Batch C: Physiology Stethography Batch A: Biochemistry: Block-I OSPE Revision	
Thursday	SGIS Batch 3: Gross Anatomy Re-A-006 & 007 THORACIC VERTEBRAE & STERNUM Batch 4: Physiology Mechanics of Respiration Batch 1: Biochemistry: Biochem: basis of Emphysema COPD & cystic fibrosis Batch 2: CSF	PHYSIOLOGY LGIS Re-P-xxx Topic: Atelectasis/ Asthma	BIOCHEMISTRY LGIS Re-B-xxx Topic: Acids, Base & Buffer system	PHYSIOLOGY LGIS Re-P-xxx Topic: Transport of Co2 Teacher:		COMMUNITY MEDICINE LGIS Re-CM-xxx Topic Epidemiology of Respiratory	PHYSIOLOGY LGIS Re-P-xxx Topic: Diffusion of O2 and Co2	Gross Anatomy - Audiovisual Demonstration Re-A- 009 Joints of thorax & mechanics of inspiration & expiration	
Friday	8:00- 9:00	9:00-9:40	9:40- 10:20	10:20-11:00	11:00-11:40	11:40-12:20	12:20-01:00	01:00-- 1:30	1:30-3:00
	SGIS Batch 2: Gross Anatomy Re-A-006 & 007 THORACIC VERTEBRAE & STERNUM (Dr. Naffay) Batch 3: Physiology Mechanics of Respiration Batch 4: Biochemistry: Biochem: basis of Emphysema COPD & cystic fibrosis Batch 1: CSF	BEHAVIOURAL SCIENCES Re-Bs-002 Topic: Psychosocial aspects of psychogenic cough	PHYSIOLOGY LGIS Re-P-xxx Topic: Tuberculosis Teacher:	PATHOLOGY LGIS Re-Pa-xxx Topic: Restrictive Lung diseases Teacher	Break	PHARMACOLOGY LGIS Re-P-xxx Topic Teacher		Jumma Prayer	Self-Directed Learning

Week 3

	8:00 - 9:15	9:15- 10:00	10:00-10:45	10:45-11:15	11:15-12:00	12:00- 12:45	12:45-1:30	1:30-03:00
Monday	CSF TEST		BIOCHEMISTRY LGIS Re-B-xxx Topic: Acids, Base, Balance & Imbalance Teacher:	B	PHYSIOLOGY LGIS Re-P-008 Topic: Transport of Co2 Teacher:	Histology-LGIS Re-A-024 Histological basis of Respiratory Clinical Conditions	PHYSIOLOGY LGIS Re-P-011 Topic: Ventilation/ Perfusion ratio	Practical Batch A: Histology Re-A-027 Bronchial tree: Trachea, Bronchi, Bronchioles, Alveoli, Lung (Dr. Mahwish) Batch B: : Physiology Spirometry Batch C: Biochemistry: Block-II OSPE Revision
Tuesday	SGIS Batch 1: Gross Anatomy Re-A-014 LUNGS Batch 2: Physiology Diffusion of Gases Batch 3: Biochemistry: RDS syndrome Batch 4: CSF	PHYSIOLOGY LGIS Re-P-016 Topic: Regulation of Respiration I	BIOCHEMISTRY LGIS Re-B-xxx Topic: Metabolic Acidosis & Alkalosis	R	Embryology-LGIS Re- A-016 Development of Diaphragm, Pleural & Pericardial Cavities Dr. Hanif	Gross Anatomy - SGD Re-A- 012 Diaphragm		Practical Batch C: Histology Re- A-027 Bronchial tree: Trachea, Bronchi, Bronchioles, Alveoli, Lung (Dr. Mahwish) Batch A : Physiology Spirometry Batch B: Biochemistry: Block-II OSPE Revision
Wednesday	SGIS Batch 4: Gross Anatomy Re-A-014 LUNGS Batch 1 : Physiology Diffusion of Gases Batch 2: Biochemistry: RDS syndrome Batch 3: CSF	PHYSIOLOGY LGIS Re-P-017 Topic: Regulation of Respiration II:	BIOCHEMISTRY LGIS Re-B-xxx Topic: Disorders of Meta: Acidosis & Alkalosis Teacher:	E	PHYSIOLOGY LGIS Re-P-010 Topic: Transport of CO2 Teacher:	Gross Anatomy - SGD Re-A- 013 Pleural Cavity		Practical Batch B: Histology Re- A-027 Bronchial tree: Trachea, Bronchi, Bronchioles, Alveoli, Lung (Dr. Mahwish) Batch C: Physiology Spirometry Batch A: Biochemistry: Block-II OSPE Revision
Thursday	SGIS Batch 3: Gross Anatomy Re-A-014 LUNGS Batch 4: Physiology Diffusion of gases Batch 1: Biochemistry: RDS syndrome Batch 2: CSF	PHYSIOLOGY LGIS Re-P-015 Topic: CO poisoning	Embryology-LGIS Re-A-017 Development of Upper Respiratory Tract (larynx & trachea) with congenital anomalies	A	PHYSIOLOGY LGIS Re-P-015 Topic: OXY-hB-Curve:	COMMUNITY MEDICINE LGIS Re-CM-xxx Topic Occupational Diseases	PHYSIOLOGY LGIS Re-P-018 Topic: Respiration during exercise	Gross Anatomy-Tutorial Diaphragm Batch-A (Dr. Junaid) Batch-B () Batch-C

	8:00- 9:00	9:00- 9:40	9:40- 10:20	10:20-10:30	10:30-11:10	11:10-11:50	11:50-12:30	12:30-1:00	1:00-03:00
Friday	SGIS Batch 2: Gross Anatomy Re-A-014 LUNGS Batch 3: Physiology Diffusion of Gases Batch 4: Biochemistry: RDS syndrome Batch 1: CSF	BEHAVIOURAL SCIENCES Re-Bs-003Topic :impact on individual, family, society of Asthma, TB.	PHYSIOLOGY LGIS Re-P-009 Topic: Bohr's Effect	K	PATHOLOGY LGIS Re-Pa-xxx Tuberculosis & cystic fibrosis Pathogenesis & Diagnosis	PHARMACOLOGY LGIS Re-P-xxx Cough suppressants	Embryology-LGIS Re-A-018 Development of Lungs with Clinicals	Jumma Prayer	Self-Directed Learning

Week : 4

	8:00 - 9:15	9:15- 10:00	10:00-10:45	10:45-11:15	11:15-12:00	12:00- 12:45	12:45-1:30	1:30-03:00
Monday	PHYSIOLOGY TEST		BIOCHEMISTRY LGIS Re-B-xxx Topic: Respiratory Acidosis & alkalosis	B	PHYSIOLOGY LGIS Re-P-022 Topic: Dyspnea	Gross Anatomy Rib cage, Sternum, Thoracic Vertebrae, Thoracic cavity, joints and Mechanism of inspiration & expiration Revision session by using all resources	PHYSIOLOGY LGIS Re-P-023 Topic: pneumothorax Teacher:	Practical Batch A: Anatomy (Paper Discussion), Batch B: : Physiology Transport of O2 and CO2 Batch C: Biochemistry: Block-III OSPE Revision
Tuesday	SGIS Batch 1: Viva Exam-Embryo & Histo (Respiratory Module) Batch 2: Physiology Regulation of Respiration Batch 3: Biochemistry: Acid, Base, Balance Batch 4: CSF	PHYSIOLOGY LGIS Re-P-013 Topic: Acclimatisation	BIOCHEMISTRY LGIS Re-B-xxx Topic: Interpret Acid, Base Disorders on the basis of sign & symptoms	R	Gross Anatomy - Tutorial-1 Rib Cage, Intercostal Spaces, Sternum and Thoracic Vertebrae Batch-A (Dr. Naffay) Batch-B		Audiovisual Session-Histology Re-A-028 Pneumocytes	Practical Batch C: Anatomy (Paper Discussion) Batch A : Physiology Transport of O2 and CO2 Batch B: Biochemistry: Block-III OSPE Revision
Wednesday	SGIS Batch 4: Viva Exam-Embryo & Histo (Respiratory Module) Batch 1 : Physiology Regulation of Respiration Batch 2: Biochemistry: Acid, Base, Balance Batch 3: CSF	PHYSIOLOGY LGIS Re-P-013 Topic: Mountain sickness	Gross Anatomy Pleural Cavity, Diaphragm and Lungs Revision session by using all resources	E	PHYSIOLOGY LGIS Re-P-024 Topic: pleuritis	Gross Anatomy - Tutorial-2 Thoracic Cavity & Joint Mechanism of inspiration & Expiration Batch-A () Batch-B () Batch-C ()		Practical Batch B: Anatomy (Paper Discussion), Dr Batch C: Physiology Transport of O2 and CO2 Batch A: Biochemistry: Block-III OSPE Revision
Thursday	SGIS Batch 3: Viva Exam-Embryo & Histo (Respiratory Module) Batch 4: Physiology Regulation of Respiration Batch 1: Biochemistry: Acid, Base, Balance Batch 2: CSF	PHYSIOLOGY LGIS Re-P-014 Topic: Decompression sickness	Gross Anatomy - Tutorial-3 Upper respiratory tract, Trachea, Neurovascular and cutaneous nerve supply of thorax	A	PHYSIOLOGY LGIS Re-P-025,030 Topic: Bronchitis/ Respiratory failure	COMMUNITY MEDICINE LGIS Re-CM-xxx Topic Occupational Diseases	PHYSIOLOGY LGIS Re-P-030 Topic: Respiratory failure	Gross Anatomy - Tutorial-4 Pleural Cavity with clinicals Batch-A (Dr. Junaid) Batch-B () Batch-C ()

	8:00- 9:00	9:00- 9:40	9:40- 10:20	0	10:30-11:10	11:10-11:50	11:50-12:30	12:30-2:00	02:00-3:00
Friday	SGIS Batch 2: Viva Exam-Embryo & Histo (Respiratory Module) Batch 3: Physiology Regulation of Respiration Batch 4: Biochemistry: RDS syndrome Batch 1: CSF	Re bhs 003 Topic Psychosocial aspect of cystic fibrosis and sleep apnea	PHYSIOLOGY LGIS Re-P-xxx Topic: Paper Discussion Teacher:	K	PATHOLOGY LGIS Re-Pa-xxx Case discussion Pneumonia Pathogenesis & diagnosis biochemical basis of respiratory infections in old age in cold weather	PHARMACOLOGY LGIS Re-P-xxx Anti Histamines (Mechanism of Action, Adverse effects)	Gross Anatomy - Tutorial-5 Lungs with clinicals Batch-A () Batch-B () Batch-C ()	Jumma Prayer	Self-Directed Learning

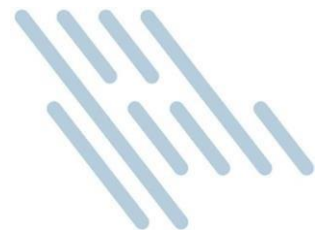
Respiratory Module

Anatomy:	$23.25 + 6 + 6 + 1.5 = 35.25 + 1.5 =$ 36.75
Physiology:	41.75
Biochemistry:	24
Pathology:	$2.25 + 2.25 = 4.5$
Pharmacology:	2.25
Community Medicine:	3
Behavioural Sciences:	2.25
CSF:	6
PERL:	1.5
SDL:	3
Jumma prayer:	3.5

TOTAL: 128.5 Hours

MBBS 2nd Professional
Block-6

Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (8 marks each observed)	OSVE (16 marks each observed)	Marks
Normal Structure	Anatomy applied/clinical	24	03	39	03	-	01	40
Normal Function	Physiology applied/clinical	26	03	41	03	-	01	40
	Biochemistry applied/clinical	09	01	14	01	-	01	24
Disease Burden & Prevention	Community Medicine & Public Health	04	-	04	-	-	-	-
	Behavioral Sciences	03	-	03	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	12	-	12	-	-	-	-
	Pharmacology	07	-	07	-	-	-	-
CFRC	CF-2-3	-	-	-	-	01	-	08
PERLs	PERLs-2-3	-	-	-	-	01	-	08
Total		85	7x5=35	120	07 stations x 08 = 56	02 stations x 08 = 16	03 stations x 16=48	120



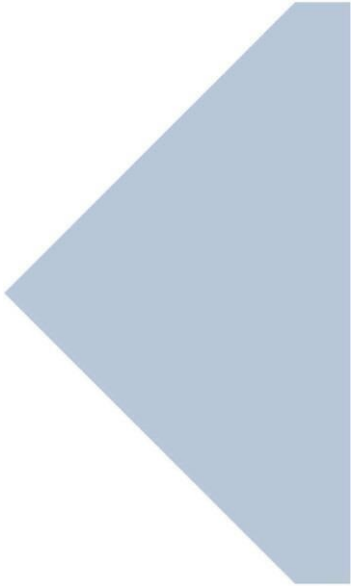
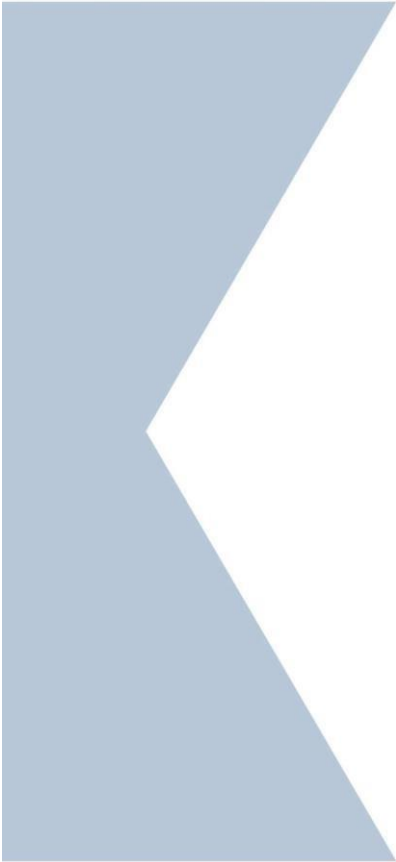
Respiratory Module

Anatomy:	$23.25 + 6 + 6 + 1.5 = 35.25 + 1.5 = 36.75$
Physiology:	41.75
Biochemistry:	24
Pathology:	$2.25 + 2.25 = 4.5$
Pharmacology:	2.25
Community Medicine:	3
Behavioural Sciences:	2.25
CSF:	6
PERL:	1.5
SDL:	3
Jumma prayer:	3.5

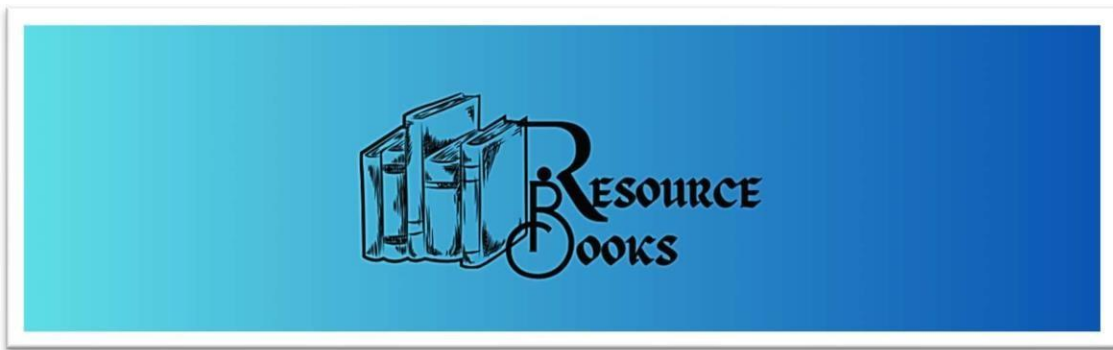
TOTAL: 128.5 Hours

MBBS 2nd Professional
Block-6

Theme	Subject	Written Exam			Oral/Practical/Clinical Exam			
		MCQ (1 mark)	SEQ (5 mark each)	Marks	OSPE (8 marks each observed)	OSCE (8 marks each observed)	OSVE (16 marks each observed)	Marks
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	Biochemistry applied/clinical	09	01	14	01	-	01	24
Disease Burden & Prevention	Community Medicine & Public Health	04	-	04	-	-	-	-
	Behavioral Sciences	03	-	03	-	-	-	-
Pathophysiology & pharmacotherapeutics	Pathology	12	-	12	-	-	-	-
	Pharmacology	07	-	07	-	-	-	-
CFRC	CF-2-3	-	-	-	-	01	-	08
PERLs	PERLs-2-3	-	-	-	-	01	-	08
Total		85	7x5=35	120	07 stations x 08 = 56	02 stations x 08 = 16	03 stations x 16=48	120



List of Resources



Anatomy

- Snell's Clinical Anatomy 10th ed.
- Langman's Medical Embryology 12th ed
- Medical Histology
- General Anatomy

Physiology

- Guyton AC and Hall JE. Textbook of Medical Physiology. W. B. Saunders & Co., Philadelphia 14th Edition.
- Essentials of Medical Physiology by Mushtaq Ahmed

Biochemistry

- Harpers illustrated Biochemistry 32nd edition. Rodwell.V.W MCGrawHill publishers.
- Lippincott illustrated Review 8th edition Kluwer.W.
- Essentials of Medical Biochemistry vol 1&2
- Pathology
- Vinary Kumar, Abul K. Abbas and Nelson Fausto Robbins and Cotran, Pathologic basis of disease. WB Saunders.
- 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.

Medicine

- Davidson's Principles and Practice of Medicine

Pharmacology

- Basic and Clinical Pharmacology by Katzung, McGraw-Hill.
- Pharmacology by Champe and Harvey, Lippincott Williams & Wilkins

Behavioural Sciences

- Handbook of Behavioural Sciences by Prof. Mowadat H.Rana, 3rd Edition
- Medical and Psychosocial aspects of chronic illness and disability SIXTH EDITION by Donna R.Falvo, PhD
Beverly E.Holland, PhD, RN

Community medicine

- Parks Textbook of Preventive and Social Medicine. K. Park (Editor)
- Public Health and Community Medicine



BLOCK-03

CARDIOVASCULAR-1 MODULE

Objectives	Skill	Miller's Pyramid Level Reflected
Auscultation of heart sounds	Heart sounds	Shows
Detection of ankle swelling/edema – pitting /non-pitting	Edema	Shows
Abdominal jugular reflex	JVP	Shows
Perform detection of pedal and carotid pulses	Pedal and carotid pulse	Shows
Perform cervical and axillary lymph node examination	Lymph node Examination	Shows

BLOCK-6

Code	Domain	Attribute	Specific Learning Outcome	Topic	Portfolio Entry
PERLs- 2-16	Professionalism	Self-Aware	Build a rapport with a stable patient	Rapport building Basics of Negotiation	Written report on patient encounter
PERLs- 2-17		Communicator	Demonstrate non-verbal, verbal communication skills with stable patients	Communication skills with the patients Appropriate verbal communication and appropriate non-verbal communication grounded in culture and context	Communication skills checklist filled by the observer
PERLs- 2-18	Leadership	Resilient & Adaptable	Demonstrate patience and tolerance with patients' relatives	Explaining decisions to relatives in terms that they understand Cultural and language sensitivity Art and science of listening	Reflection on encounter with patient attendants in a ward setting
PERLs- 2-19		Self-Directed Learner	Seek active feedback from peers and teachers	Difference between reflection and Feedback Techniques of receiving feedback	Feedback request generated by the student in specific areas and the reflection on the response received
PERLs- 2-20			Seek membership in one of the student clubs or societies within or outside the institution.	Medical Societies and clubs that provide membership to the student Bylaws, formation and registration of societies and clubs	Membership proof of any one club or society
PERLs- 2-	Research	Writer &	Write a literature	Structuring of a	Literature review



21		Presenter	review	literature review Academic writing essentials Plagiarism and its types	of at least 2000 words
PERLs- 2- 22			Make a poster of the literature review	Anatomy of an academic poster Presenting a poster in academia	Poster



Develop & Design by:

- Lt. Col. (R) Dr. Khalid Rahim Khan
- Dr. Saima Chaudry



MODULAR INTEGRATED

CIRRCULUM2K23

version 2.0



PLANNER
YEAR 1