

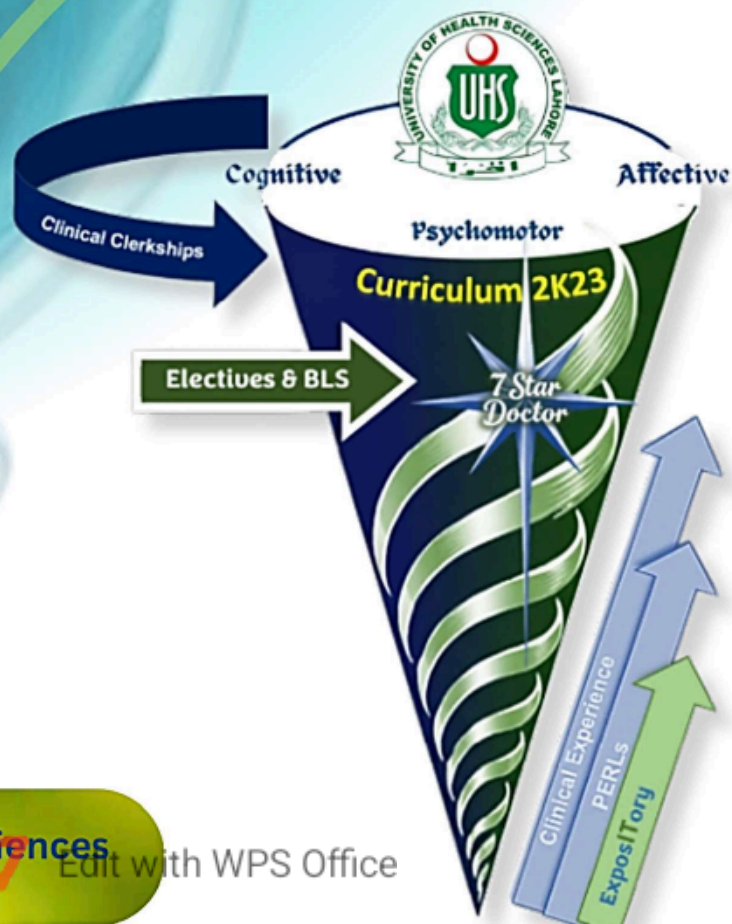


**MBBS
YEAR
01**

Volume-01



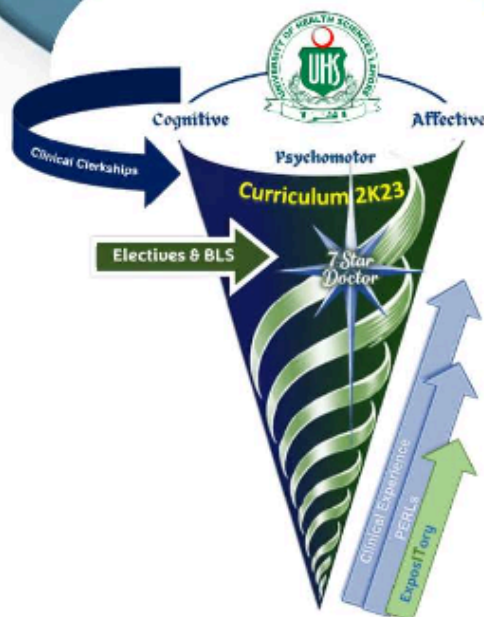
**Modular Integrated
Curriculum 2K23**
Final Version





Modular Integrated Curriculum 2K23 MBBS Year-01

BLOCK-3



Sialkot–Pakistan

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BLOCK LEAD DETAILS

I am Dr. Sadia Javaid, currently serving as Assistant Professor in the Department of Physiology at Islam Medical College.

I did my MBBS from FJMU Lahore, completed my House Job from Sir Ganga Ram Hospital, Lahore. I completed my M-Phil in Physiology from University of Health Sciences, Lahore and hold a certificate in health professions education (CHPE) from University of Liverpool, UK. Currently, I am performing as Block-3 Lead for 1st Year MBBS (Session 2026), overseeing academic coordination and student facilitation for the block.

I am available for meetings in the Department of Physiology, Academic Block 1, from 08:00 to 15:00 hours on weekdays. I may also be contacted via email at drs73@gmail.com for academic correspondence or appointments.

BLOCK 3
Cardiovascular-1 &
Respiratory-1
Study Guide

**Modular Integrated
Curriculum 2K23**
Volume-01

MODULE

04

CARDIOVASCULAR-I



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.

The University of Health Sciences Vision

UHS is a leading University aiming to keep its graduates apt with the ever-emerging global health challenges, evolving educational methodologies and emerging technological advancements to maintain its distinguishable position as a Medical University. (<https://www.uhs.edu.pk/vision-mission.php>)

Islam Medical College Vision and Mission

Vision

We shall be committed not only to provide health facility to the poor masses of the area with modernized trends of medicine and equipment's of international standards, but also to train the young doctors on the lines of the community needs and requirements. (<https://mimdc.edu.pk/vision-mission>)

MISSION

To create a diverse and vibrant graduates scholar in medical discipline and to create highly competent and committed physicians for the country.

Curricular Outcomes (PLOs)

The PLOs are articulated in view of the desirable competencies of our graduates. Following are the PLOs of MBBS Program desired to highlight the attributes amongst our graduates after their graduation

PLO-1 Demonstrate the ability to independently manage non-critical clinical problems (Knowledge, Skill)

PLO-2 Exhibit proficiency in life-saving procedures and the ability to assist in the management of critically ill patients. (Skill)

PLO-3 Adhere to ethical principles and display attributes such as honesty, integrity, and confidentiality. (Attitude)

PLO-4 Conduct research that contributes to the advancement of medical knowledge and brings relevance to healthcare practices (Knowledge, Skill)

PLO-5 Act as an efficient community health promotor by advocating for health promotion and disease prevention. (Skill)

PLO-6 Exhibit comprehensive scientific knowledge in all professional activities. (Knowledge)

PLO-7 Demonstrate clear and efficient written and verbal communication skills to effectively communicate with patients, colleagues and other healthcare professionals. (Skills, Attitude)

PLO-8 Embrace a lifelong learning mind set to maintain expertise, keep up with advancements in medical practices and improve professional development. (Knowledge, Skill)

Module Outcomes

Cardiovascular System:-

1. Describe the normal structure of heart including development, topographical anatomy, neurovascular supply, and histology (PLO-6).
2. Review the arrangement of circulatory system (arteries, veins, lymphatics) (PLO-6,8).
3. Define the congenital anomalies of cardiovascular system with reference to normal development and early circulation (PLO 6, 8).
4. Define functions of cardiac muscle along with its properties (PLO-6).
5. Interpret pressure changes during cardiac cycle along with regulation of cardiac pumping (PLO-2,5,6).
6. Interpret normal & abnormal Electrocardiogram (ECG), ST-T changes, and its abnormalities (PLO-1,2,5,6).
7. Identify the risk factors and role of lipids in coronary blockage and atherosclerosis (hyperlipidemia/ dyslipidemia). (PLO-5,6,7).
8. Define cardiac output and its modulating/controlling factors (PLO-6).
9. Differentiate left and right sided heart failure and correlate it with the importance of pressure differences (PLO-5,6).
10. Enumerate different types of arrhythmias and describe the electrical events that produce them (PLO-5,6).

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.



Theory



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NORMAL STRUCTURE

GROSS ANATOMY

CODE	TOPIC	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS= 10		
			Module DISCIPLINE	Teaching/ Learning	Assessment Tools
CV-A-001	Mediastinum	Define mediastinum giving its boundaries and compartments. List the contents of its various compartments. 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	LGIS	MCQS

CV-A-003	Heart	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. Discuss the anatomical correlates of cardiac arterial supply Describe the anatomical correlates of electrocardiography, cardiac referred pain. Describe the anatomical basis for angioplasty, and coronary grafts. Describe the features of angina pectoris and myocardial infarction and correlate them anatomically 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 Perform surface marking of various anatomical landmarks of heart and great vessels Perform percussion and auscultation of heart Identify the salient features of heart and great vessels	Human Anatomy Integrate with cardiology/ Medicine Integrate with Cardiology/ Medicine Human Anatomy Integrate with Cardiology/ Medicine Human Anatomy Integrate with Medicine Integrate with Radiology	LGIS	MCQS
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EMBRYOLOGY & POST-NATAL DEVELOPMENT					
CODE	TOPIC	SPECIFIC LEARNING OUTCOMES	TOTAL HOURS = 14		
			MODULE DISCIPLINE	Teaching/ Learning	Assessment Tools
CV-A-004	Introduction	Describe the early development of heart and blood Vessels. Describe the development of pericardial cavity.	Human Embryology	LGIS	MCQS

CV-A-005	Development of Heart	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	LGIS	MCQS
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CV-A-006	Development of Heart and Development of Lymphatic System	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 Describe the partitioning of truncus arteriosus and bulbus cordis Describe the formation of ventricles and interventricular septum Describe the clinical features and embryological basis of ventricular septal defects Describe the development of cardiac valves and conducting system. Describe the development of lymphatic system	Integrate with Pediatrics Human Embryology Integrate with Pediatrics Human Embryology Human Embryology	LGIS	MCQS
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CV-A-007	Development of Arteries	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 Describe the formation and fate of pharyngeal arch arteries Describe the anomalies of great arteries emerging from heart: Coarctation of aorta, anomalous arteries	Human Embryology Integrate with Cardiology/ Medicine	LGIS	MCQS
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CV-A-008	Development of Veins	Describe the development of embryonic veins associated with developing heart: Vitelline veins, Umbilical Veins and Common cardinal vein and their fate Describe the formation of superior & inferior vena cava and portal vein with their congenital anomalies With the help of diagrams illustrate the development of superior vena cava, inferior vena cava and portal vein	Human Embryology	LGIS	MCQS
CV-A-009	Fetal Vessels & Circulation	List the derivatives of fetal vessels and structures: Umbilical vein, ductus venosus, umbilical artery, foramen ovale, ductus arteriosus Describe Fetal and neonatal circulation mentioning transitional neonatal circulation with its clinical Implications.	Human Embryology Integrate with Pediatrics/ Obgyn	LGIS	MCQS

CV-A-010	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	Human Embryology Integrate with Pediatrics/	LGIS	MCQS
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CV-A-011	Heart & Cardiac Muscle	Describe microscopic structure of Heart wall (Endocardium, Myocardium, Epicardium) Describe histology of Cardiac skeleton, SA (sinoatrial) node, AV (atrioventricular) node, Purkinje fibers. 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	Histology	LGIS	MCQS
CV-A-012	Blood Vessels Organization	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	LGIS	MCQS

MICROSCOPIC ANATOMY (HISTOLOGY & PATHOLOGY)				
CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 04	
			DISCIPLINE	Teaching/Learning Assessment tools

CV-A-013	Arteries	Describe histological features of arteries: Muscular arteries, elastic arteries, Arterioles	Histology	LGIS	MCQS
CV-A-014	Veins	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	LGIS	MCQS
CV-A-015	Thrombus/ Embolus formation	Describe the histopathological basis of thrombus and embolus formation.	Integrate with Pathology	LGIS	MCQS

CV-A-016	Arteriosclerosis Atherosclerosis Hypertension	Explain the histological basis of arteriosclerosis and atherosclerosis. Describe role of arterioles in hypertension	Histology		MCQS
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PRACTICAL

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CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 03		
			DISCIPLINE	Teaching / learning	Assessment
CV-A-018	Histological features of Cardiac muscle	Identify, draw and label histological structure of cardiac muscle	Histology		
CV-A-019	Histological features of Blood Vessels	Identify, draw and label histological sections of elastic artery, muscular artery, arterioles, vein, capillaries and sinusoids	Histology		

NORMAL FUNCTION

THEORY

CODE	TOPIC	MEDICAL PHYSIOLOGY		TOTAL HOURS = 68	
		SPECIFIC LEARNING OBJECTIVES	MODULE DISCIPLINE	TEACHING / LEARNING	ASSESSMENT TOOLS

CV-P-001	Cardiac Muscle	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. 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	Medical Physiology	LGIS SGD	MCQS
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		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.			
CV-P-002	Regulation of heart pumping	Describe the Frank starling mechanism. 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	Medical Physiology	LGIS SGD	MCQS
CV-P-003	Conducting system of heart	Draw and explain the conducting system of heart Describe the physiological basis and significance of AV nodal delay.	Medical Physiology	LGIS SGD Assignment	MCQS

CV-P-004	Fundamentals of ECG	Explain the ectopic pacemaker 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 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. 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	Medical Physiology Integrate with Medicine	LGIS SGD Scenario based discussion Assignment	MCQS
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CV-P-005	Effect of electrolyte on ECG	Describe the effect of hypokalemia and hyperkalemia on ECG. Describe the effect of hypocalcemia and hypercalcemia on ECG.	Medical Physiology Integrate with Biochemistry	LGIS SGD Scenario based Discussion	MCQS
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CV-P-006	Cardiac Arrhythmias	Define tachycardia and enlist its causes. Define bradycardia and enlist its causes. 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. Explain the types of atrioventricular blocks. Explain the ECG changes in 1st, 2nd & 3rd degree heart block. 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. Explain the physiological basis of pulses deficit. Physiology Explain the causes and ECG changes in Premature Ventricular Contraction (PVC) 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	Medical Physiology Integrate with Medicine Integrate with Cardiology/ Medicine Integrate with Cardiology/ Medicine Integrate with Cardiology/ Medicine	LGIS SGD Assignment Scenario based Discussion	MCQS MCQs Viva

CV-P-007	Organization of circulation	Explain the functional parts of circulation (arteries, arterioles, capillaries, veins, venules).	Medical Physiology	LGIS SGD	MCQS
CV-P-008	Blood flow	Explain the pressures in systemic & pulmonary circulation. Explain the types of Blood flow and significance of Reynolds number.	Medical Physiology	LGIS SGD	MCQS
CV-P-009	Local & Humoral Control of Blood flow	Describe local control of blood flow according to tissue needs. 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).	Medical Physiology	LGIS SGD	MCQS
CV-P-010	Nervous Regulation of circulation	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. Enumerate hydrostatic and osmotic factors that underlie Starling's hypothesis for capillary function.	Medical Physiology	LGIS SGD Scenario based Discussion	MCQS

CV-P-011		Explain the role of nervous system in rapid control of arterial blood pressure. 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.	Medical Physiology	LGIS SGD Scenario based Discussion Assignments	MCQS Viva
CV-P-0012	Role of kidneys in long term Regulation of Arterial Blood Pressure	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 (Extra Cellular Fluid) volume. Make a flow chart to show the regulation of blood pressure in response to increase in salt intake.	Medical Physiology	LGIS SGD Scenario based Discussion	MCQS Viva
CV-P-0013	Cardiac output	Define cardiac output, cardiac index & venous return with their normal values. Discuss the factors regulating cardiac output Discuss factors regulating venous return	Medical Physiology	LGIS SGD	MCQS Viva

CV-P-0014	Skeletal muscle Circulation	Explain the regulation of skeletal muscle blood flow at rest & during exercise.	Medical Physiology	LGIS SGD	MCQS
CV-P-0015	Coronary circulation	Explain the physiological anatomy of coronary circulation. Explain the regulation of coronary blood flow. Explain the physiological basis of angina, myocardial & subendocardial infarction	Medical Physiology	LGIS SGD	MCQS
CV-P-0016	Shock	Define & enlist different types of shock. Explain the causes, features, and pathophysiology of hypovolemic/hemorrhagic shock.	Medical Physiology	LGIS SGD Scenario based Discussion	MCQS

CODE	TOPIC	PHYSIOLOGY	TOTAL HOURS = 10		
		SPECIFIC LEARNING OBJECTIVES	MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
CV-P-018	ECG & Heart Sounds	Record an electrocardiogram (ECG) by correct lead placement and connections. Perform auscultation of the chest to recognize normal heart sounds.	Medical Physiology	LGIS / SGD	OSPE / VIVA
CV-P-019	Blood Pressure	Determine the effect of posture and exercise on blood pressure by auscultatory method.			
CV-P-020	Blood Pressure	Measure the blood pressure of the subject by palpatory and auscultatory methods			
CV-P-021	Arterial Pulse	Examine arterial pulse to recognize normal characteristics of pulse.			
CV-P-022	JVP	Examine neck veins to determine Jugular Venous Pulse (JVP)	Medical Physiology	LGIS / SGD	OSPE / VIVA
THEORY					
CODE	TOPIC	MEDICAL BIOCHEMISTRY	TOTAL HOURS = 21		
		SPECIFIC LEARNING OBJECTIVES	DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS

CV-B-001	Classification of lipids	Classify lipids.	 PRACTICAL		MCQS
CV-B-002	Functions of lipids & Properties of lipids	Discuss the biomedical functions & properties of lipids.	Biochemistry		MCQS
CV-B-003	Classification of fatty acids	Classify fatty acids. Discuss the role of trans saturated, saturated, poly- and mono-unsaturated fatty acids in diet on lipid profile.			MCQS

CV-B-004	Lipid peroxidation	Discuss lipid peroxidation and its significance	Biochemistry	LGIS / SGD	MCQS
CV-B-005	Eicosanoids	.Explain the biochemical and therapeutic roles of eicosanoids (prostaglandins, leukotrienes, thromboxane, and prostacyclin)	Biochemistry	LGIS / SGD	MCQS
CV-B-006	Lipoprotein metabolism	Discuss Lipoprotein metabolism Discuss role of oxidized LDL in atherosclerosis	Biochemistry	LGIS / SGD Presentation	MCQS
CV-B-007	Type I to V hyperlipidemias)	Discuss the signs and symptoms of hyperlipidemia Interpret data related to hyperlipidemia	Biochemistry	LGIS / SGD PBL	MCQS
CV-B-008	Fat soluble vitamins	Discuss the sources, biomedical importance, active states, deficiency and excess of fat-soluble vitamins (excluding Vitamin K).	Biochemistry	LGIS / SGD Quiz	MCQS
CV-B-009	Water soluble vitamins	Discuss the sources, biomedical importance, active states, deficiency and excess of water-soluble vitamins (excluding B6, B9 & B12 and Vitamin C).	Biochemistry	LGIS / SGD	MCQS
CV-B-010	Minerals and trace elements	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 and Cl.	Biochemistry	LGIS / SGD	MCQS

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CODE	TOPIC	BIOCHEMISTRY	TOTAL HOURS = 10		
		SPECIFIC LEARNING OBJECTIVES	MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
CV-B-011	Performance Interpretation of Lab report	Perform cardiac markers Creatine Kinase and Lactate Dehydrogenase (CK and LDH) Interpret lab reports based on enzymes for diseases like cardiac disorders and hyperlipidemias	Biochemistry	LGIS / SGD	OSPE / VIVA

PRACTICAL

AGING					
THEORY					
CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 05		
			MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
CV-Ag-001	Hypertension	Discuss the effect of age on blood vessels with reference to hypertension	Physiology/ Geriatrics/ Medicine	LGIS SGD	MCQS
CV-Ag-002	Cardiac Attack	Discuss the risk of cardiac attack in old age and weather conditions		LGIS SGD	MCQS
CV-Ag-003	Valvular diseases	Discuss the effect of age on valvular system of the heart.		LGIS SGD	MCQS

CV-Ag-004	Arrhythmia	Discuss the effect of age on neural conduction of the heart in relation to arrhythmia.		LGIS SGD	MCQS
CV-Ag-005	Role of female hormone on CVS disease	Discuss the protective role of female hormone against CVS diseases in women of reproductive age group	Physiology/Obstetrics and Gynecology	LGIS SGD	MCQS

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS

THEORY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 14		
			MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
CV-Pa-001	Pathology	Define Inflammation Enumerate cardinal signs of acute inflammation Enlist types of Inflammation Enumerate causes & outcomes of inflammation Differentiate acute & chronic inflammation Describe general concept of vascular & cellular events of acute inflammation Enumerate chemical mediators of inflammation along with their principal functions	Inflammation	LGIS SGD	MCQS
		Classify types of thrombosis, embolism, and infarction Discuss the pathophysiology of thrombosis, embolism, and infarction Identify the types and causes of hypertension			
CV-Pa-002	Pathology		Atherosclerosis	LGIS SGD	MCQS

CV-Pa-003	Pathology	Discuss the clinical consequences of hypertension and Atherosclerosis	Hypertension	LGIS SGD	MCQS
CV-Pa-004	Pathology	Discuss the pathophysiology of shock	Shock	LGIS SGD	MCQS
CV-Pa-005	Pathology	Classify the types of heart failure. Identify the causes leading to heart failure.	Cardiac Failure	LGIS SGD	MCQS
CV-Pa-006	Pathology	Identify the types of ischemic heart disease. Discuss the pathophysiology of different types of ischemic heart disease.	Ischemic heart disease.	LGIS SGD	MCQS
CV-Pa-007	Pathology	Explain the pathological causes of high & low cardiac output.	Cardiac output	LGIS SGD	MCQS

CV-Ph-001	Pharmacology	Classify antihypertensive drugs.	Antihypertensive drugs.	LGIS SGD	MCQS
CV-Ph-002	Pharmacology	Classify antianginal drugs.	Antianginal drugs	LGIS SGD	MCQS
CV-Ph-003	Pharmacology	Classify antiarrhythmic drugs.	Antiarrhythmic drugs	LGIS SGD	MCQS
CV-Ph-004	Pharmacology	Classify drugs used in cardiac failure.	Drugs for cardiac failure	LGIS SGD	MCQS

PRACTICAL

CODE	TOPIC	PATHOLOGY	TOTAL HOURS = 01		
		SPECIFIC LEARNING OBJECTIVES	MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS

CV-Pa-008	Hemodynamics	Identify the pathological changes of infarction (microscopic). Identify the pathological changes of thrombosis (microscopic).	Pathology	LGIS SGD SKILL LAB	OSPE VIVA
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COMMUNITY MEDICINE & PUBLIC HEALTH

THEORY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 11+2=13		
			MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
CV-CM-001	Disease Prevention Models	Describe the various strategies and models to prevent diseases.	Community Medicine and Public Health	LGIS SGD	MCQ'S
CV-CM-002	Primordial Prevention	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	Health Promotion	Discuss the basic concept of health promotion and its application to CVS.	Community Medicine and Public Health	LGIS SGD	MCQS
CV-CM-004	Behavioural Change Intervention	Discuss various methods of behavioral change interventions at community level.	Community Medicine and Public Health	LGIS	MCQS

CV-CM-005	Secondary & Tertiary Prevention	To apply secondary and tertiary preventions on CVS diseases (coronary heart disease, ischemic heart disease, hypertension)	Community Medicine and Public Health	LGIS	MCQS
CV-CM-006	Noncommunicable disease	Describe the concept of cardiovascular diseases as non-communicable diseases.	Community Medicine and Public Health	LGIS	MCQS
CV-CM-007	Risk factor assessment of CVS diseases	Identify the risk factors in the community for CVS diseases. Learn and apply interventions to prevent the risk factors in community.	Community Medicine and Public Health	LGIS	MCQS

CV-BhS-001	Personal, Psychosocial and vocational issues	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	LGIS	MCQS
CV-BhS-002	Emotional fainting	Psychological basis of emotional fainting & its impact	Behavioral Sciences	LGIS	MCQS

Total Weeks	Total Hours
5	174



**Modular Integrated
Curriculum 2K23**
Volume-01

MODULE

05

RESPIRATORY-I



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. (PLO-5).
- Explain the pathogenesis of respiratory diseases. (PLO- 5,6,8).
- Enlist the main investigations relevant to respiratory disorders.(2,6,8)
- Recognize risk factors and preventive measures of main respiratory diseases. (PLO 2,5,6).

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.



NORMAL STRUCTURE					
THEORY					
CODE	TOPIC	GROSS ANATOMY	TOTAL HOURS = 24		
		SPECIFIC LEARNING OUTCOMES	MODULE DISCIPLINE	TEACHING / LEARNING	ASSESSMENT TOOLS
Re-A-001	Thoracic Cavity	Give the boundaries of thoracic cavity, superior and inferior thoracic apertures and list the structures contained/ traversing them. Describe the anatomical correlates of Thoracic outlet Syndrome	Human Anatomy Integrate with Surgery	LGIS SGD	MCQS
Re-A-002	Rib Cage	Describe the anatomical correlates of supernumerary cervical rib. Classify the articulations of the ribs. Describe the anatomical features of these articulations. Describe the movements with the muscles producing articulations. Describe the effects of fracture to the neck of rib and give its anatomical justification Describe the anatomical correlates of Flail Chest.	Human Anatomy Integrate with Orthopedics	LGIS SGD	MCQS
Re-A-003	Intercostal space	Describe the anatomical correlates of Thoracotomy Define the attachments, relations, nerve supply and actions of intercostal muscles Define an intercostal space and give details of its contents	Integrate with Surgery Human Anatomy	LGIS SGD	MCQS

Re-A-004	Thoracic Vertebrae	Describe the anatomical features of typical & atypical 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	Human Anatomy	LGIS SGD	MCQS
Re-A-005	Sternum	Describe the bony features of the sternum Describe the anatomical correlates of sternal biopsy. and sternotomy Describe the presentation of sternal fractures and correlate it anatomically	Human Anatomy Integrate with Surgery Integrate with Orthopedics	LGIS SGD	MCQS
Re-A-006	Connective tissue of Thorax	Define endo thoracic fascia Describe the supra-pleural membrane with its attachments.	Human Anatomy	LGIS SGD	MCQS
Re-A-007	Joints of Thorax	Classify the joints of the thorax mentioning their articulations, movements with the muscle producing them. Describe the mechanics of inspiration and expiration	Human Anatomy	LGIS SGD	MCQS
Re-A-008	Neurovascular supply of Thorax	Describe the origin, course, relations and distribution of intercostal nerves and vessels Describe the alternate routes of venous drainage in blockage of superior/ inferior vena cava	Human Anatomy	LGIS SGD	MCQS
Re-A-009	Cutaneous nerve supply of Thorax	Describe the cutaneous nerve supply and dermatomes of thorax. Give anatomical justification of the manifestations of herpes zoster infection on thoracic wall. Discuss anatomical correlates of intercostal nerve block	Integrate with Medicine Human Anatomy	LGIS SGD	MCQS
Re-A-010	Trachea	Describe the anatomical features of the Trachea with its extent, relations, neurovascular supply and lymphatics	Human Anatomy	LGIS SGD	MCQS

Re-A-011	Diaphragm	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.	Integrate with Anesthesia Human Anatomy	LGIS SGD	
Re-A-012	Pleural cavity	Describe the pleura giving its parts, layers, neurovascular supply, and lymphatic drainage 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	Human Anatomy Integrate with Medicine	LGIS SGD	MCQS
Re-A-013		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 Describe the anatomical correlates of chest tube intubation Describe the anatomical correlates of thoracentesis Describe the anatomical correlates of bronchoscopy Describe the anatomical basis for medicolegal significance of lungs in determining the viability of newborn Identify various anatomical landmarks on chest X-Rays, CT and MRI	Human Anatomy Integrate with Surgery Integrate with Pulmonology Integrate with Forensic Medicine Integrate with Radiology	LGIS SGD	MCQS
EMBRYOLOGY & POST-NATAL DEVELOPMENT					
CODE	Topic	SPECIFIC LEARNING OUTCOMES	Discipline	TOTAL HOURS = 05	

				Teaching/Learning	Assessment
Re-A-014	Bony components of Thoracic cavity	Describe the development of ribs, sternum, and thoracic vertebrae. Give the associated congenital malformations	Human Embryology	LGIS SGD	MCQS
Re-A-015	Development of Vertebral Column	Describe the developmental process of Vertebral Column	Human Embryology	LGIS SGD	MCQS
Re-A-016	Diaphragm & Thoracic cavity	List the embryological sources of the diaphragm. Describe the events taking place in the development and descent of the diaphragm Describe the development of Thoracic cavities (Pleural and Pericardial cavities)	Human Embryology Integrate with Pediatrics	LGIS SGD	MCQS
Re-A-017	Upper Respiratory Tract	Describe the development of trachea. Describe congenital anomalies of Trachea- Tracheoesophageal fistulas of different types	Human Embryology Integrate with Pediatrics	LGIS SGD	MCQS
Re-A-018	Lungs	List the phases of lung development with their time periods. Describe the events taking place in each phase Describe the embryological basis of respiratory distress syndrome/Hyaline membrane disease, Ectopic Lung lobes, Congenital cysts of Lung	Human Embryology Integrate with Pediatrics	LGIS SGD	MCQS
		MICROSCOPIC STRUCTURE	TOTAL HOURS = 04		
CODE	Topic	SPECIFIC LEARNING OUTCOMES			
Re-A-019	Organization of respiratory System	Give the general histological organization of respiratory system.	Histology	LGIS SGD	MCQS

Re-A-020	Respiratory epithelium	Describe the microscopic features of respiratory epithelium & Olfactory epithelium	Histology	LGIS SGD	MCQS
Re-A-021	Nasopharynx	Describe histology of Nasopharynx	Histology	LGIS SGD	MCQS
Re-A-022	Epiglottis & Larynx	Describe the histological features of epiglottis and larynx	Histology	LGIS SGD	MCQS
Re-A-023	Trachea & lungs blood-air barrier	Describe the histological features of trachea and lungs Describe histology of blood-air barrier	Histology	LGIS SGD	MCQS
Re-A-024	Clinical correlates	Explain the histological basis of: 1. Laryngitis 2. Singer's nodules 3. Emphysema 4. Pneumonia 5. Atelectasis 1. Infant respiratory distress syndrome	Integrate with Pathology	LGIS SGD	MCQS

NORMAL FUNCTION

THEORY

CODE	TOPIC	MEDICAL PHYSIOLOGY	TOTAL HOURS = 45		
		SPECIFIC LEARNING OBJECTIVES	MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS

Re-P-001	Breathing	Enlist the muscles of inspiration and expiration in quiet breathing Enlist the muscles of inspiration and expiration in labored breathing Explain the components of the work of breathing Discuss the mechanics of pulmonary ventilation Explain periodic breathing Explain the causes and pathophysiology of sleep apnea	MEDICAL PHYSIOLOGY Integrate with Anatomy Integrate with Medicine	LGIS SGD	MCQS
Re-P-002	Lung Compliance	Define and explain 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	Medical Physiology Integrate with Pediatrics	LGIS SGD Scenario based discussion	MCQ'S
Re-P-003	Lung volumes and Capacities	Define the different lung volumes and capacities and their clinical significance 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. Discuss FEV1/FVC ratio in relation to Chronic Obstructive Pulmonary disease/restrictive lung diseases	MEDICAL PHYSIOLOGY Integrate with Pulmonology Integrate with medicine	LGIS SGD Assign ment	MCQ'S

		Discuss Forced Expiratory Volume 1/ Forced Vital Capacity (FEV1/FVC) ratio in relation to pulmonary Embolism			
Re-P-004	Pulmonary ventilation	Define alveolar ventilation. Define minute respiratory volume Describe the pressures in the pulmonary system.	MEDICAL PHYSIOLOGY	LGIS SGD	MCQ'S
Re-P-005	Pulmonary Circulation	Describe the blood volume of the Lungs 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.	MEDICAL PHYSIOLOGY	LGIS SGD	MCQ'S
Re-P-006	Pulmonary Edema, and Pleural Fluid	Discuss pathophysiology and common causes of pulmonary edema 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.	Medical Physiology	LGIS SGD Scenario based discussion	

Re-P-007	Principles of Gaseous Exchange	Explain the ultrastructure of respiratory membrane 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.	Medical Physiology	LGIS SGD	MCQS
Re-P-008	Transport of oxygen in the Blood	Explain the different forms of transport of oxygen in the Blood.	Medical Physiology	LGIS SGD	MCQS
Re-P-009	Oxyhemoglobin dissociation curve	Draw and explain 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 Discuss the P50 in relation to oxygen hemoglobin dissociation curve Explain the Bohr's effect. Define, enlist the types and causes of cyanosis	Medical Physiology	LGIS SGD	MCQS
Re-P-010	Transport of CO ₂ in blood	Enlist different forms in which Carbon dioxide CO₂ is transported in the blood. Explain carboxyhemoglobin dissociation curve. Explain the Haldane effect. Explain the chloride shift/Hamburger phenomenon. Define the respiratory exchange ratio (RER).	Medical Physiology Integrate with Medicine	LGIS SGD Assignment	MCQ'S

Re-P-011	VA/Q (ventilation perfusion ratio)	Explain the alveolar oxygen and carbon dioxide pressure when Pulmonary ventilation (V) and Perfusion (Q), VA/Q= infinity, zero, and normal. 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.	Medical Physiology	LGIS SGD	MCQS
Re-P-012	Protective reflexes	Enlist the respiratory and non-respiratory functions of the lung. Explain the nervous control of bronchiolar musculature. Trace the reflex arc of cough reflex and sneeze reflex.	Medical Physiology	LGIS SGD	MCQS
Re-P-013	Aviation and space	Explain the principle means by which acclimatization occurs. Explain the events that occur during acute mountain sickness. Enlist the features of chronic mountain sickness.	Medical Physiology	LGIS SGD	MCQS
Re-P-014	Deep sea diving	Explain the pathophysiology, features, prevention and treatment of decompression sickness	Medical Physiology	LGIS SGD Scenario based discussion	MCQS
Re-P-015	Carbon monoxide poisoning	Draw and explain the effect of CO poisoning on oxyhemoglobin dissociation curve Explain the pathophysiology, features, and treatment of CO poisoning.	Medical Physiology	LGIS SGD	MCQS
Re-P-016	Nervous regulation of respiration	Enumerate the components of respiratory centers and explain their functions.	Medical Physiology	LGIS SGD	MCQS

		Explain the inspiratory RAMP signal Explain the Herring Breuer reflex/lung inflation reflex and its clinical significance			
Re-P-017	Chemical control of respiration	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	LGIS SGD	MCQS
Re-P-018	Exercise & respiration	Respiration	Medical Physiology	LGIS SGD	MCQS
Re-P-019	Hypoxia	Enlist the effects of acute hypoxia Explain the role of hypoxia as a stimulus in the response to hypoxia Define and explain different types of hypoxias.	Medical Physiology	LGIS SGD	MCQS
Re-P-021	Pneumonia	Discuss the bacteria and viruses that cause Pneumonia	Medical Physiology	LGIS SGD	MCQS
Re-P-022	Dyspnea	Define Dyspnea Enlist different causes of dyspnea Differentiate between cardiac and respiratory dyspnea Outline management strategies for dyspnea	Medical Physiology	LGIS SGD	MCQS

Re-P-023		Explain the pathophysiology of emphysema	Medical Physiology	LGIS SGD	MCQS
	emphysema Atelectasis				
Re-P-024		Explain the pathophysiology of Atelectasis.	Medical Physiology	LGIS SGD	MCQS
Re-P-025		Enlist the causes of Pneumothorax	Medical Physiology	LGIS SGD	MCQS
	Pneumothorax	Describe the signs and symptoms of Pneumothorax			
Re-P-026	Pleuritis	Enlist the causes of Pleuritis Describe the signs and symptoms of Pleuritis Discuss the management of Pleuritis	Medical Physiology	LGIS SGD	MCQS
Re-P-027	Bronchitis	Enlist the causes of Bronchitis Discuss the signs and symptoms of Bronchitis Discuss the management of Bronchitis	Medical Physiology	LGIS SGD	MCQS
Re-P-028	Pneumothorax Pleuritis	Classify different types of pneumonia Discuss the sign symptoms of pneumonia Discuss the management of pneumonia	Medical Physiology	LGIS SGD	MCQS
Re-P-029		Classify different types of asthma	Medical Physiology	LGIS SGD	MCQS
	Asthma	Describe the signs and symptoms of asthma Discuss the management of asthma			

Re-P-030	Tuberculosis	Classify different types of Tuberculosis Discuss the signs and symptoms of tuberculosis Discuss the management of Tuberculosis	Medical Physiology	LGIS SGD	MCQS
Re-P-031	Respiratory distress	Classify different types of acute respiratory distress Symptoms of acute respiratory distress syndrome Discuss the management of acute respiratory distress Syndrome	Medical Physiology	LGIS SGD	MCQS
Re-P-032	Respiratory failure	Define respiratory failure Respiratory failure Outline management strategies of respiratory failure	Medical Physiology	LGIS SGD	MCQS
Re-P-033	Bronchitis	Describe ABC in a trauma patient	Medical Physiology	LGIS SGD	MCQS
THEORY					
CODE		MEDICAL BIOCHEMISTRY	TOTAL HOURS = 14		
		SPECIFIC LEARNING OBJECTIVES	MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS

Re-B-001	Genetic defects	Describe the biochemical basis of emphysema, Chronic obstructive pulmonary disease (COPD) and cystic fibrosis Explain and interpret the pedigree of single gene defect i.e., Emphysema and cystic fibrosis (autosomal recessive) Discuss the biochemical basis of Respiratory Distress Syndrome	Medical Biochemistry	LGIS PBL	MCQS
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Re-B-002	Water, pH, Buffers/ Ionization of water	Describe ionization of water and elaborate its significance. Discuss water and electrolyte balance in health and disease	Integrate with Physiology	LGIS Poster + Group discussion	MCQS
Re-B-003	Water, pH, Buffers/ pH and pH scale	Define pH and describe the concept of pH scale.	Integrate with Physiology	LGIS Quiz	MCQS
Re-B-004	Water, pH, Buffers/ weak acids and their significance	Define weak acids and conjugate base.	Integrate with Physiology	LGIS	MCQS
Re-B-005	Water, pH, Buffers/ Ka And pKa	Define Ka and pKa and give their significance.	Integrate with Physiology	LGIS	MCQS
Re-B-006	Water, pH, Buffers/ HH equation and its applications	Describe Henderson-Hasselbach (HH) equation. (no derivation required) along with its application/use. Interpret the titration curve for amino acids (alanine, histidine& acetic acid)	Integrate with Physiology	LGIS	MCQS
Re-B-007	Water, pH, Buffers/ HH equation and its applications	Define buffers. Enumerate the component of a buffers system and describe their mechanism of action. Enlist important buffers present in blood, plasma, ECF (Extra Cellular Fluid), ICF (Intra Cellular Fluid) and renal tubular fluid. Elaborate the working of bicarbonate buffer and phosphate buffer.	Integrate with Physiology	LGIS	MCQS

Re-B-008	Acid Base balance and imbalance/ Lung mechanisms for pH regulation	Elaborate the role of lungs in the regulation of acid base balance.	Integrate with Physiology	LGIS Flowchart Presentation	MCQS
Re-B-009	Acid Base balance and imbalance / Defense mechanisms against changes in H ⁺ concentration	Elaborate the concept of 1 st , 2 nd and 3 rd line of defense against changes in H ⁺ ion concentration.	Biochemistry	LGIS	MCQS
Re-B-010	Acid base balance	Discuss the concept of acid base balance	Medical Biochemistry	LGIS PBL + Quiz	MCQS

PATHOPHYSIOLOGY AND PHARMACOTHERAPEUTICS

THEORY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 5+3=08		
			MODULE 02 DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
Re-Ph-001	Cough Suppressants	Classify the drugs for cough suppression & expectoration	Pharmacology & Therapeutics	LGIS	MCQS
		Explain the mechanism of action and adverse effects of cough suppressants			
Re-Ph-002	anti-asthmatics	Explain the mechanism of action and adverse effects of anti-asthmatics	Pharmacology & Therapeutics	LGIS	MCQS
Re-Ph-003	Anti asthmatics	Classify anti-histamines	Pharmacology & Therapeutics	LGIS	MCQS
Re-Pa-001	Acute Respiratory Distress Syndrome	Describe the pathophysiology of acute respiratory distress syndrome	Pathology	LGIS	MCQS
Re-Pa-002	Obstructive lung Disease	Give the salient features of Obstructive and Restrictive Lung diseases.	Pathology	LGIS	MCQS

Re-Pa-003	Restrictive Lung Disease	Tabulate the differences between Obstructive and Restrictive lung diseases	Pathology	LGIS	MCQS
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DISEASE PREVENTION AND IMPACT					
THEORY					
CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 10		
			MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
Re-CM-001	Prevention of acute Respiratory Infections (ARI)	Identify the common risk factors of acute respiratory infections with emphasis on smoking 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 Infections	Community Medicine and Public Health	LGIS	MCQS
Re-CM-002	Interaction of environmet & Respiratory System	Enlist most common blood borne diseases in Pakistan Describe the routes of spread of blood borne diseases	Integrate with Biochemistry	LGIS	MCQS
Re-CM-003	Epidemiology of respiratory Diseases	Genetic counseling of parents	Community Medicine and Public Health	LGIS	MCQS
Re-CM-004	Occupatioal Lung Diseases	Enlist the common respiratory diseases related to Occupation	Community Medicine and Public Health	LGIS	MCQS

Re-BhS-001	Dyspnea	identify the psychosocial factors leading to dyspnea.	Behavioral Sciences	LGIS	MCQS
Re-BhS-002	Psychogenic Cough	Identify the psychosocial factors leading to psychogenic cough.	Behavioral Sciences	LGIS	MCQS
Re-BhS-003	Personal, Psychosocial and vocational issues	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.	Behavioral Sciences	LGIS	MCQS

AGING

THEORY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 03		
			MODULE 02 DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS

Re-Ag-001	Respiratory infections in old age	Discuss the microbiological basis of respiratory infections in old age in cold weather	Microbiology	LGIS SGD	MCQS
Re-Ag-002	Increased vulnerability to infection	Discuss how aging impairs respiratory clearance, increasing inflammation and infection risk.	Pathology		
	Respiratory diseases	Describe the biochemical basis of emphysema, COPD and cystic fibrosis	Chemical Pathology		

PRACTICAL HISTOLOGY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS = 05		
			MODULE DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
Re-A-025	Epiglottis & Larynx	Identify, draw and label the histologic sections of epiglottis and larynx.	Histology	SGD LGIS SKILL LAB	OSPE VIVA
Re-A-026	Trachea & Organization of Respiratory System	Describe the histological features of bronchial tree: trachea, bronchi, bronchioles, alveoli	Histology	SGD LGIS SKILL LAB	OSPE VIVA
Re-A-027	Bronchial tree & Lung	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 Compare and contrast the histological features of various components of bronchial tree: trachea, bronchi, bronchioles, alveoli.	Histology	SGD LGIS SKILL LAB	OSPE VIVA
Re-A-028	Pneumocytes	Describe, compare and contrast the light and electron microscopic features of type I and type II pneumocytes	Histology	SGD LGIS SKILL LAB	OSPE VIVA

PHYSIOLOGY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS= 06		
			MODULE 02 DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
Re-P-034	Clinical Examination of Chest	Perform the clinical examination of chest for the respiratory system (inspection, palpation, percussion, Auscultation)	Medical Physiology	LGIS SGD SKILL LAB	OSPE VIVA

Re-P-035	Lung volume & capacities	Determine lung volumes and capacities with a spirometer.	Medical Physiology	LGIS SGD SKILL LAB	OSPE VIVA
Re-P-036	Oxygen Saturation	Determine Blood Oxygen Saturation with finger Pulse Oximeter.	Medical Physiology	LGIS SGD SKILL LAB	OSPE VIVA
Re-P-037	Peak Expiratory Flow rate	Determine Peak Expiratory Flow rate.	Medical Physiology	LGIS SGD SKILL LAB	OSPE VIVA
Re-P-038	CPR	Perform Cardio pulmonary Resuscitation (CPR) on adult and infant.	Medical Physiology	LGIS SGD SKILL LAB	OSPE VIVA

BIOCHEMISTRY

CODE	TOPIC	SPECIFIC LEARNING OBJECTIVES	TOTAL HOURS= 04		
			MODULE 02 DISCIPLINE	TEACHING LEARNING	ASSESSMENT TOOLS
Re-B-011	Determination of pH	Determine the pH of the solution by pH meter	Medical Biochemistry	LGIS SGD SKILL LAB	OSPE VIVA
Re-B-012	Acid base balance Interpretations	Interpret metabolic and respiratory disorders of acid base balance on the basis of sign, symptoms and ABG findings	Medical Biochemistry	LGIS SGD SKILL LAB	OSPE VIVA

Module Weeks	Recommended Minimum Hours
04	128



TENTATIVE TIMETABLE

Cardiovascular Module Schedule (1st Year MBBS)

WEEK- 01/08

Day/Date	8:00 - 08:50	08:50 - 9:40	9:40 - 10:30	10:30 - 11:20	11:20 - 12:10		12:10-1:00	1:00-1:30	1:30-2:10	2:10 - 3:00
Monday 14/7/26	LGIS CFRC	LGIS Islamiyat	LGIS Communit y Medicine	LGIS Embryology	SGD (Physio/Biochem)			Lunch/ prayer Break	LGIS Biochemistr y	LGIS Quran
Tuesday 15/7/26	Practical (Anat, Bio, Physio)		LGIS Physio	LGIS Biochem	SGD (Physio/Bio)				LGIS Anatomy	Dissection Hall
Wednesday 16/7/26	Practical (Anat, Bio, Physio)		Anato my LGIS	Biochem LGIS	SGD (Physio/Bio)				LGIS Ageing	Dissection Hall
Thursday 17/7/26	Practical (Anat, Bio, Physio)		Biochemist ry LGIS	Physio LGIS	11:20- 12:10	SGD			Histology LGIS	Dissection hall
					Biochem LGIS					
Friday 18/7/26	8:00-8:50		8:50-9:40	9:40-10:30	10:30- 11:20	11:20- 12:10	12:10- 1:00		DSL	Pathology LGIS
	LGIS Pathology		LGIS PERL'S	LGIS embryology	LGIS BS	Physio LGIS				

Respiratory-1 Module Schedule (1st Year MBBS)

	WEEK- 05/08								
Day/Date	8:00 - 08:50	08:50 - 9:40	9:40 - 10:30	10:30 - 11:20	11:20 - 12:10	12:10-1:00	1:00-1:30	1:30-2:10	2:10 - 3:00
Monday 15/8/26	LGIS CFRC	LGIS Islamiya t	LGIS Communi ty Medicine	LGIS Embryology	SGD (Physio/Biochem)		Lunch/ prayer Break	LGIS Biochemi st ry	LGIS Quran
Tuesday 16/8/26	Practical (Anat, Bio, Physio)		LGIS Physio	LGIS Biochem	SGD (Physio/Bio)			LGIS Anatomy	Dissection Hall
Wednesday 17/8/26	Practical (Anat, Bio, Physio)		Anato my LGIS	Biochem LGIS	SGD (Physio/Bio)			LGIS Ageing	Dissection Hall
Thursday 18/8/26	Practical (Anat, Bio, Physio)		Biochemi st ry LGIS	Physio LGIS	11:20- 12:10	SGD		Histology LGIS	Dissection hall
					Biochem LGIS				
Friday 19/8/26	8:00-8:50		8:50-9:40	9:40-10:30	10:30- 11:20	11:2 0- 12:1 0	12:10- 1:00	DSL	Pathology LGIS
	LGIS Pathology		LGIS PERL'S	LGIS embryology	LGIS BS	Physio LGIS			



ASSESSMENT TOOLS

Students will be assessed by the following methods

1. Weekly Assessments

Assessments will be conducted every Monday covering all the lectures conducted in the previous week consisting of MCQs only.

2. Assignments/CBLs:

Assignments/CBLs will be given monthly.

3. End of Module Exam:

At the end of Foundation and H & L module, end of module exam covering all the LOs of the module consisting of MCQs would be conducted.

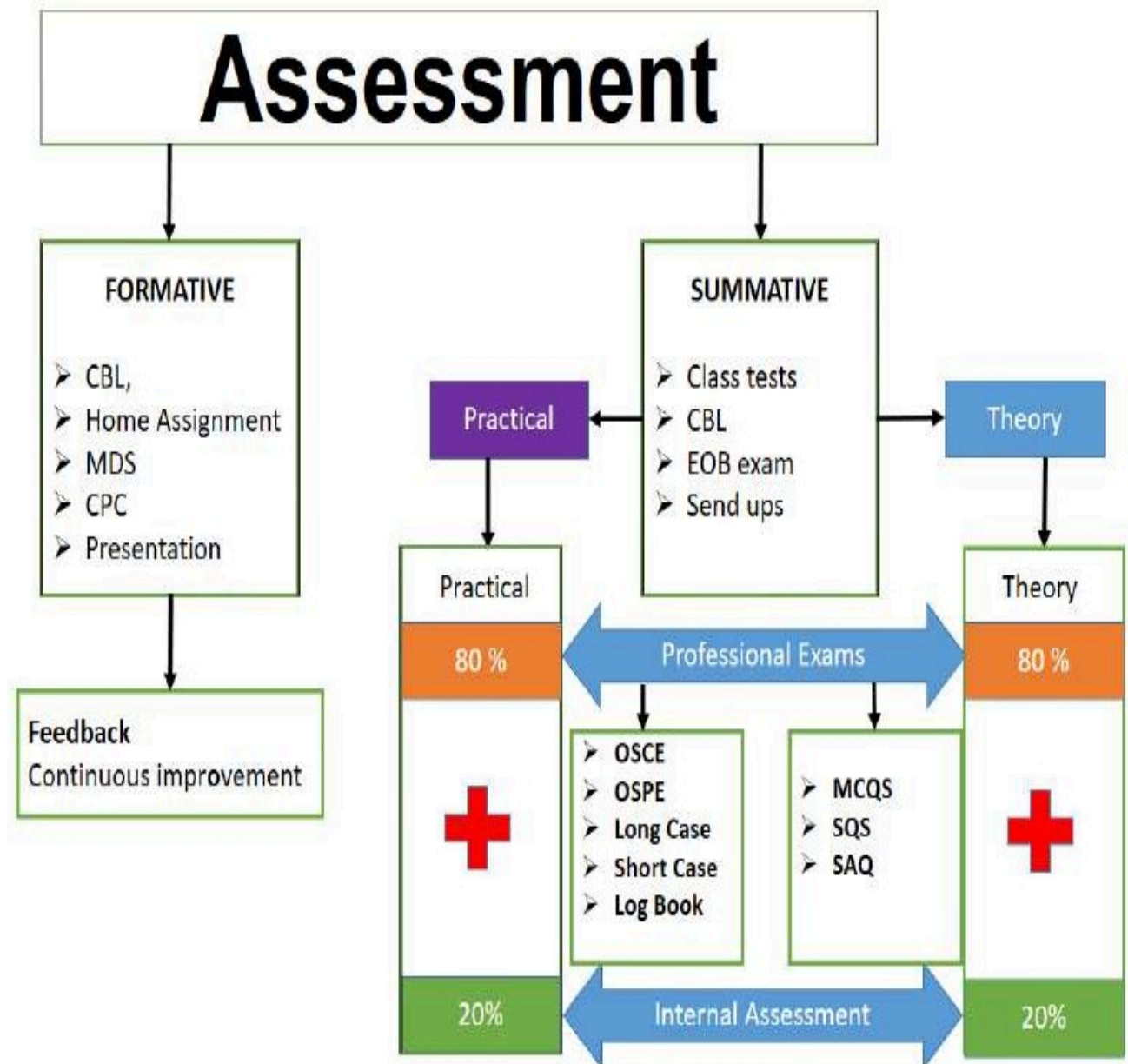
4. Block Exam:

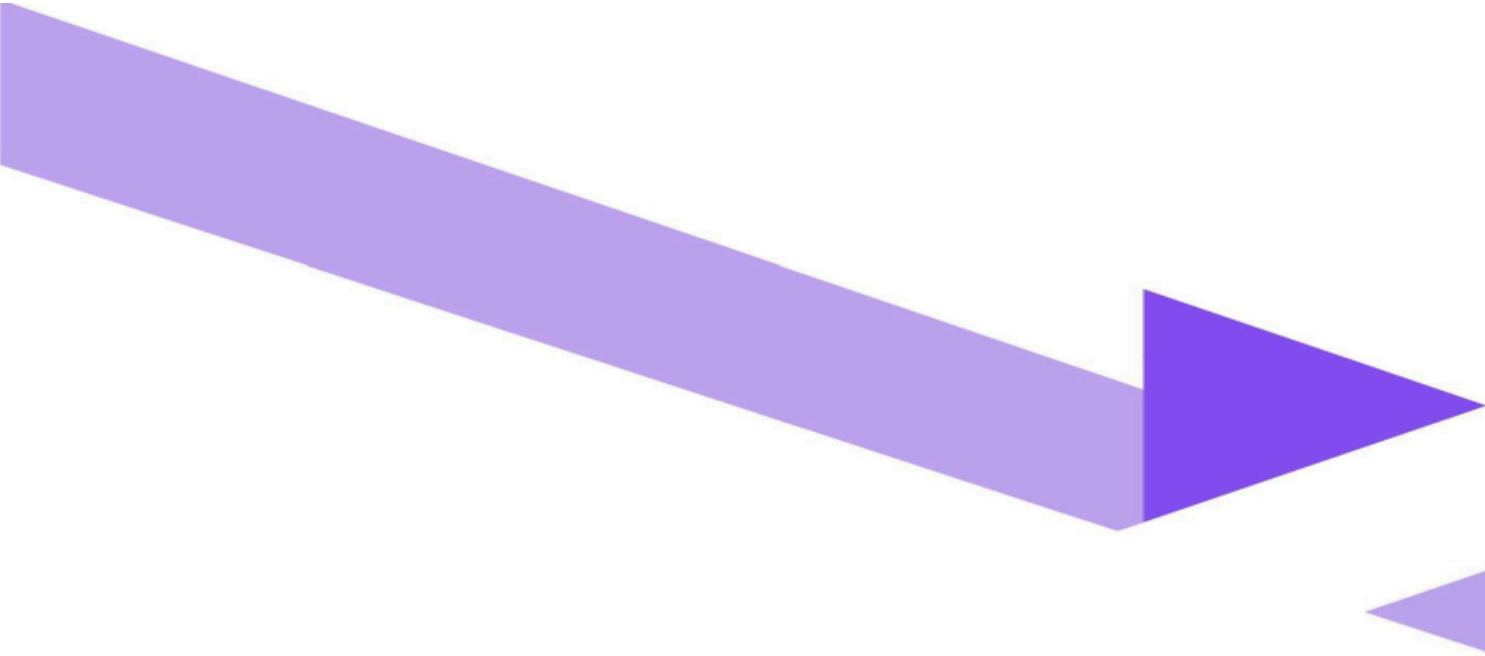
At the end of block, an exam will be conducted comprising of theory(MCQs) and practical/OSPE content.

5. Departmental quizzes, presentations & group projects:

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







LIST OF RESOURCES



Anatomy

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

Biochemistry

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

Pathology

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

General Medicine

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

Pharmacology And Therapeutics

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

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

Behavioural Sciences

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

Community medicine

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

Surgery

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

Patient Safety

- Patient Safety Curriculum Guide: Multi Professional Guide

Microbiology

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

Pediatrics Medicine

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

Gynecology

- Gynecology by Ten Teachers

Infection Control

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

Biosafety

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

Family medicine

- Oxford Handbook of General Practice, 5th Edition

Orthopedics

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

Rheumatology

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

Radiology

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

Forensic Medicine

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

Forensic Pathology

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

Toxicology

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

Forensic Sciences

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

Biomedical ethics

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

Evidence Based Medicine

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

Pediatrics

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

Islamiyat

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



MODULAR INTEGRATED CURRICULUM 2K23

version 3.0

VOLUME:01



Clerkships

Rotation

Foundation

Clinical Skills -FRC



LOGBOOK

CLINICAL-FOUNDATION
ROTATION CLERKSHIP

C-FRC

LOGBOOK C-FRC

C-FRC-1 YEAR-1





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

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

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

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

Date Observed: _____

CHECKLIST FOR HEART SOUNDS (Some of the following steps/tasks should be performed simultaneously.)		CASES (Minimum 3 Entries)		
STEP/TASK				
THE PROCEDURE:				
1. Begin by introducing yourself to the patient and explaining the auscultation process to them.				
2. Take consent of the patient				
3. Position the patient in a comfortable position and expose their chest.				
4. Place the stethoscope on the patient's chest over the four auscultation points - aortic, pulmonary, tricuspid and mitral.				
5. Listen to the heart sounds in each area, first with the diaphragm and then with the bell				
6. Identify the S1 and S2 sounds. S1 is the first sound heard, which is produced by the closure of the atrioventricular valves. S2 is the second sound heard, which is produced by the closure of the semilunar valves				
7. Determine the heart rate and rhythm				
8. Assess the intensity of the heart sounds - S1 and S2. S1 should be louder than S2 at the mitral area and vice versa at the aortic area.				
9. Assess the splitting of the heart sounds - S2 may split physiologically during inspiration and be heard as two distinct sounds				
10. Listen for any additional heart sounds such as S3 or S4 which indicate pathological conditions.				
11. Thank the patient				
SKILL/ACTIVITY PERFORMED SATISFACTORILY				
Signatures of Supervisor				

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CHECKLIST FOR EXAMINATION OF EDEMA (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE: 1. Begin by introducing yourself to the patient and explaining the procedure 2. Take consent. 3. Ask patient to remove shoes and socks 4. Observe the patient's ankles for any visible swelling or changes in skin colour 5. Release the pressure and observe the area for any indentation or "pit". 6. If a pit is observed that is known as pitting edema 7. If no pit is observed that is known as non-pitting edema 8. Assess the extent of the edema by measuring the circumference of the ankle with a tape measure.			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			

CHECKLIST FOR EXAMINATION OF PEDAL AND CAROTID PULSE (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE: (Pedal pulse)			
1. Begin by introducing yourself to the patient and explaining the procedure			
2. Take consent.			
3. Ask the patient to lie down flat on their back or sit up with their legs dangling over the edge of the examination table			
4. Identify the pedal pulse by locating the dorsalis pedis artery on the top of the foot, just lateral to the extensor hallucis longus tendon. Alternatively, locate the posterior tibial artery by palpating the groove between the medial malleolus and Achilles tendon.			
5. Place your index and middle fingers over the identified artery and apply gentle pressure until you feel the pulse.			
6. Assess the strength and regularity of the pulse.			
THE PROCEDURE: (Carotid pulse)			
1. Identify the carotid pulse by locating the carotid artery on the side of the neck, just below the angle of the jaw			
2. Assess the strength and regularity of the pulse.			
3.			
3. Record your findings accurately and thank the patient <i>*Remember, it's important to be gentle when performing this examination and to explain the procedure to the patient beforehand. Also, it's important to avoid excessive pressure on the carotid artery to prevent potential complications, especially in elderly or hypertensive patients. DO NOT COMPRESS CAROTID SIMULTANEOUSLY ON BOTH SIDES</i>			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			

Signatures of Supervisor			
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Date Observed: _____

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

CHECKLIST FOR EXAMINATION OF JVP (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE: 1. Introduce yourself to the patient and explain the procedure 2. Ask the patient to lie down flat on their back 3. Place your right hand on the patient's upper abdomen, just below the ribcage. 4. Apply firm pressure for about 10 seconds 5. Observe the neck veins for any visible distension 6. If the jugular veins in the neck become more visible or distended, this is a positive abdomin-jugular reflex and indicates an elevated JVP 7. If there is no change in the neck veins, this is a negative abdomin-jugular reflex and indicates a normal JVP 8. Thank the patient			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			

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

Date Observed: _____

CHECKLIST FOR EXAMINATION OF LYMPH NODES (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)		
STEP/TASK			
THE PROCEDURE: 1. Introduce yourself to the patient and explain the procedure 2. Inspect the neck and axilla for any visible swelling or abnormality 3. Palpate the cervical lymph nodes. Start by checking the pre-auricular nodes, then move on to the post-auricular, occipital, submental, submandibular, tonsillar, superficial cervical, deep cervical, supraclavicular nodes 4. Palpate the cervical lymph nodes. Start by checking the pre-auricular nodes, then move on to the post-auricular, occipital, submental, submandibular, tonsillar, superficial cervical, deep cervical, supraclavicular nodes 5. Note the size, shape, and consistency of the lymph nodes. Normal lymph nodes are usually small, soft, and movable. Enlarged lymph nodes may be hard, tender, or fixed 6. Check for pain or tenderness 7. Thank the patient			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			

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

RESPIRATORY-1 MODULE

Objectives	Skill	Miller's Pyramid Level Reflected
Performance of chest compressions	CPR/Chest compressions	Shows
Detection of clubbing	Clubbing	Shows
Identify main organs of the thorax on CXR	CXR	Shows
Identification of pneumonic patch on chest x ray	Pneumonia CXR	Shows
Administering inhaler to a patient	Inhaler use	Shows

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

Date Observed: _____

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

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

CHECKLIST FOR PERFORMANCE OF CHEST COMPRESSIONS (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 2 Entries)		
STEP/TASK			
THE PROCEDURE: 1. Position the person on their back: Place the person on their back on a hard, flat surface 2. Kneel beside the person: Kneel beside the person's chest 3. Place your hands: Place the heel of one hand on the center of the person's chest between the nipples. Place the other hand on top of the first hand 4. Interlock your fingers: Interlock your fingers, making sure that pressure is not applied to the person's ribs 5. Compress the chest: With your arms straight, press down on the person's chest using your upper body weight. Compress the chest at least two inches deep, but no more than 2.4 inches, at a rate of 100-120 compressions per minute. 6. Allow the chest to return to its normal position: After each compression, release the pressure on the chest, but do not remove your hands. 7. Repeat: Continue the cycle of compressions and releases until medical help arrives or the person starts breathing on their own.			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			

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

S U O	CHECKLIST FOR IDENTIFICATION OF ORGANS ON CXR (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 3 Entries)
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CHECKLIST FOR CHECKING CLUBBING OF FINGERS (Some of the following steps/tasks should be performed simultaneously.)	CASES (Minimum 2 Entries)		
STEP/TASK			
THE PROCEDURE: 1. Explain the procedure: Introduce yourself to the patient, explain what you will be doing and obtain their consent. 2. Inspect the nails: Look at the shape of the nails. Clubbed fingers have an increased curvature of the nail bed, causing the nails to appear rounded and wider than normal 3. Check the nail base: Look at the base of the nails. Clubbed fingers have a bulbous enlargement of the soft tissues at the base of the nails 4. Check for other signs: Look for other signs of underlying medical conditions that can cause clubbing, such as cyanosis (blue discoloration of the skin), coughing, difficulty breathing, or chest pain 5. Ask about symptoms: Ask the patient about any symptoms they may be experiencing, such as shortness of breath, chest pain, or chronic cough 6. Thank the patient			
SKILL/ACTIVITY PERFORMED SATISFACTORILY			
Signatures of Supervisor			

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

CHECKLIST FOR IDENTIFICATION OF ORGANS ON CXR
(Some of the following steps/tasks should be performed simultaneously.)

CASES
(Minimum 3 Entries)

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

STEP/TASK

THE PROCEDURE:

1. Orient yourself to the image by identifying the left and right sides of the chest
2. Look for the bony structures of the chest, including the ribs, sternum, and clavicles
3. Identify the lungs, which will appear as dark areas on the X-ray film
4. Look for the diaphragm, which is a thin, curved line separating the chest cavity from the abdominal cavity
5. Identify the heart, which will appear as a slightly enlarged area in the middle of the chest
6. Look for the aorta, which is the largest artery in the body and runs down the center of the chest
7. Identify the trachea, which is a tube that runs down the center of the chest and divides into the left and right main bronchi
8. Look for any abnormalities such as nodules, masses, or areas of consolidation in the lungs
9. Report your findings

IDENTIFICATION OF PNEUMONIC PATCH ON X-RAY

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

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

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

Date Observed: _____

CHECKLIST FOR IDENTIFICATION OF PNEUMONIC PATCH (Some of the following steps/tasks should be performed simultaneously.)		CASES (Minimum 2 Entries)		
STEP/TASK				
THE PROCEDURE:				
1. Identify the location of the patch: Look for an area of increased opacity or whiteness on the chest x-ray. The patch is usually located in one or more of the lung fields				
2. Assess the shape and size of the patch: Observe the shape of the patch. It may be round, oval, or irregular in shape. Note the size of the patch and whether it is increasing or decreasing in size				
3. Determine the density of the patch: Evaluate the density of the patch. It may appear dense or fluffy, and may be surrounded by a hazy or fuzzy border				
4. Look for air bronchograms: Identify air bronchograms, which are visible air-filled bronchi within the patch. These indicate that the surrounding lung tissue is consolidated				
5. Check for pleural effusion: Assess the presence of a pleural effusion, which is a buildup of fluid in the pleural space around the lungs. This can be seen as a dark area at the bottom of the lung field				
6. Consider the patient's clinical presentation: Review the patient's symptoms, such as cough, fever, and shortness of breath, which are commonly associated with pneumonia				
7. Report your findings				

CHECKLIST FOR INHALER USAGE
(Some of the following steps/tasks should be performed simultaneously.)

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

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

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

STEP/TASK
or guidelines
THE PROCEDURE:

1. Explain what you are about to demonstrate to the patient
2. Take off the cap of the inhaler
3. Shake the inhaler well before using it to ensure proper mixing of the medication
4. Hold the inhaler in your hand with your thumb on the bottom and your index and middle fingers on top
5. Position the mouthpiece between your teeth and close your lips around it to form a tight seal (explain to the patient, do not insert in your mouth while doing demonstration)
6. Begin to inhale slowly and deeply through your mouth as you press down on the canister to release the medication
7. Wait for at least 30 seconds before repeating the above steps if another dose is required
8. Recap the inhaler
9. Instruct the patient, that incase a steroid inhaler is used, rinse mouth to prevent oral thrush

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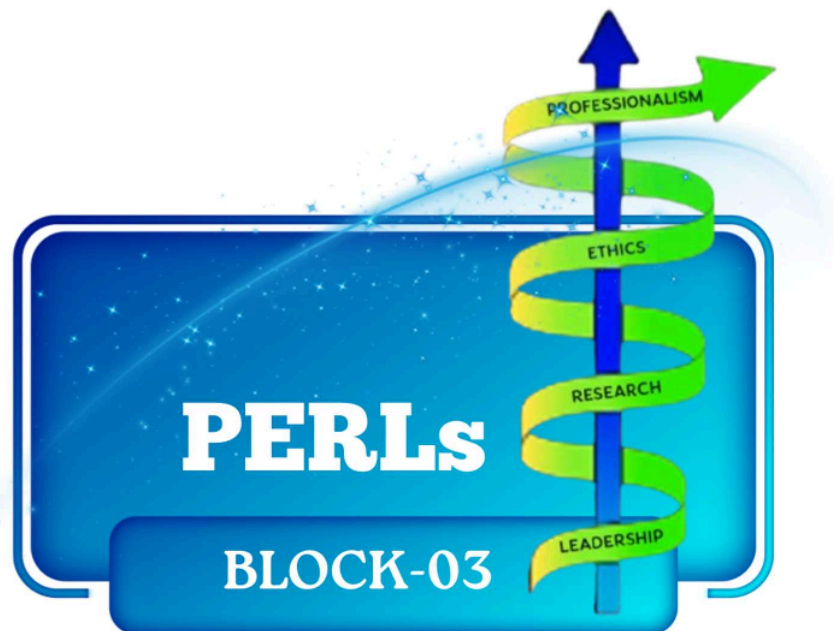
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Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines

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



MODULE RATIONALE

satisfactory, or N/O, if not observed.

The UHS PERL Module is designed to equip medical students with essential competencies in Professionalism, Ethics, Research, and Leadership, aligning with the PMDC 7-Star Doctor (Professional, Ethical, Scholar, Leader, Communicator, Health Advocate, and Collaborator) framework. This framework emphasizes the multifaceted role of a physician, highlighting the need for a holistic approach to medical education. In an era where healthcare systems are constantly

evolving, integrating these core areas is vital for developing well-rounded, responsible, and effective healthcare professionals.

1. Importance of Professionalism:

Professionalism is the cornerstone of medical practice, influencing patient trust and the overall quality of care. This module emphasizes the significance of professional behavior, including accountability, integrity, and respect for diversity, ensuring that students cultivate a strong ethical foundation as they progress through their medical education.

2. Ethical Decision-Making:

As future healthcare providers, students will face complex ethical dilemmas that require sound judgment and moral reasoning. This module focuses on key ethical principles, such as patient autonomy, equity, and justice in resource allocation, particularly in challenging areas like neoplasia and inflammation. Understanding these principles prepares students to advocate for their patients while navigating the intricate landscape of modern healthcare.

3. Research Competence:

Research plays a critical role in advancing medical knowledge and improving patient outcomes. By emphasizing evidence-based practice, this module encourages students to engage with scientific literature, develop robust literature search strategies, conduct research projects and apply research findings to clinical decision-making. This skill set is essential for fostering a culture of inquiry and continuous improvement within the healthcare profession.

4. Leadership Development:

Leadership is an integral part of effective healthcare delivery. This module prepares students to take on leadership roles, emphasizing teamwork, conflict resolution, and

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

influence positive changes in their future workplaces and advocate for patient-centered care.

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In summary, the UHS PERL module is designed to create a comprehensive learning experience or guidelines

that prepares medical students for the challenges and responsibilities they will face in their careers.

By integrating Professionalism, Ethics, Research, and Leadership, we aim to cultivate competent, compassionate, and ethical healthcare professionals who are equipped to make informed decisions and lead with integrity in an ever-changing medical landscape.

MODULE LEARNING OUTCOMES

• Exhibit accountability, integrity, and respect for diversity in all aspects of medical practice, Place a "✓" in case box if step/task is performed satisfactorily, an "X" if it is not performed satisfactorily, or N/O if not observed. embodying the principles of professionalism in clinical and academic settings. (PLO 3)

- Analyze and apply ethical principles related to patient care, including autonomy, beneficence, non-maleficence, and justice, particularly in challenging situations such as end-of-life decisions and resource allocation. (PLO3)

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

- Develop and implement effective literature search strategies, critically evaluate scientific or guidelines

literature, and synthesize findings to inform clinical decision-making and practice. (PLO 4)

- Participate in a comprehensive research project, from formulating a research question to data collection and analysis, culminating in the production of a publishable manuscript that meets academic and ethical standards. (PLO 4)
- Demonstrate leadership skills through effective communication, conflict resolution, and teamwork, fostering a collaborative environment that enhances patient care and academic performance. (PLO 7)
- Recognize and address the social determinants of health, advocating for equity in healthcare access and outcomes for diverse patient populations. (PLO6)
- Engage in self-assessment and reflective practices to identify strengths and areas for improvement, creating actionable plans for personal and professional growth throughout their medical education. (PLO 8)
- Utilize effective verbal and non-verbal communication skills to engage with patients, families, and colleagues, ensuring clear and compassionate exchanges that enhance understanding and trust. (PLO 7)

SUBJECTS INTEGRATED IN THE MODULE

1. Professionalism
2. Ethics
3. Research
4. Leadership

LEARNING RESOURCES

1. **Professionalism:**

Place a “/” in case box if step/task is performed satisfactorily, an “X” if it is not performed. Azam, W. (2021). Mind maps for medicine. Scion Publishing. <https://scionpublishing.com/product/mind-maps-for-medicine/>

• Bin Abdulrahman, K. A., Khalaf, A. M., Bin Abbas, F. B., & Alanazi, O. T. (2021). Study habits of highly effective medical students. *Advances in Medical Education and Practice*, 12, 627–633. <https://doi.org/10.1007/s12242-021-00935-5>

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• Bandaranayake, R. C. (2013). Study skills. In K. Walsh (Ed.), *Oxford textbook of medical education* (pp. 244–254). Oxford University Press. <https://doi.org/10.1093/med/9780199652679.003.0021>

- American Board of Internal Medicine Foundation, American College of Physicians Foundation, & European Federation of Internal Medicine. (2005). Medical professionalism in the new millennium: A physician charter. Retrieved from [https://www.abimfoundation.org/what-we-do/physician-charter​;contentReference\[oaicite:0\]{index=0}](https://www.abimfoundation.org/what-we-do/physician-charter​;contentReference[oaicite:0]{index=0})
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- Guraya, S. S., Guraya, S. Y., Harkin, D. W., Ryan, Á., Mat Nor, M. Z. B., & Yusoff, M. S. B. (2021). Medical Education e-Professionalism (MEeP) framework; From conception to development. *Medical Education Online*, 26(1), 1983926. [https://doi.org/10.1080/10872981.2021.1983926​;contentReference\[oaicite:2\]{index=2}](https://doi.org/10.1080/10872981.2021.1983926​;contentReference[oaicite:2]{index=2})
- Kirk, L. M. (2007). Professionalism in medicine: Definitions and considerations for teaching. *Baylor University Medical Center Proceedings*, 20(1), 13–16. [https://doi.org/10.1080/08998280.2007.11928225​;contentReference\[oaicite:3\]{index=3}](https://doi.org/10.1080/08998280.2007.11928225​;contentReference[oaicite:3]{index=3})
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- Online Journals and Reading Materials through HEC Digital Library Facility

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

2. Ethics:

- World Health Organization. (2015). Global health ethics: Key issues. World Health Organization. <https://apps.who.int/iris/handle/10665/164576>

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

- World Health Organization. (2011). Standards and operational guidance for ethics review of health-related research with human participants. World Health Organization. <https://www.who.int/publications/i/item/9789241502948>
- World Health Organization. (2023). WHO Code of Ethics. World Health Organization.
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3. Research

- Medical Statistics. 2nd Ed. by R. Turkwood.
- Biddle, K., Blundell, A., & Sofat, N. (2023). Understanding clinical research: An introduction. Scion Publishing. <https://scionpublishing.com/product/understanding-clinical-research/>
- Harris, M., & Taylor, G. (2020). Medical Statistics Made Easy (4th ed.). Scion Publishing. <https://scionpublishing.com/product/medical-statistics-made-easy-fourth-edition/>
- Allen, A. K. (2012). Research skills for medical students. SAGE Publications, Inc. <https://doi.org/10.4135/9781526436016>
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4. Leadership

- Wamboldt, R., & Loughran, N. (2017). Communication skills for OSCEs. Scion Publishing. <https://scionpublishing.com/product/communication-skills-for-osces/>
- Edmonstone, J. (2018). Leadership development in health care in low and middle-income countries: Is there another way? *International Journal of Health Planning and Management*, 33(4), e1193–e1199. [https://doi.org/10.1002/hpm.2606​;contentReference\[oaicite:0\]{index=0}](https://doi.org/10.1002/hpm.2606​;contentReference[oaicite:0]{index=0})
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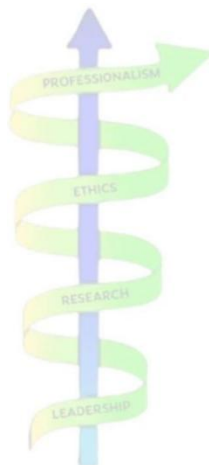
Cardiovascular-1				
<i>*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block</i>				Total Hours =
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
			- Define Medical Professionalism - Discuss Core Values: Altruism, Accountability, Integrity - Explain Ethical Practice and Moral Responsibility	
		Introduction of medical Professionalism	Reflect on a scenario or case study that demonstrates professionalism in healthcare, identifying key behaviours and attitudes that align with professional standards	Submit a reflective entry discussing what professionalism means in the context of healthcare. Use a case or example to highlight key professional behaviours you observed or practiced.
	Professionalism	Responsible & Accountable Medical Student	- Understand the importance of responsibility and accountability in maintaining regularity and punctuality as core professional behaviors expected of medical students. - Demonstrating regular attendance and punctuality in academic and clinical activities, reflecting on how this consistency contributes to their professional development.	Evidence of Attendance Record.

			- Appreciate student responsibility in following the code of conduct of the college - Review the college's code of conduct and identify key responsibilities expected of them as medical students.	Submit a reflective entry discussing the key points of the college's code of conduct and your responsibilities as a medical student. Guidelines how adherence to these rules shapes your
Place a "✓" in case box if step/task is performed satisfactorily, or N/O if not observed Ethics Code of Conduct: Duties of healthcare professionals <u>Satisfactory</u>: Performs the step or task according to the standards or guidelines <u>Unsatisfactory</u>: Unable to perform the step or task according to the standards or guidelines				
			Reflect on the importance of following these guidelines in maintaining professionalism and being aware of actions for misconduct (academic, non-academic/disciplinary).	journey toward becoming a responsible healthcare professional.
		Personal Qualities: Self Directed Learner	- Develop the ability to become a self-directed learner by setting achievable long-term and short-term goals and effectively managing time to meet academic and personal milestones. - Create a personal plan that includes both long-term and short-term academic goals and a weekly time schedule to help manage their studies and personal responsibilities.	Submit a personal learning plan outlining your long-term and short-term goals, as well as a detailed weekly time schedule. Reflect on how this plan will support your academic success and personal development as a self-directed learner

	Leadership		- Develop effective verbal communication skills, focusing on clear and concise communication in academic, clinical, and team-based settings to enhance collaboration procedure or guidelines and leadership abilities. - Practice delivering clear and concise verbal explanations of medical concepts or tasks during group activities, focusing on tone, clarity, and engagement with peers	C3K23 Year 01 Submit a reflection on a group activity where you practiced verbal communication skills. Highlight guidelines you conveyed information clearly and effectively, and reflect on areas where you can improve your verbal communication in academic or clinical settings.
Place a "✓" in case box if step/task is performed satisfactorily, or N/O if not observed. <u>Satisfactory</u>: Performs the step or task according to the standard procedure or guidelines <u>Unsatisfactory</u>: Unable to perform the step or task according to the standard procedure or guidelines				

Respiratory-1				
*Proposed Sequence of Topics Mentioned below. Medical Colleges are at liberty to manage according to their resources. Topics can switch within each Block				Total Hours =0
Code	Domain	Topic	Specific Learning Objectives	Proposed Portfolio Entry
	Research	Structure of a Manuscript	- Discuss the basic structure of a research manuscript using the IMRAD format (Introduction, Methods, Results, and Discussion) and its importance in scientific writing. - Identify various components of a given research manuscript using the IMRAD structure,	Submit the identified components on the manuscript.

			- Discuss the role of non-verbal communication, including body language, facial expressions, and gestures, in effectively conveying messages and building rapport in healthcare settings. - Practice appropriate non-verbal communication during simulated patient interactions or group discussions, such as eye contact, posture, and active listening cues.	C2K23 Year-01 Submit a reflection on a group activity or simulated interaction where you consciously used non-verbal communication to enhance the interaction. Discuss how it impacted your ability to lead or communicate effectively.
Place a "✓" in case box if step/task is performed satisfactorily, or N/O if not observed.				
Satisfactory: Performs the step or task according to the building rapport or	Leadership	Non-Verbal Communication		
Unsatisfactory: Unable to perform the step or task according to the standard or guidelines				



Volume:01
STUDENT



university of
Health Sciences
Lahore

Portfolio

Place a "✓" in case box if step/task satisfactorily, or N/O if not observed.

Satisfactorily, an "X" if it is not performed

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

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



Curriculum 2K23 Version 3.0



MODULE: Cardiovascular-1

DATE _____

DATE _____

CHECKED BY: _____

Roll No:	
Assignment Topic:	
Date:	
Submit a reflective entry discussing what professionalism means in the context of healthcare. Use a case or example to highlight key professional behaviours you observed or practiced. <u>Satisfactory</u>: Performs the step or task according to the standard procedure or guidelines <u>Unsatisfactory</u>: Unable to perform the step or task according to the standard procedure or guidelines	
Facilitator Remarks:	

C2K23 Year-01

Mark 'X' if step/task is performed satisfactorily, an "X" if it is not performed or not observed.

Roll No:	C2K23 Year-01
Assignment Topic:	Box if step/task is performed satisfactorily, an "X" if it is not performed
Date:	not observed.
Submit a reflective entry discussing what professionalism means in the context of healthcare. Use a case or example to highlight key professional behaviours you observed or practiced.	
<u>Satisfactory:</u> Performs the step or task according to the standard procedure or guidelines	
<u>Unsatisfactory:</u> Unable to perform the step or task according to the standard procedure or guidelines	

Facilitator Remarks:	C2K23 Year-01
	Box if step/task is performed satisfactorily, an "X" if it is not performed satisfactorily or N/A if not observed.
Roll No:	
Assignment Topic:	
Date:	
the step or task according to the standard procedure or guidelines unsatisfactory. Unable to perform the step or task according to the standard procedure or guidelines. Submit a reflective entry discussing the key points of the college's code of conduct and your responsibilities as a medical student. Include how adherence to these rules shapes your journey toward becoming a responsible healthcare professional.	

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

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

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

Facilitator Remarks:

Roll No:

Assignment Topic:

Date:

Submit a personal learning plan outlining your long-term and short-term goals, as well as a detailed weekly time schedule. Reflect on how this plan will support your academic success and personal development as a self-directed learner

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

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

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

Facilitator Remarks:

Roll No:

Assignment Topic:

Date:

Submit a reflection on a group activity where you practiced verbal communication skills. Highlight how you conveyed information clearly and effectively, and reflect on areas where you can improve your verbal communication in academic or clinical settings.

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

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

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

Facilitator Remarks:

Roll No:

Assignment Topic:

Date:	C2K23 Year-01
Evidence of Attendance Record. Place a "✓" in case box if step/task is performed satisfactorily, an "X" if it is not performed satisfactorily, or N/O if not observed. <u>Satisfactory</u>: Performs the step or task according to the standard procedure or guidelines <u>Unsatisfactory</u>: Unable to perform the step or task according to the standard procedure or guidelines	
Facilitator Remarks:	

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



ctorily, an "X" if it is not performed

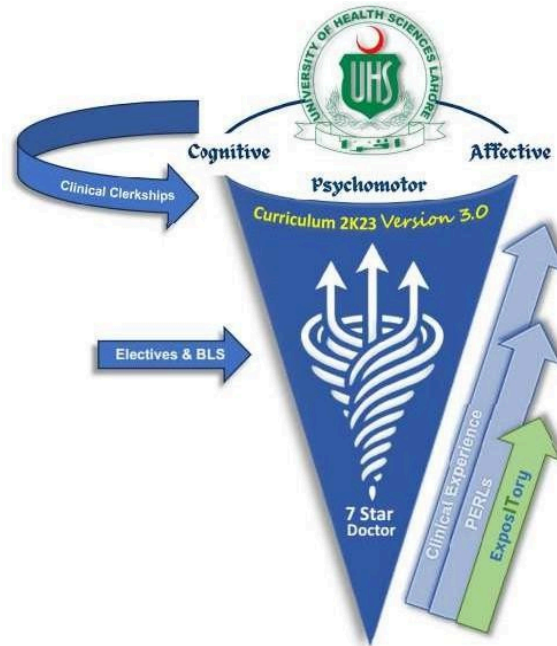
Satisfactory: Performs the step or task

ndard procedure or guidelines

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

ording to the standard procedure

Curriculum 2K23 Version 3.0



MODULE: Respiratory-I

DATE
FROM:

DATE TO:

CHECKED
BY:

Roll No:	
Assignment Topic:	
Date:	Mark with a checkmark if step/task is performed satisfactorily, an "X" if it is not performed satisfactorily, or "N" if not observed.
Submit the identified components on the manuscript	
<u>Satisfactory</u>: Performs the step or task according to the standard procedure or guidelines <u>Unsatisfactory</u>: Unable to perform the step or task according to the standard procedure or guidelines	
Facilitator Remarks:	

Roll No:	
Assignment Topic:	if step/task is performed satisfactorily, an "X" if it is not performed or not observed.
Date:	
Submit a reflection on a group activity or simulated interaction where you consciously used non-verbal communication to enhance the interaction. Discuss how it impacted your ability to lead or communicate effectively.	
Satisfactory: Perform the step or task according to the standard procedure or guidelines Unsatisfactory: Unable to perform the step or task according to the standard procedure or guidelines	
Facilitator Remarks:	

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

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

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

IMPORTANTNOTE

To be able to sit in Annual Exam

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

DISCLAIMER

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

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

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

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