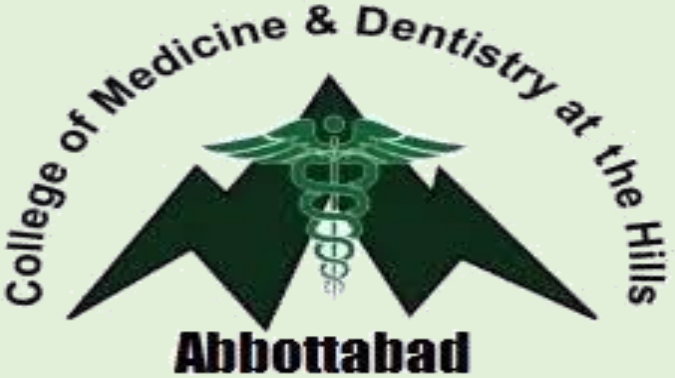

DEPARTMENT OF MEDICAL EDUCATION
COLLEGE OF MEDICINE & DENTISRY AT THE HILLS
ABBOTTABAD

CVS – II Module

.

Table of Contents

Teaching Hours Allocation

Table 1 Hours Allocation

S. No	Subject	Hours needed
1	Pathology	18
2	Pharmacology	20
3	Forensic medicine	2
4	Community medicine	2
5	General medicine / cardiology	7
6	Pediatrics	2
7	Anatomy	1
8	Physiology	1
9	Biochemistry	1
10	PRIME/MEDICAL EDUCATION	3
	Total	**57**

Themes

S. No.	Theme Title	Week No.
Theme 1	Chest Pain	2 (1)
Theme 2	blood pressure	1
Theme 3	Shortness of breath	2 (1)

Learning Objectives

Theme 1: Chest pain

Table 2 Chest Pain

Subjects	Topics	Hours	LOs
Anatomy	**Gross anatomy of heart, valves and coronary arteries**	1	Describe surface anatomy of the heart and heart valves
			Describe the anatomy of coronary circulation
			Enumerate heart valves and describe their gross morphology

Biochemistry	**Lipoproteins and cholesterol**	1	Classify and Describe types of lipoproteins
			Summarize cholesterol synthesis
Pathology	**Atherosclerosis**	1	Discuss the risk factors, Morphology, pathological changes and consequences of Atherosclerotic plaque
	Ischemia and infarction		Define Ischemia and infarction, and differentiate it from infarction
			Discuss Classification and pathophysiology of ischemic heart disease
			Discuss pathophysiology of myocardial infarction

Pharmacology	**Antianginal drugs**	1	Classify antianginal drugs
			Explain mechanism of action, pharmacokinetics and adverse effects of organic nitrates and calcium channel blockers
			Explain the rationale for use of **β**-adrenergic blockers and sodium channel blocker in the management of angina pectoris
	Lipid lowering drugs	2	Briefly describe the types of dyslipidemias
			List the lipid lowering drug classes
			Explain the mechanism of action, effect on serum lipid profile and adverse effects of each of the five drug classes
			Discuss drug-drug interaction of lipid lowering drugs
	Anticoagulant drugs	2	Classify anticoagulant drugs
			Discuss mechanism of action, uses of Unfractionated heparin
			Compare low molecular weight and unfractionated heparin
			Describe adverse effects of heparin and treatment of heparin overdose
			Describe mechanism of action and uses of direct Xa and IIa inhibitors

			Describe mechanism of action and uses of warfarin
			Describe adverse effects of warfarin and treatment of warfarin overdose
			Compare heparin and warfarin in terms of mechanism and onset of action
			Explain monitoring of anticoagulant therapy

			Describe important diet and drug interactions of warfarin
	Antiplatelet and thrombolytic drugs	1	Classify antiplatelet drugs
			List indications of antiplatelet therapy
			Explain the mechanism of action and adverse effects of each antiplatelet drug group
			Name thrombolytic drugs and explain their mechanism of action, uses and adverse effects
Forensic Medicine	**Chest trauma**	1	Describe heart injuries caused by regional injuries
			Discuss chest wall injuries in general
			Enumerate the complications of rib fracture
	Sudden death	1	Define sudden death
			Explain the causes of sudden death
			Describe autopsy findings in sudden death
			Describe the medicolegal importance of sudden death
Community Medicine	**Noncommunicable diseases:** **Cardiovascular diseases of public health importance**	2	Define Cardiovascular disease (CVD)
			Elaborate the concept of CVD risk stratification
			Describe the epidemiology of cardiovascular diseases and explain cardiovascular diseases of Public Health importance globally and in Pakistan
			Explain the known risk factors of CVD and cultural, racial and gender difference in CVD prevalence and incidence

	Hypertension		Describe the epidemiology of hypertension and its public Health importance globally and in Pakistan
General Medicine/Cardiology	**Coronary Heart disease**	1	Discuss CAD risk factors and strategies to reduce them
			Discuss strategies for primary and secondary prevention of CHD in outpatient setting

			Define chronic stable angina, its clinical signs and symptoms, laboratory findings, imaging techniques for assessment of it and management protocols
			Discuss coronary vasospasm and angina with normal coronary angiograms
	Acute coronary syndrome	1	Define Acute coronary syndrome
			Explain the spectrum of illness in ACS and relevant management steps
			Describe the clinical features and steps of the management of Myocardial infarction
			Describe risk stratification in myocardial infarction
			Describe complications of acute MI
	Hypertrophic cardiomyopathy		Discuss clinical features, imaging protocols, risk stratification and short/long-term management of hypertrophic cardiomyopathy
PRIME/MEDICAL EDUCATION	**Informed consent**	1	Obtaining informed consent from a patient before an invasive procedure

Theme II: blood pressure			
Subjects	**Topics**	**Hours**	**LOs**
Pathology	**Blood pressure**	2	Describe the mechanisms of blood pressure regulation
			Classify shock
	Shock		Describe the pathophysiology and types of shock
			Describe the stages pf shock
			Define sepsis and septic shock
			Discuss causes, pathogenesis, and laboratory findings in shock
			Discuss Disseminated intravascular coagulation in the context of sepsis
			Describe classification and pathophysiology of Hemorrhage

	Hypertension	1	Describe the causes, Pathogenesis, morphology and complications of Hypertension
	Aneurisms	1	Discuss pathophysiology of hypertension in pregnancy
			Describe the etiology, morphology and manifestations of vascular aneurisms
			Describe the causes, Pathogenesis and types of Aortic Aneurysm
	Aortic dissection		Describe the pathogenesis, morphology and clinical features of Aortic Dissection
	Vasculitis	1	Define vasculitis
			Classify vascilitides
			Describe the immunological mechanisms of noninfectious vasculitis
			Describe the morphology and clinical features of Giant cell arteritis
			Describe the morphology and clinical features of Takayasu arteritis
			Describe the morphology and clinical features of Polyarteritis nodosa
			Describe the morphology and clinical features of Kawasaki disease

			Describe the morphology, serological markers and clinical features of Wegener granulomatosis
			Describe the morphology and clinical features of Thromboangitis obliterans
	Diseases of veins	1	Differentiate between thrombophlebitis and Phlebothrombosis
			Describe the etiology and clinical features of varicose veins
			Enlist the benign and malignant tumors of the arteries and veins
Pharmacology	**Antihypertensive drugs**	2	Classify antihypertensive drugs
			Discuss role of diuretics in the management of hypertension

			Discuss the role of ACE inhibitors, Angiotensin receptor-blocking agents, Renin inhibitor in hypertension
			Explain the rationale for the use of β-blockers, αadrenoceptor blocking agent, centrally acting sympatholytic drugs in hypertension
			Describe the direct vasodilators (mechanism of action and drug toxicity) in relation to antihypertensive drug therapy
			Describe the role of Calcium channel blockers in hypertension
General Medicine/Cardiology	**Hypertension**	1	Define and classify hypertension
			Discuss drug treatment protocols for hypertension
			Describe the risk factors and complications of hypertension
			Describe the management of hypertensive emergencies and urgencies
Forensic medicine	**Cardiac poisons**	1	Classify Cardiac Poisons
			Describe the characteristic, clinical signs/symptoms, treatment and medicolegal aspects of cardiac glycosides
			Discuss cardiac effects of methylphenidate, cocaine and Ice

			Describe the characteristic, clinical signs/symptoms, treatment and medico legal aspects of Oleander

PRIME/MEDICAL EDUCATION	**Counselling skills**	1	Develops counselling skills in professional life

Theme III: Shortness of breath

Subjects	Topics	Hours	LOS
Physiology	**Cardiac cycle**	1	Outline major events in cardiac cycle
			Discuss physiology of heart sounds and murmurs
Pathology	**Congestive heart failure**	2	Describe the types, etiology, pathogenesis, and clinical features of congestive heart failure
	Cardiomyopathies		Describe the Pathological patterns, causes, morphological changes and clinical features of Cardiomyopathies
	Congenital heart diseases	2	Describe the Etiology, Pathogenesis and clinical features of Tetrology of Fallots, ASD, VSD and pulmonary stenosis
	Valvular heart diseases		Describe the Etiology, pathogenesis and clinical features of Aortic stenosis, Aortic regurgitation, Mitral stenosis and Mitral regurgitation
	Rheumatic fever	1	Discuss pathophysiology and laboratory findings in rheumatic fever
	Rheumatic heart disease		Discuss pathological changes and morphology of rheumatic heart disease
	Thrombosis and Embolism	1	Describe the mechanism and pathogenetic mechanisms of vascular thrombosis
			Enlist hypercoagulable states
			Define embolism
			Discuss types of embolism
			Describe the etiology, pathogenesis, morphology and clinical features of pulmonary embolism
	Endocarditis	1	Discuss Etiology, Pathogenesis, Morphology, diagnostic criteria, clinical features and complications of infective endocarditis
			Discuss the types of non-infected vegetation

Pharmacology	**Drugs used in heart failure**	2	Define the different classes of the drug used in the treatment of heart failure
			Explain the pharmacological effects, clinical uses, adverse effects and drug interactions of digitalis glycosides
			Explain the signs symptoms and treatment of digoxin overdose
			Enlist positive inotropic drugs (other than digoxin) that are used in heart failure
			Classify the five major groups of diuretic drugs and relate them to their site of action
			Discuss the mechanism of action, clinical applications and adverse effects of carbonic anhydrase enzyme inhibitors, osmotic diuretics, thiazide diuretics, loop diuretics and potassium sparing diuretics
			Enlist potassium sparing and potassium losing diuretics
	Antiarrhythmic drugs	2	Classify antiarrhythmic drugs
			Describe the effect of different classes of antiarrhythmic drugs on membrane potential of cardiomyocytes
			Explain the mechanism of action of all the classes of antiarrhythmic drugs
			Discuss the adverse effects and clinical uses of antiarrhythmic drugs
			Discuss workup and management of pulmonary edema

General Medicine/Cardiology	**Heart failure**	1	Enlist and explain causes of heart failure
			Describe workup and management of heart failure
	Disorders of heart rate and rhythm	1	Classify arrhythmias and heart blocks
			Describe the etiology, ECG findings and management of Atrial fibrillation
			Discuss types, workup and management of ventricular arrhythmias
	Pulmonary embolism	1	Describe the etiology, clinical features and diagnostic workup of pulmonary embolism
			Discuss risk stratification and management of pulmonary embolism
	Pulmonary hypertension		Discuss cardiac causes of pulmonary hypertension and outline their management
	Myocarditis	1	Discuss causes and management of myocarditis
	Pericardial diseases		Define and classify pericarditis
			Discuss clinical findings and treatment of pericarditis
			Describe the etiology and management of pericardial effusion
Pediatrics	**Cyanotic and acyanotic congenital heart disease**	1	Delineate the difference between the acyanotic and cyanotic heart disease conditions
			Enumerate the various defects, involving both conditions
	Rheumatic fever	1	Describe the etiology of rheumatic fever
			Describe Duckett Johns criteria for diagnosis of RF
			Discuss about primary and secondary prophylaxis of rheumatic heart disease
PRIME/MEDICAL EDUCATION	**SWOT Analysis**	1	Perform SWOT analysis for a particular task

Practical			
Subjects	**Topics**	**Hours**	**LOs**
Pharmacology	Myocardial Infarction	1.5	Construct a prescription for a patient with Myocardial Infarction
	Hypertension	1.5	Construct a prescription for a patient with Hypertension
	Congestive Cardiac Failure	1.5	Construct a prescription for a patient with Congestive Cardiac Failure
Pathology	Lipid Profile	1.5	Demonstrate Estimation of total cholesterol
	Hemangioma	1.5	Identify the morphological changes occurring in hemangioma

Forensic medicine	Cardiac toxins	1.5	Identify the following cardiogenic toxins: • Digitalis • Cannabis • Heroin

S#	Subjects	Textbooks
1.	**Community Medicine**	1.Community Medicine by Parikh 2. Community Medicine by M Illyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma
2.	**Forensic Medicine**	1. Nasib R. Awan. Principles and practice of Forensic Medicine 1st ed. 2002. 2. Parikh, C.K. Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology. 7th ed.2005. 3.Knight B. Simpson's Forensic Medicine. 11th ed.1993. 4. Knight and Pekka. Principles of forensic medicine. 3rd ed. 2004 5. Krishan VIJ. Text book of forensic medicine and toxicology (principles and practice). 4th ed. 2007 6. Dikshit P.C. Text book of forensic medicine and toxicology. 1st ed. 2010 7. Polson. Polson's Essential of Forensic Medicine. 4th edition. 2010. 8. Rao. Atlas of Forensic Medicine (latest edition).
		9. Rao.Practical Forensic Medicine 3rd ed ,2007. 10. Knight: Jimpson's Forensic Medicine 10th 1991,11th ed.1993 11. Taylor's Principles and Practice of Medical Jurisprudence. 15th ed.1999
3.	**Pathology**	1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD
4.	**Pharmacology**	1. Lippincott Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung
5.	**Anatomy**	K.L. Moore, Clinically Oriented Anatomy

Learning Resources Assessment Plan – 3rd Year MBBS

The year-3 will be assessed in 3 blocks

1) Block-1 (Foundation 2 and Infection and Inflammation modules) will be assessed in paper-G
2) Block-2 (Multisystem, blood and MSK modules) will be assessed in paper-H
3) Block-3 (CVS and Respiratory module) will be assessed in paper-I
4) Each written paper consists of 120 MCQs and
5) Internal assessment will be added to final marks in KMU as shown in below table.

In OSPE, each station will be allotted 6 marks, and a total of 120 (+10% marks of internal assessment) marks are allocated for each OSPE/OSCE examination.

Subjects	Total MCQs
CVS	60

Respiratory II	60

Year 3 Professional Exam in System-based Curriculum

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE (10%)	TOTAL MARKS
Paper G	Foundation-II Inf.&Inflamm.	120	14	120	14	268
Paper H	Multisystem Blood MSK-II	120	13	120	14	267
Paper I	CVS-II Respiratory-II	120	13	120	12	265
TOTAL MARKS		360	40	360	40	800

Total	**120**

*Research viva of 20 marks will be conducted in paper-L. However, the rest of 15 marks will be decided by the concerned department internally for the contribution of the students in research project/thesis.

Assessment Blueprints

Table 3 Paper I (CVS-II)

Subject	Total OSCE stations
Respiratory-II	10
CVS	10
Total	**20**

Table 4 CVS OSCEs

A minimum of 20 stations will be used in final examsTotal marks will be 120 (6 marks for each station).