

**CVS II
MODULE
STUDY GUIDE
3RD YEAR MBBS**

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Vision and Mission of KGMC

Khyber Medical University: Vision



Khyber Medical University will be the global leader in health sciences academics and research for efficient and compassionate health care.

Khyber Girls Medical College: Vision



“Excellence in health care, research ,teaching and training in the service of Humanity”

Khyber Girls Medical College: Mission

The mission of KGMC is to promote compassionate and professional health care leaders Who are knowledgeable, skillful, and community oriented lifelong learners serving humanity through evidence based practice





Curriculum Committee KGMC

Chair:

Professor Dr.Zahid Aman , Dean KGMC.

Co-Chair:

Professor Dr Amir Mohammad , Associate Dean KGMC.

Clinical Sciences:

- Dr. Mohammad Noor Wazir ,Department of Medicine KGMC HMC
- Dr. Bushra Rauf Department of Gynae KGMC HMC.
- Dr. Sofia Iqbal, Department of Ophthalmology KGMC HMC.
- Dr. Said Amin Department of Medicine KGMC HMC.
- Dr. Ghareeb Nawaz Department of ENT KGMC HMC.
- Dr. Jamshed Alam Department of Surgery KGMC HMC.
- Dr. Ambreen Ahmad, Department of Pediatrics KGMC HMC.
- Dr. Ain-ul-Hadi Department of Surgery KGMCHMC.
- Dr. Fawad Rahim Department of Medicine KGMCHMC.

Behavioral Sciences:

- Dr. Ameer Abbas Department of Psychiatry KGMC HMC.

Medical Education

- Dr. Naheed Mahsood, Department of Medical Education, KGMC.
- Dr. Naveed Afzal Khan, Department of Medical Education, KGMC.

- Dr Onaiza Nasim , Department of Medical Education, KGMC

Basic Sciences:

- Dr. Amin-ul-Haq Department of Biochemistry, KGMC.
- Dr. Khalid Javed Department of Pathology, KGMC.
- Dr. Raheela Amin Department of Community Medicine, KGMC.
- Dr. Zubia Shah Department of Physiology, KGMC.
- Dr. Naheed Siddique Department of Forensic Medicine, KGMC.
- Dr. Shams Suleman Department of Pharmacology, KGMC.
- Dr. Shahab-ud-Din, Department of Anatomy, KGMC.



Cardiovascular System Module

- Dr Prof Abdul Hameed Head of Department Of PharmacologyMember
- Dr Prof Sabina Aziz Department of Community Medicine.....Member
- Dr Prof Bushra Rauf Department of GynecologyMember
- Dr Prof Samia Tabassum Department of Gynae.....Member
- Dr Shakila Asif Associate Professor Department Of Community Medicine.....Member
- Dr Anwar Ul Haq Associate Professor Department of Forensic MedicineMember
- Dr Shagufta Nasir Assistant Professor Department of Pathology.....Member
- Dr Jahanzeb Khan Associate Professor Department of Pediatric.....Member
- Dr Ainul Huda Associate Professor Department of Surgery.....Member
- Dr Yousaf Jan Assistant Professor Department of Surgery..... Member
- Dr Fawad Rahim Assistant Professor Department of MedicineMember
- Dr Fahad Falah Lecturer Department of Pharmacology.....Member

Integrated curriculum:

An integrated curriculum is all about making connections, whether to real life or across the disciplines, about skills or about knowledge. An integrated curriculum fuses subject areas, experiences, and real-life knowledge together to make a more fulfilling and tangible learning environment for students. Integrated teaching means that subjects are presented as a meaningful whole. Students will be able to have better understanding of basic sciences when they repeatedly learn in relation to clinical examples. Case based discussions, computer-based assignments, early exposure to clinics, wards, and skills acquisition in skills lab are characteristics of integrated teaching program.

Outcomes of the curriculum:

The outcomes of the curriculum of MBBS According to the PMC are as follows

- Knowledgeable
- Skilful
- Community Health Promoter
- Problem-solver
- Professional
- Researcher
- Leader
- Role model

KNOWLEDGE

By the end of five year MBBS program the KGMC student should be able to;

1. Acquire a high level of clinical proficiency in history taking, physical examination, differential diagnosis, and the effective use of medicine's evolving diagnostic and procedural capabilities including therapeutic and palliative modalities
2. Manage the common prevalent diseases in community
3. Identify the common medical emergencies
4. Develop plan for prevention of common community diseases
5. Formulate a referral plan
6. Compose a prescription plan

PSYCHOMOTOR

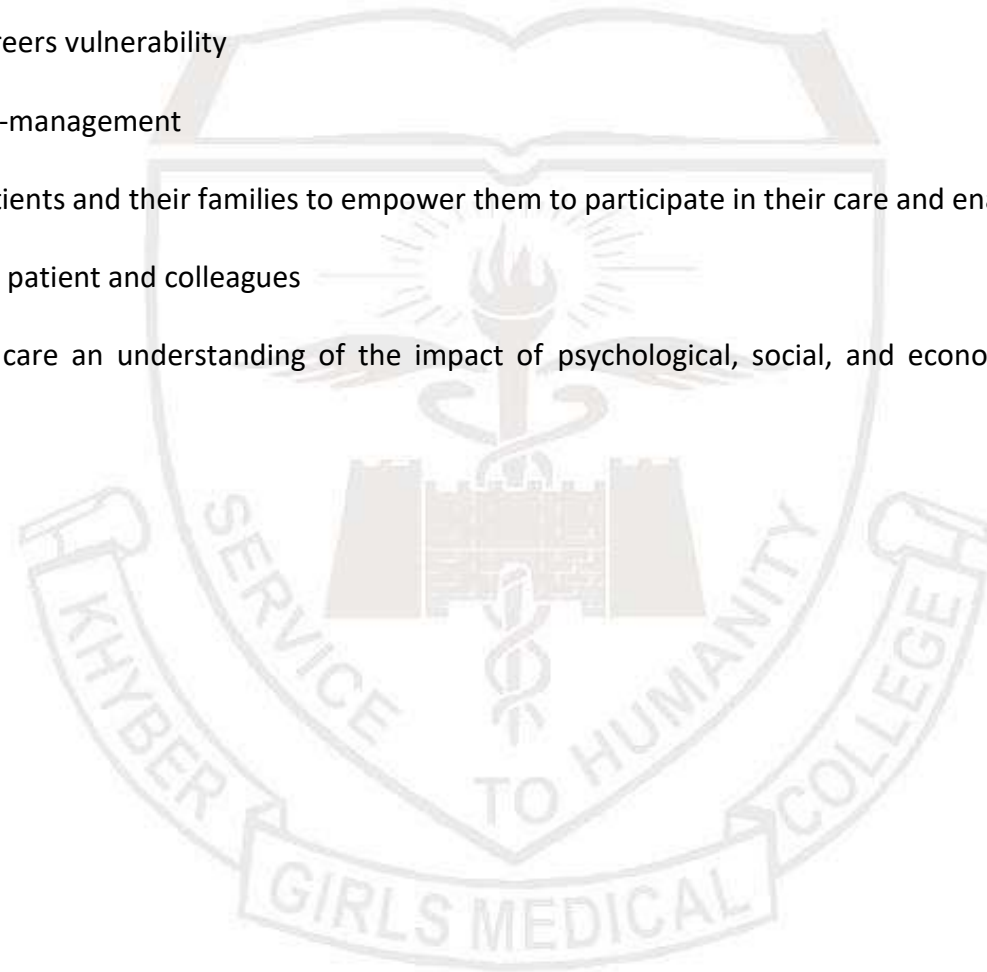
By the end of five year MBBS program the KGMC student should be able to;

1. Demonstrate the ability to perform the disease specific relevant examination
2. Respond to common medical emergencies
3. Master the skill of first aid
4. Perform BLS
5. Apply the best evidenced practices for local health problems

AFFECTIVE

By the end of five year MBBS program the KGMC student should be able to

1. Relate to patient and caregivers vulnerability
2. Demonstrate ethical self-management
3. Counsel and educate patients and their families to empower them to participate in their care and enable shared decision-making.
4. Display compassion with patient and colleagues
5. Demonstrate in clinical care an understanding of the impact of psychological, social, and economic factors on human health and disease



Introduction to The Cardiovascular System Module

The cardiovascular system is sometimes called the blood-vascular, or simply the circulatory, system. It consists of the heart, which is a muscular pumping device, and a closed system of vessels called arteries, veins, and capillaries. As the name implies, blood contained in the circulatory system is pumped by the heart around a closed circle or circuit of vessels as it passes again and again through the various "circulations" of the body.

The vital role of the cardiovascular system in maintaining homeostasis depends on the continuous and controlled movement of blood through the thousands of miles of capillaries that permeate every tissue and reach every cell in the body. It is in the microscopic capillaries that blood performs its ultimate transport function. Nutrients and other essential materials pass from capillary blood into fluids surrounding the cells as waste products are removed.





CVS Module
Year-3
Khyber Medical College Peshawar

S. No	Themes		Duration
1	Theme 1	Chest Pain	2weeks
2	Theme 2	blood pressure	1 week
3	Theme 3	shortness of breath	2 weeks

Specific learning objectives

Theme 1 ...chest pain				
Subject	Topic	Learning objectives	Teaching strategy	Assessment
Anatomy	Gross anatomy of heart, valves, and coronary arteries	Describe surface anatomy of the heart and heart valves	LGF/SGD	MCQ
		Describe the anatomy of coronary circulation	LGF/SGD	MCQ
		Enumerate heart valves and describe their gross morphology	LGF/SGD	MCQ
Biochemistry	Lipoproteins and cholesterol	Classify and Describe types of lipoproteins	LGF/SGD	MCQ
		Summarize cholesterol synthesis	LGF/SGD	MCQ

Pathology	Atherosclerosis	Discuss the risk factors, Morphology, pathological changes and consequences of Atherosclerotic plaque	LGF/SGD	MCQ
	Ischemia and infarction	Define Ischemia and infarction, and differentiate it from infarction	LGF/SGD	MCQ
		Discuss Classification and pathophysiology of ischemic heart disease	LGF/SGD	MCQ
		Discuss pathophysiology of myocardial infarction	LGF/SGD	MCQ
Pharmacology	Antianginal drugs	Classify antianginal drugs	LGF/SGD	MCQ
		Explain mechanism of action, pharmacokinetics and adverse effects of organic nitrates and calcium channel blockers	LGF/SGD	MCQ
		Explain the rationale for use of β -adrenergic blockers and sodium channel blocker in the management of angina	LGF/SGD	MCQ
	Lipid lowering drugs	Briefly describe the types of dyslipidemias	LGF/SGD	MCQ

		List the lipid lowering drug classes	LGF/SGD	MCQ
		Explain the mechanism of action, effect on serum lipid profile and adverse effects of each of the five drug classes	LGF/SGD	MCQ
		Discuss drug-drug interaction of lipid lowering drugs	LGF/SGD	MCQ
	Anticoagulant drugs	Classify anticoagulant drugs	LGF/SGD	MCQ
		Discuss mechanism of action, uses of Unfractionated heparin	LGF/SGD	MCQ
		Compare low molecular weight and unfractionated heparin	LGF/SGD	MCQ
		Describe adverse effects of heparin and treatment of heparin overdose	LGF/SGD	MCQ
		Describe mechanism of action and uses of direct Xa and IIa inhibitors	LGF/SGD	MCQ

		Describe mechanism of action and uses of warfarin	LGF/SGD	MCQ
		Describe adverse effects of warfarin and treatment of warfarin overdose	LGF/SGD	MCQ
		Compare heparin and warfarin in terms of mechanism and onset of action	LGF/SGD	MCQ
		Explain monitoring of anticoagulant therapy	LGF/SGD	MCQ
		Describe important diet and drug interactions of warfarin	LGF/SGD	MCQ
	Antiplatelet and thrombolytic drugs	Classify antiplatelet drugs	LGF/SGD	MCQ
		List indications of antiplatelet therapy	LGF/SGD	MCQ
		Explain the mechanism of action and adverse effects of each antiplatelet drug group	LGF/SGD	MCQ

		Name thrombolytic drugs and explain their mechanism of action, uses and adverse effects	LGF/SGD	MCQ
Forensic Medicine	Chest trauma	Describe heart injuries caused by regional injuries	LGF/SGD	MCQ
		Discuss chest wall injuries in general	LGF/SGD	MCQ
		Enumerate the complications of rib fracture	LGF/SGD	MCQ
	Sudden death	Define sudden death	LGF/SGD	MCQ
		Explain the causes of sudden death	LGF/SGD	MCQ
		Describe autopsy findings in sudden death	LGF/SGD	MCQ
		Describe the medicolegal importance of sudden death	LGF/SGD	MCQ

Community Medicine	cardiovascular diseases as public health issues	Define Cardiovascular disease(CVD)	LGF/SGD	MCQ
		Elaborate the concept of CVD risk stratification	LGF/SGD	MCQ
		Describe the epidemiology of cardiovascular diseases and explain cardiovascular diseases of Public Health importance globally and in Pakistan	LGF/SGD	MCQ
		Explain the known risk factors of CVD and cultural, racial and gender difference in CVD prevalence and incidence	LGF/SGD	MCQ
General Medicine/Cardiology	Coronary Heart disease	Discuss CAD risk factors and strategies to reduce them	LGF/SGD	MCQ
		Discuss strategies for primary and secondary prevention of CHD in outpatient setting	LGF/SGD	MCQ
		Define chronic stable angina, its clinical signs and symptoms, laboratory findings, imaging techniques for assessment of it and management protocols	LGF/SGD	MCQ
		Discuss coronary vasospasm and angina with normal	LGF/SGD	MCQ

		coronary angiograms	LGF/SGD	MCQ
	Acute coronary syndrome	Define Acute coronary syndrome.	LGF/SGD	MCQ
		Explain the spectrum of illness in ACS and relevant management steps	LGF/SGD	MCQ
		Describe the clinical features and steps of the management of Myocardial infarction	LGF/SGD	MCQ
		Describe risk stratification in myocardial infarction	LGF/SGD	MCQ
		Describe complications of acute MI	LGF/SGD	MCQ
	Hypertrophic cardiomyopathy	Discuss clinical features, imaging protocols, risk stratification and short/long-term management of hypertrophic cardiomyopathy.	LGF/SGD	MCQ

Theme 2: Blood Pressure

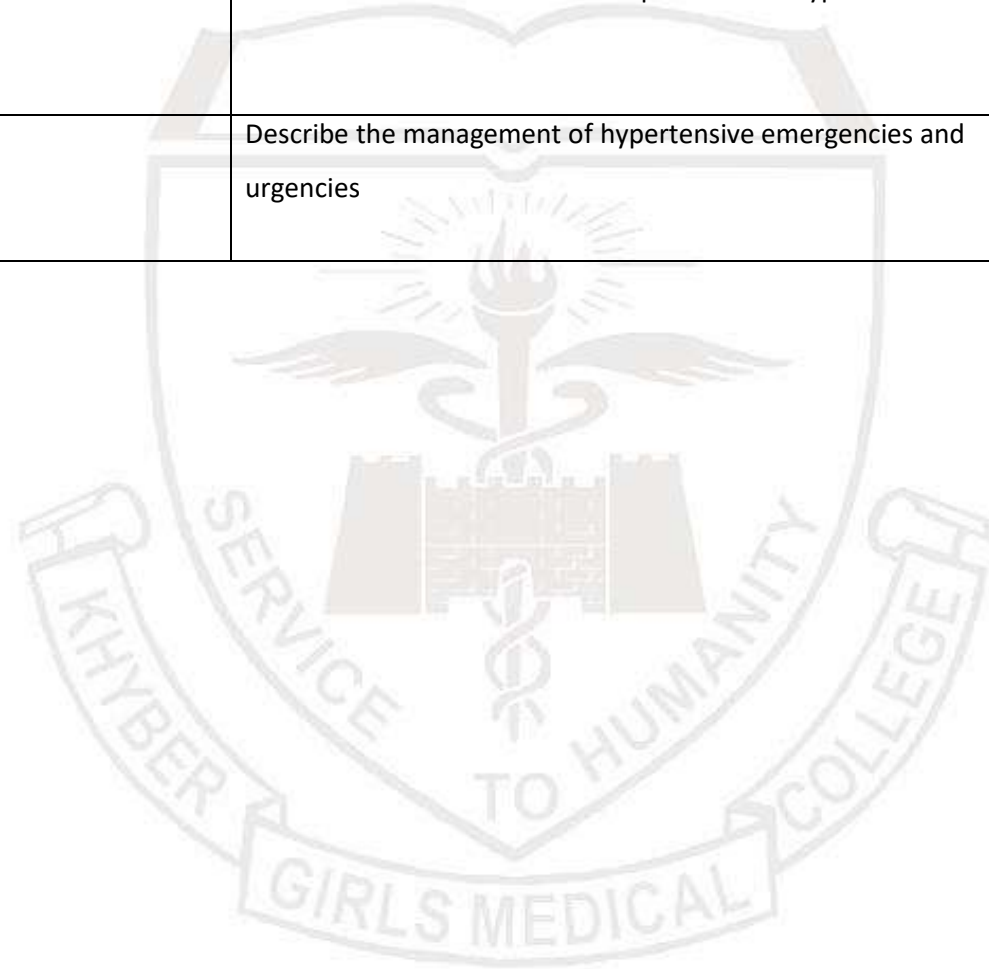
Pathology	Blood pressure	Describe the mechanisms of blood pressure regulation	LGF/SGD	MCQ
	Shock	Classify shock	LGF/SGD	MCQ
		Describe the pathophysiology and types of shock	LGF/SGD	MCQ
		Describe the stages of shock	LGF/SGD	MCQ
	Hypertension	Describe the causes, Pathogenesis, morphology and complications of Hypertension	LGF/SGD	MCQ
		Discuss pathophysiology of hypertension in pregnancy	LGF/SGD	MCQ
	Low Blood pressure	Define sepsis and septic shock	LGF/SGD	MCQ
		Discuss causes, pathogenesis, and laboratory findings in shock	LGF/SGD	MCQ

		Discuss Disseminated intravascular coagulation in the context of sepsis	LGF/SGD	MCQ
		Describe classification and pathophysiology of Hemorrhage	LGF/SGD	MCQ
		Describe the etiology, morphology and manifestations of vascular aneurisms	LGF/SGD	MCQ
		Describe the causes, Pathogenesis and types of Aortic Aneurysm	LGF/SGD	MCQ
		Describe the pathogenesis, morphology and clinical features of Aortic Dissection	LGF/SGD	MCQ
		Define vasculitis	LGF/SGD	MCQ
		Classify vasculitides	LGF/SGD	MCQ
		Describe the immunological mechanisms of non-infectious vasculitis	LGF/SGD	MCQ

		Describe the morphology and clinical features of Giant cell arteritis	LGF/SGD	MCQ
		Describe the morphology and clinical features of Takayasu arteritis	LGF/SGD	MCQ
		Describe the morphology and clinical features of Polyarteritis nodosa	LGF/SGD	MCQ
		Describe the morphology and clinical features of Kawasaki disease	LGF/SGD	MCQ
		Describe the morphology, serological markers and clinical features of Wegener granulomatosis	LGF/SGD	MCQ
	Diseases of veins	Differentiate between thrombophlebitis and Phlebothrombosis	LGF/SGD	MCQ
		Describe the etiology and clinical features of varicose veins	LGF/SGD	MCQ
		Enlist the benign and malignant tumors of the arteries and veins	LGF/SGD	MCQ

Pharmacology	Antihypertensive drugs	Classify antihypertensive drugs	LGF/SGD	MCQ
		Discuss role of diuretics in the management of hypertension	LGF/SGD	MCQ
		Discuss the role of ACE inhibitors, Angiotensin receptor-blocking agents, Renin inhibitor in hypertension	LGF/SGD	MCQ
		Explain the rationale for the use of β - blockers, α -adrenoceptor blocking agent, centrally acting sympatholytic drugs in hypertension	LGF/SGD	MCQ
		Describe the direct vasodilators (mechanism of action and drug toxicity) in relation to antihypertensive drug therapy	LGF/SGD	MCQ
		Describe the role of Calcium channel blockers in hypertension	LGF/SGD	MCQ
General Medicine/Cardiology	Hypertension	Define and classify hypertension	LGF/SGD	MCQ
		Discuss drug treatment protocols for hypertension		

			LGF/SGD	MCQ
		Describe the risk factors and complications of hypertension	LGF/SGD	MCQ
		Describe the management of hypertensive emergencies and urgencies	LGF/SGD	MCQ



Forensic medicine	Cardiac poisons	Classify Cardiac Poisons	LGF/SGD	MCQ
		Describe the characteristic, clinical signs/symptoms, treatment and medicolegal aspects of cardiac glycosides	LGF/SGD	MCQ
		Discuss cardiac effects of methylphenidate, cocaine and Ice	LGF/SGD	MCQ
		Describe the characteristic, clinical signs/symptoms, treatment and medico legal aspects of Oleander	LGF/SGD	MCQ
Theme 3: Shortness of breath				
Physiology	Cardiac cycle	Outline major events in cardiac cycle	LGF/SGD	MCQ
		Discuss physiology of heart sounds and murmurs	LGF/SGD	MCQ
Pathology	Congestive heart failure	Describe the types, etiology, pathogenesis, and clinical features of congestive heart failure	LGF/SGD	MCQ

	Congenital heart diseases	Describe the Etiology, Pathogenesis and clinical features of Tetralogy of Fallots, ASD, VSD and pulmonary stenosis	LGF/SGD	MCQ
	Valvular heart diseases	Describe the Etiology, pathogenesis and clinical features of Aortic stenosis, Aortic regurgitation, Mitral stenosis and Mitral regurgitation	LGF/SGD	MCQ
	Cardiomyopathies	Describe the Pathological patterns, causes, morphological changes and clinical features of Cardiomyopathies	LGF/SGD	MCQ
	Rheumatic fever	Discuss pathophysiology and laboratory findings in rheumatic fever	LGF/SGD	MCQ
	Rheumatic heart disease	Discuss pathological changes and morphology of rheumatic heart disease	LGF/SGD	MCQ
	Thrombosis and Embolism	Describe the mechanism and pathogenetic mechanisms of vascular thrombosis	LGF/SGD	MCQ
		Enlist hypercoagulable states	LGF/SGD	MCQ
		Define embolism		

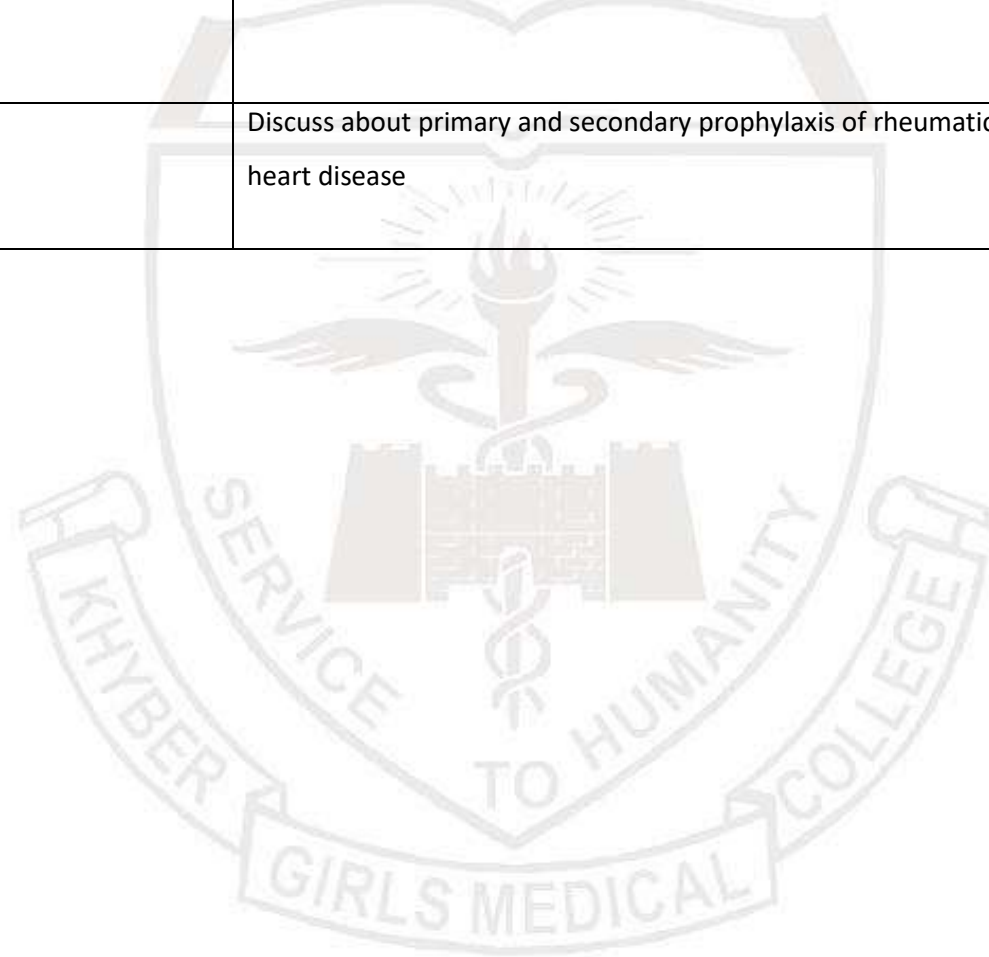
			LGF/SGD	MCQ
		Discuss types of embolism	LGF/SGD	MCQ
		Describe the etiology, pathogenesis, morphology and clinical features of pulmonary embolism	LGF/SGD	MCQ
	Endocarditis	Discuss Etiology, Pathogenesis, Morphology, diagnostic criteria, clinical features and complications of infective endocarditis	LGF/SGD	MCQ
		Discuss the types of non-infected vegetation	LGF/SGD	MCQ
Pharmacology	Drugs used in heart failure	Define the different classes of the drug used in the treatment of heart failure	LGF/SGD	MCQ
		Explain the pharmacological effects, clinical uses, adverse effects and drug interactions of digitalis glycosides	LGF/SGD	MCQ
		Explain the signs symptoms and treatment of digoxin overdose	LGF/SGD	MCQ
		Enlist positive inotropic drugs (other than digoxin) that are used		

		in heart failure	LGF/SGD	MCQ
		Classify the five major groups of diuretic drugs and relate them to their site of action	LGF/SGD	MCQ
		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	LGF/SGD	MCQ
		Enlist potassium sparing and potassium losing diuretics	LGF/SGD	MCQ
	Antiarrhythmic drugs	Classify antiarrhythmic drugs	LGF/SGD	MCQ
		Describe the effect of different classes of antiarrhythmic drugs on membrane potential of cardiomyocytes	LGF/SGD	MCQ
		Explain the mechanism of action of all the classes of antiarrhythmic drugs	LGF/SGD	MCQ
		Discuss the adverse effects and clinical uses of antiarrhythmic drugs	LGF/SGD	MCQ

General Medicine/Cardiology	Heart failure	Discuss workup and management of pulmonary edema	LGF/SGD	MCQ
		Enlist and explain causes of heart failure	LGF/SGD	MCQ
		Describe workup and management of heart failure	LGF/SGD	MCQ
	Disorders of heart rate and rhythm	Classify arrhythmias and heart blocks	LGF/SGD	MCQ
		Describe the etiology, ECG findings and management of Atrial fibrillation	LGF/SGD	MCQ
		Discuss types, workup and management of ventricular arrhythmias	LGF/SGD	MCQ
	Pulmonary embolism	Describe the etiology, clinical features and diagnostic workup of pulmonary embolism	LGF/SGD	MCQ
		Discuss risk stratification and management of pulmonary embolism	LGF/SGD	MCQ

	Pulmonary hypertension	Discuss cardiac causes of pulmonary hypertension and outline their management	LGF/SGD	MCQ
	Myocarditis	Discuss causes and management of myocarditis	LGF/SGD	MCQ
	Pericardial diseases	Define and classify pericarditis	LGF/SGD	MCQ
		Discuss clinical findings and treatment of pericarditis	LGF/SGD	MCQ
		Describe the etiology and management of pericardial effusion	LGF/SGD	MCQ
Pediatrics	Cyanotic and acyanotic congenital heart disease	Delineate the difference between the acyanotic and cyanotic heart disease conditions	LGF/SGD	MCQ
		Enumerate the various defects, involving both conditions	LGF/SGD	MCQ
	Rheumatic fever	Describe the etiology of rheumatic fever		

			LGF/SGD	MCQ
		Describe Duckett Johns criteria for diagnosis of RF	LGF/SGD	MCQ
		Discuss about primary and secondary prophylaxis of rheumatic heart disease	LGF/SGD	MCQ



Practical work				
Pharmacology	Myocardial Infarction	Construct a prescription for a patient with Myocardial Infarction	Practical	OSPE
	Hypertension	Construct a prescription for a patient with Hypertension	Practical	OSPE
	Congestive Cardiac Failure	Construct a prescription for a patient with Congestive Cardiac Failure	Practical	OSPE
Pathology	Lipid Profile	Demonstrate Estimation of total cholesterol	Practical	OSPE
	Hemangioma	Identify the morphological changes occurring in hemangioma	Practical	OSPE
Forensic medicine	Cardiac toxins	Identify the following cardiogenic toxins: <ul style="list-style-type: none"> • Digitalis • Cannabis • Heroin 	Practical	OSPE

Teaching and learning strategies:

The following teaching learning methods are used to promote better understanding:

- Interactive Lectures
- Hospital Clinic visits
- Small Group Discussion
- Skills session
- Self-Directed Study

Interactive lectures:

An interactive lecture is an easy way for instructors to intellectually engage and involve students as active participants in a lecture-based class of any size. Interactive lectures are classes in which the instructor breaks the lecture at least once per class to have students participate in an activity that lets them work directly with the material.

- The instructor might begin the interactive segment with an engagement trigger that captures and maintains student attention.

- Then the instructor incorporates an activity that allows students to apply what they have learned or give them a context for upcoming lecture material.
- As the instructor feels more comfortable using interactive techniques he or she might begin to call upon a blend of various interactive techniques all in one class period.

Hospital Clinic visits:

In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module.

Small group discussion (SGD):

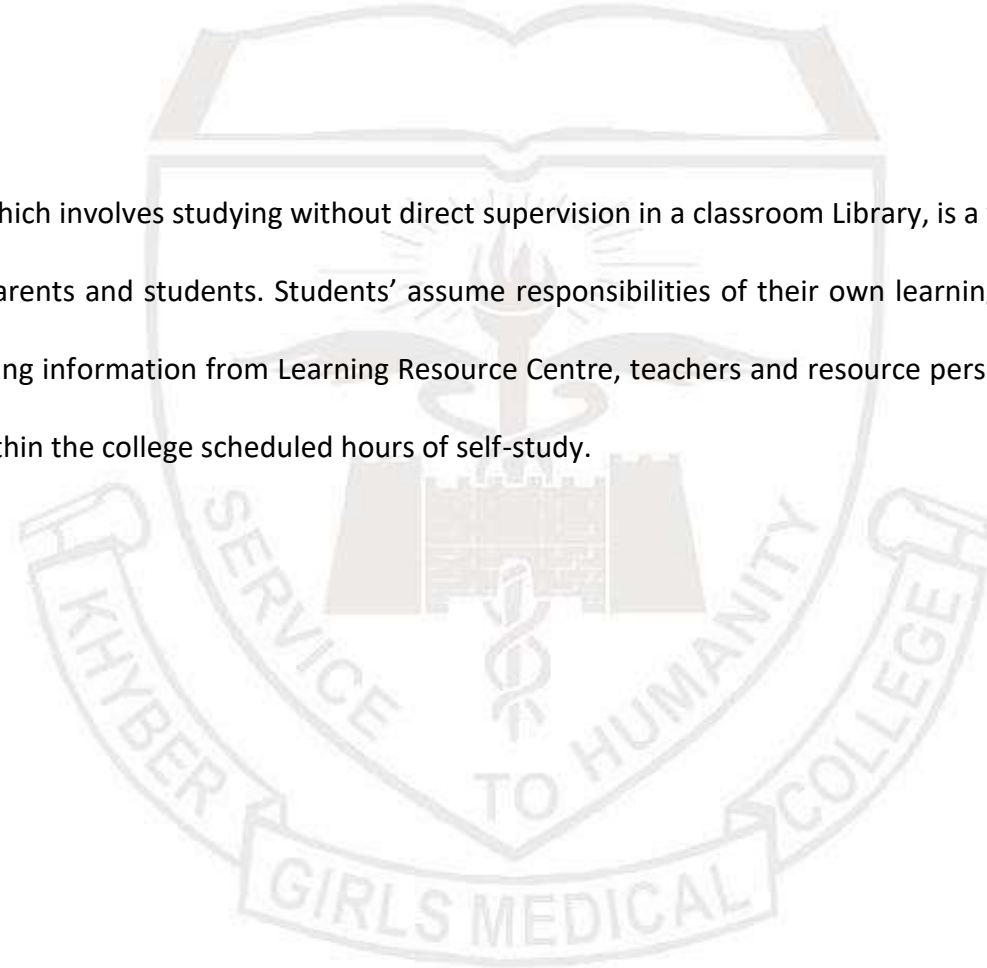
The shy and less articulate are more able to contribute. Students learn from each other. Everyone gets more practice at expressing their ideas. A two way discussion is almost always more creative than individual thoughts. Social skills are practiced in a 'safe' environment e.g. tolerance, cooperation. This format helps students to clarify concepts acquire skills or attitudes. Students exchange opinions and apply knowledge gained from lectures, tutorials and self-study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

Skills Practical session:

Skills relevant to respective module are observed and practiced where applicable in skills laboratory or Laboratories of various departments.

Self-Directed learning (SDL):

Self-directed learning, which involves studying without direct supervision in a classroom Library, is a valuable way to learn and is quickly growing in popularity among parents and students. Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Centre, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.



Time Table:

The timetables for the module will be shared via Edmodo and the notice boards in advance.

Assessment tools:

Theoretical knowledge is tested by a written examination system constituted by multiple choice questions (MCQs). The assessment of practical knowledge involves oral, spot, or objective structured practical examinations (OSPE).

Multiple Choice Questions (MCQs):

- Multiple choice questions (MCQs) are a form of assessment for which students are asked to select the best choice from a list of answers.
- MCQ consists of a stem and a set of options. The stem is usually the first part of the assessment that presents the question as a problem to be solved; the question can be an incomplete statement which requires to be completed and can include a graph, a picture or any other relevant information. The options are the possible answers that the student can choose from, with the correct answer called the key and the incorrect answers called distractors.
- Correct answer carries one mark, and incorrect 'zero mark'. There is NO negative marking.
- Students mark their responses on specified computer-based sheet designed for the college.
- The block exam will comprise of 120 MCQs and will be compiled according to the shared blueprint.

Objective Structured Practical Examination (OSPE)

- The content may assess application of knowledge, or practical skills.
- Student will complete task in define time at one given station.
- All the students are assessed on the same content by the same examiner in the same allocated time.
- A structured examination will have observed, unobserved, interactive and rest stations.
- Observed and interactive stations will be assessed by internal or external examiners.
- Unobserved will be static stations in which students will have to answer the questions related to the given pictures, models or specimens the provided response sheet.
- Rest station is a station where there is no task given, and in this time student can organize their thoughts.
- The Block OSPE will be comprise of 20 examined station and 5 rest stations. The stations will be assigned according to the shred blueprint. There will be 8 stations for viva of core subjects like Pathology, Pharmacology, Forensic Medicine and Community Medicine (2 station for viva of each core subject) and 2 clinical station and rest of 10 out of 20 stations will be assigned according to shared blue prints.

Internal Evaluation:

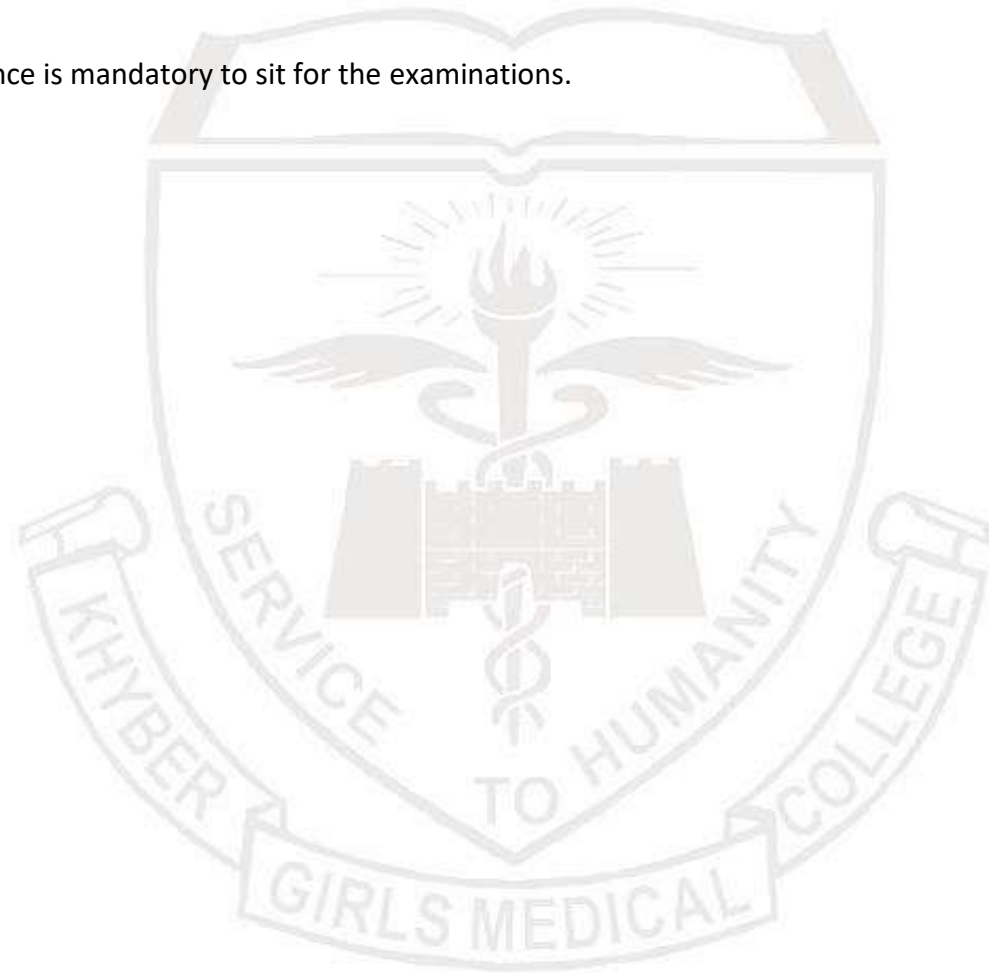
Internal evaluation is a process of quality review undertaken within an institution for its own ends. 10% marks of internal evaluation will be added to final marks. This 10% will be based on

PAPER	
Marks obtained	13 out of total 40 marks of internal assessment in block I Paper

OSPE	
Marks obtained	13 out of total 40 marks of internal assessment in block I Paper

Attendance Requirement:

More than 75% attendance is mandatory to sit for the examinations.



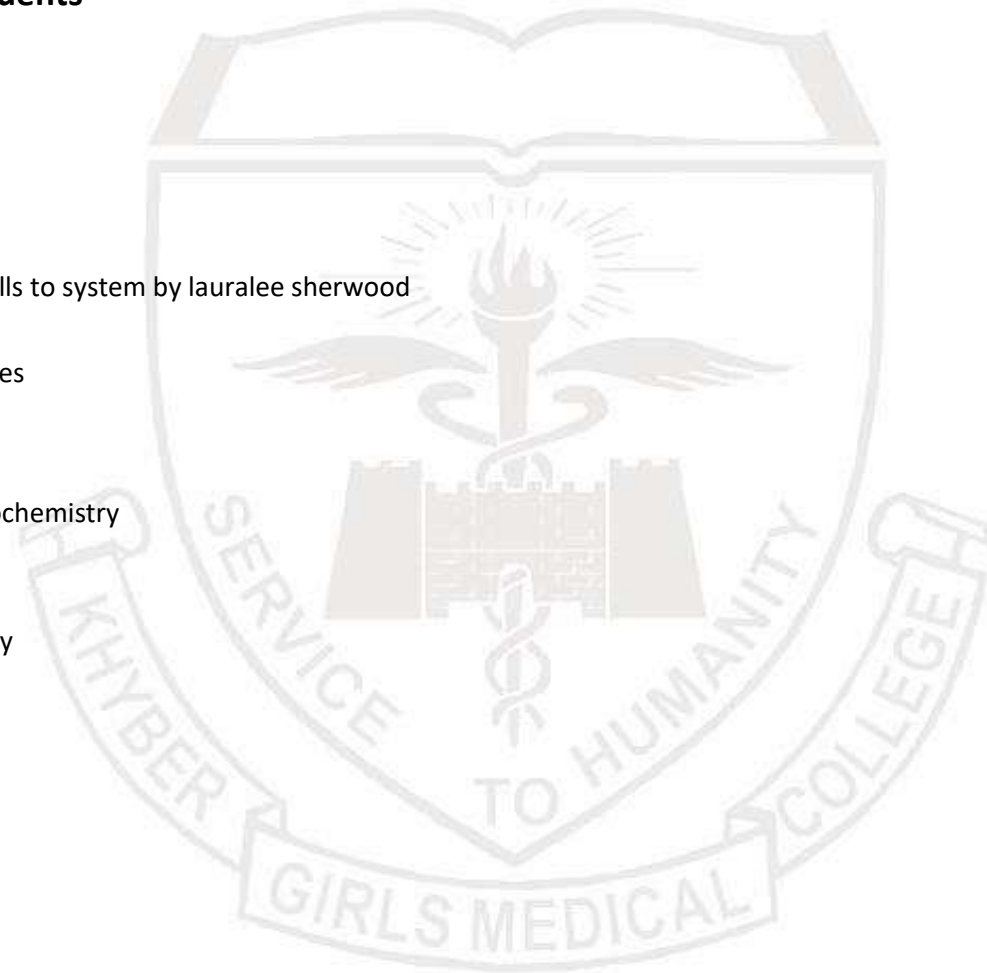
Learning Resources for Students

Physiology

- Guyton and Hall physiology
- Ganong physiology
- Human Physiology from cells to system by lauree sherwood
- BRS Physiology
- Neuroscience by Dale Purves

Biochemistry

- Chatterjee text book of Biochemistry
- Harpers Biochemistry
- Lippincotts Biochemistry
- Satya Narayan biochemistry



PATHOLOGY

- Robbins textbook of pathology
- Harsh mohan text book of pathology
- Levison text book of microbiology
- Paniker parasitology
- Chatterjee book of parasitology

PHARMACOLOGY

- Basic & Clinical Pharmacology, 14edition
- Katzung & Trevor's Pharmacology: Examination & Board Review, 10edition
- Lippincott Illustrated Reviews: Pharmacology, 8th edition
- Pharmacology for Medical Graduates by Tara V. Shanbhag

GENERAL MEDICINE

1. Kumar and Clark for Medicine 8th edition 2012
2. Davidson



FORENSIC MEDICINE

- Parikh's textbook of Medical Jurisprudence and Toxicology.
- Principles and Practice of Forensic Medicine by Nasir R Awan
- Forensic medicine and toxicology principals and practice by Krishan Vij
- Knights forensic pathology by Bernard knight, Pekka saukko
- Forensic medicine and toxicology Nagesh Kumar G rao

Apart from these resources learning, students can consult books available in library or recommended by the specialty experts.

