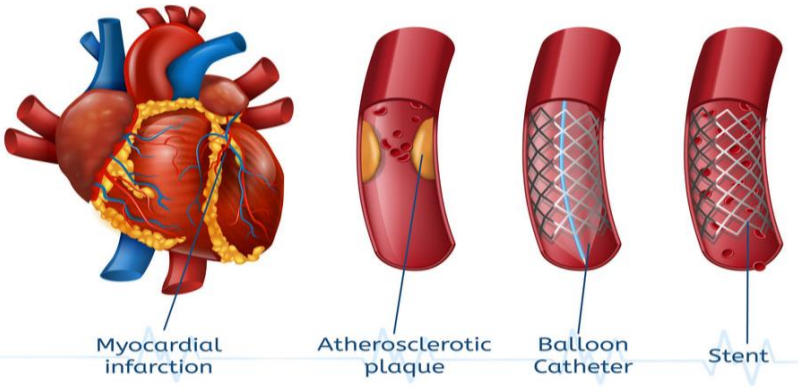
STUDY GUIDE

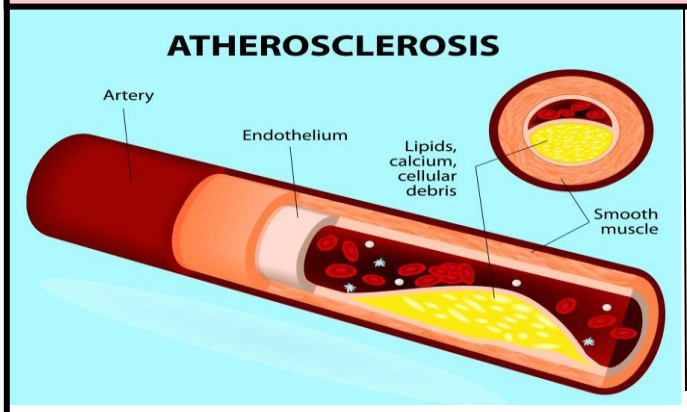
THIRD YEAR MBBS

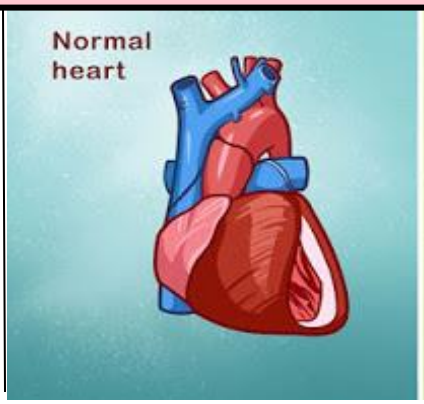
26th JULY – 21st AUGUST 2021

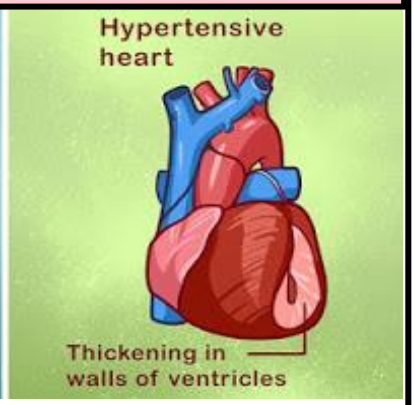
DURATION: 4 WEEKS



CARDIOVASCULAR MODULE II







LIAQUAT NATIONAL HOSPITAL AND MEDICAL COLLEGE
Institute for Postgraduate Medical Studies & Health Science

STUDY GUIDE FOR CARDIOVASCULAR SYSTEM II MODULE

Module name: **CVS II** *Year:* ***Three*** *Duration:* ***4 weeks (July- Aug 2021)***

Timetable hours: **Interactive Lectures, Case-Based Integrated Learning (CBIL), Clinical Rotations, learning experience in LNH outreach centers, Laboratory, Practical, Demonstrations, Skills, Self-Study**

MODULE INTEGRATED COMMITTEE

MODULE COORDINATOR:	Dr. Saima Zainab (**Community Medicine**)
CO-COORDINATORS:	• Dr. Atif Ali Hashmi (**Pathology**) • Dr M.Suleman Sadiq (**DHPE**)

DEPARTMENTS' & RESOURCE PERSONS' FACILITATING LEARNING

BASIC HEALTH SCIENCES	CLINICAL AND ANCILLARY DEPARTMENTS
ANATOMY Professor Zia-ul-Islam	***CARDIOLOGY*** • Dr. Faisal Ahmed • Dr. Imran Sandeelo
COMMUNITY MEDICINE Dr. Saima Zainab	***RESEARCH & SKILLS DEVELOPMENT CENTER*** Dr. Kahkashan Tahir
FORENSIC MEDICINE Professor Murad Zafar	
PATHOLOGY Professor Naveen Faridi	
PHARMACOLOGY Professor Nazir Ahmad Solangi	

DEPARTMENT of HEALTH PROFESSIONS EDUCATION

- Professor Nighat Huda
- Professor Sobia Ali
- Dr Afifa Tabassum
- Dr. Muhammad Suleman Sadiq
- Dr. Sana Shah

LNH&MC MANAGEMENT

- Professor Karimullah Makki, Principal LNH&MC
- Dr. Shaheena Akbani, Director A.A & R.T LNH&MC

STUDY GUIDE COMPILED BY: Department of Health Professions Education

INTRODUCTION

WHAT IS A STUDY GUIDE?

It is an aid to:

- Inform students how student learning program of the module has been organized
- Help students organize and manage their studies throughout the module
- Guide students on assessment methods, rules and regulations

THE STUDY GUIDE:

- Communicates information on organization and management of the module. This will help the student to contact the right person in case of any difficulty.
- Defines the objectives which are expected to be achieved at the end of the module.
- Identifies the learning strategies such as Interactive Lectures, small group teachings, clinical skills, demonstration, tutorial and case based learning that will be implemented to achieve the module objectives.
- Provides a list of learning resources such as books, computer assisted learning programs, web- links, journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous and module examinations on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's achievement of objectives.
- Focuses on information pertaining to examination policy, rules and regulations.

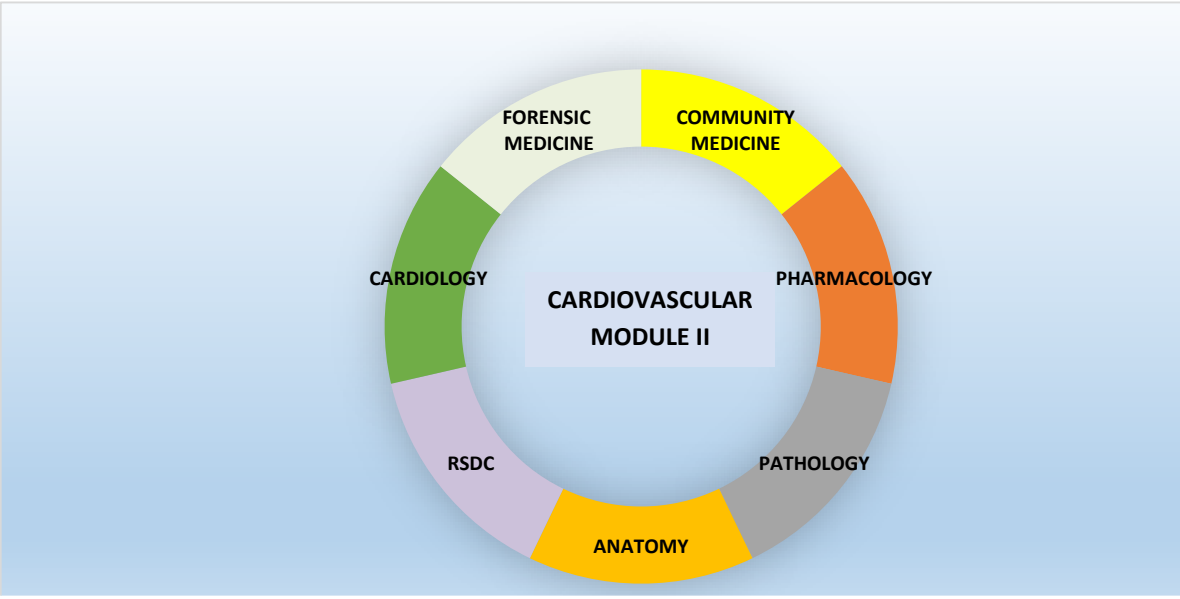
CURRICULUM FRAMEWORK

Students will experience integrated curriculum similar to previous modules**.**

INTEGRATED CURRICULUM comprises of system-based modules such as Foundation II, Blood II, Locomotor II, Respiratory system-II, CVS-II and GIT Liver II which links basic science knowledge to clinical problems. 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.

LEARNING EXPERIENCES: Case based integrated discussions, skills acquisition in skills lab. Computer-based assignments, learning experiences in clinics, wards and outreach centers

INTEGRATING DISCIPLINES OF CARDIOVASCULAR SYSTEM II



LEARNING METHODOLOGIES

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

- Interactive Lectures
- Small Group Discussion
- Case- Based Integrated Learning (CBIL)
- Clinical Experiences
  - Clinical Rotations
  - Experience in LNH outreach centers
- Practicals
- Skills session
- Self-Directed Study

INTERACTIVE LECTURES: In large group, the Interactive Lectures introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients' interviews, exercises, etc. Students are actively involved in the learning process.

SMALL GROUP SESSION: This format helps students to clarify concepts, acquire skills or desired attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from Interactive Lectures, tutorials and self study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE- BASED INTEGRATED LEARNING (CBIL): A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained previously in clinical and basic health sciences during the module and construct new knowledge. The CBIL will be provided by the concern department.

CLINICAL LEARNING EXPERIENCES: In small groups, students observe patients with signs and symptoms in hospital wards, clinics and outreach centers. This helps students to relate knowledge of basic and clinical sciences of the module and prepare for future practice.

- **CLINICAL ROTATIONS:** In small groups, students rotate in different wards like Medicine, Pediatrics, Surgery, Obs & Gyne, ENT, Eye, Family Medicine clinics, outreach centers & Community Medicine experiences. Here students observe patients, take histories and perform supervised clinical examinations in outpatient and inpatient settings. They also get an opportunity to observe medical personnel working as a team. These rotations help students relate basic medical and clinical knowledge in diverse clinical areas.
- **EXPERIENCE IN LNH OUTREACH CENTERS:** Learning at outreach centers of LNH have been organized and incorporated as part of training of third year medicinal students. The objective of these visits is to provide clinical training experiences for students in primary care settings.

PRACTICAL: Basic science practicals related to pharmacology, microbiology, pathology, forensic medicine, and community medicine have been schedule for student learning.

SKILLS SESSION: Skills relevant to respective module are observed and practiced where applicable in skills laboratory.

SELF-DIRECTED STUDY: Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

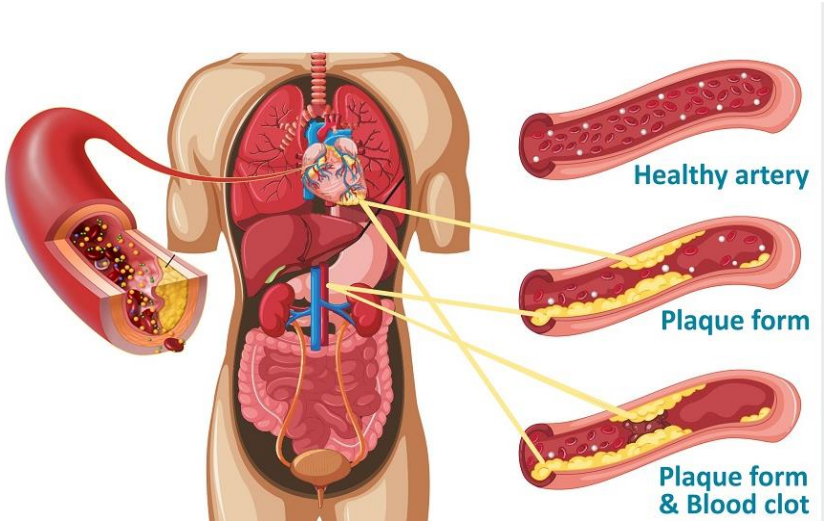
MODULE 5: CVS II

INTRODUCTION

Cardiovascular module (I) in year 1 covered basic medical sciences concepts for understanding the causes and treatment of diseases.

CVS (II) will now focus on common clinical presentations along with treatment options, relevant investigations and prevention. Students will have opportunities to relate their knowledge on the diseases such as congenital heart diseases, hyperlipidemia, hypertension, diseases of vessel wall, ischemic heart diseases, valvular heart diseases, arrhythmias, cardiac failure and infections. Sessions on preventive medicine and healthy life style will have significant importance. Students will be engaged in CVS history taking and physical examination both in adults and children to enhance the clinical examination skills of the students. The module will enable students to relate their theoretical learning through case-based learning, interactive Lectures, patient, simulated-based experiences and video-based learning.

Forensic Medicine will run parallel with the module.



http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/LearnHowHBPHarmsYourHealth/Health-Threats-From-High-Blood-Pressure_UCM_002051_Article.jsp#.WmwFXZKGPIU

COURSE OBJECTIVES AND STRATEGIES

At the end of the module the students will be able to:

ANATOMY

OBJECTIVES	*TEACHING STRATEGY*
Functional Anatomy of CVS	Interactive Lectures
• Discuss coronary circulation and its clinical importance	
• Discuss the conducting system of heart and its blood supply	

CARDIOLOGY

OBJECTIVES	*TEACHING STRATEGY*
1. Hypertensive Vascular Disease and Hypertensive heart disease	Interactive Lectures
• Discuss vascular wall injury response	
• Discuss the causes, pathogenesis and morphology of hypertensive vascular injury	
• Explain types of hypertensive heart disease	
2. History, Examination, Lab Investigation and Epidemiology Related To CVS	Small Group Discussion
• Demonstrate all the steps History Taking of Patient with Chest Pain and CVS examination	
3. Heart Failure	Interactive Lectures
• Define cardiac failure	
• Discuss the etiology, pathogenesis, morphology and clinical features of left sided and right sided heart failure	
4. Arrhythmias	
• Define Arrhythmias	
• Classify Arrhythmias	
• Discuss the clinical features of Arrhythmias	
• List the causes of Arrhythmias	
• List the investigations related Arrhythmias	
5. Valvular Heart Diseases	
• Define Valvular heart diseases	
• Classify Valvular heart diseases	
• Discuss the clinical features of Valvular heart diseases	
• List the causes of Valvular heart diseases	
• List the investigations related Valvular heart diseases	
6. ECG Interpretation	Small Group Discussion
• Interpret 12-lead electrocardiogram to determine the rate, rhythm, axis, intervals, and acute ischemic changes	
• Discuss the ECG changes of angina and myocardial Infarction	
7. Rheumatic Heart Disease	Interactive Lectures
• Describe the signs and Symptoms & diagnostic criteria of Rheumatic Heart Disease	
• Explain the process of control and prevention of Rheumatic heart disease	

8. Disorders of Blood Vessel Hyperreactivity, Veins and Lymphatics	Interactive Lectures
• Discuss various disorders of blood vessel hyperreactivity, veins and lymphatics including:	
i. Raynaud Phenomenon	
ii. Myocardial Vessel Vasospasm	
iii. Veins and Lymphatics	
iv. Varicose Veins	
v. Thrombophlebitis and	
vi. Phlebothrombosis	
vii. Superior and Inferior Vena Cava Syndromes	
viii. Lymphangitis and Lymphedema	

COMMUNITY MEDICINE

OBJECTIVES	*TEACHING STRATEGY*
1. Coronary heart diseases and its prevention	Interactive Lectures
• Describe coronary heart diseases	
• Discuss the epidemiology of coronary artery diseases	
• Describe the prevention and control of coronary artery diseases	
2. Hypertension	Small Group Discussion
• Classify Hypertension	
• Describe epidemiology of hypertension	
• Discuss prevention and control	
3. Life style modifications according to CVS diseases	Interactive Lecture
• Discuss preventive measures and life style modifications based on evidence	

FORENSIC MEDICINE

OBJECTIVES	*TEACHING STRATEGY*
1. Forensic sexology I:Virginity & Pregnancy and their medico legal perspectives	Interactive Lectures
• Describe signs of virginity on medico legal examination	
• List the differences between true and false virgin on examination	
• Define defloration along with causes of rupture of hymen	
• State the method of estimation of duration of a torn hymen	
• Calculate EDD (Expected date of delivery)	
• List the signs of pregnancy (presumptive, probable and definite signs)	
• Describe the diagnosis of pregnancy in medico legal cases	
• List the motives of feigned pregnancy	
• List the abnormal forms of pregnancy	
• Define Legitimacy and legitimate child as per law	
2. Forensic sexology II: Delivery and its medico legal aspects	
• Describe signs of recent delivery in living and in dead	
• Describe the signs of remote delivery in living and in dead	
• State the medico legal aspects of delivery	

3. Forensic sexology III: Impotence, Sterility and Artificial insemination	Interactive Lectures
• Define consummation of marriage	
• List the causes of nullity of marriage and divorce from legal aspects	
• Describe Impotency and sterility with legal dictums	
• List the causes of impotency and sterility	
• Explain the steps of examination of a case of impotency and how to give opinion in such a case	
• Discuss artificial insemination, its types , procedure, precautions in selecting a donor and legal implications, Surrogate birth	
4. Forensic sexology IV: Abortion & its Medico legal aspects	
• Define the types of abortion	
• List the grounds for abortion with special emphasis on pregnancy after rape	
• Define criminal abortion, its type according to Pakistan Penal Code and unskilled, semi-skilled and skilled methods of criminal abortion	
• List the complications of Criminal abortion	
• List the causes of death in criminal abortion and autopsy findings	
5. Forensic sexology V: Natural Sexual offences (Rape & Incest)	
• Classify sexual offences	
• State the legal definition of Rape	
• Explain the procedure of examination of a victim of rape, collection of specimens during examination	
• Explain the procedure of examination of an accused person	
• Describe rape in children	
• List the complications following rape with special stress of Post-traumatic Stress Disorder	
• List the problems in medico legal examination of victim of rape in present scenario	
• Define Incest and its legal aspects	
6. Forensic sexology VI: Unnatural sexual offence	
• Describe legal definition of sodomy and its types	
• Discuss the steps of examination of a victim of Sodomy, a habitual passive agent (Catamite), habitual active agent (Sodomite)	
• Describe the method of collection of samples from passive and active agent	
• Describe the following:	
i) Bestiality and the method of examination in such cases	
ii) Tribadism or female homosexuality and its legal aspects	
iii) Buccal coitus	
7. Forensic sexology VII: Sexual Perversions	Small Group Discussion
• Define a sexual pervert	
• List the various types of sexual perversions with special emphasis on Sadism, lust murder, necrophilia, necrophagia, Masochism, Transvestism and Transsexualism and other sexual perversions with their medico legal aspects	

8. Medicolegal aspects of Domestic & Family Violence	
• Explain principles of protection of women from domestic violence with particular reference to the domestic violence act 2005	
• Discuss the concept Battered husband/ battered wife in term of domestic violence	
9. Asprin and Paracetamol poisoning	Interactive Lectures
• Describe the mode of action, sign and symptoms, fatal dose , fatal period , treatment and medico legal importance of asprin & paracetamol poisoning	
10. Toxicology- Cardiac poisons	Small Group Discussion
• Describe the mode of action, signs and symptoms, treatment, postmortem findings and medico-legal importance of the Cardiac poisons; Digitalis, Aconite, and Nicotine.	
11. Forensic Sexology: Medico legal Report of case of sexual assault	
• Describe the procedure of taking swabs in case of victims of rape and sodomy	
• Write the medico legal report of rape and sodomy cases.	
12. Forensic Lab Techniques	
• Describe the technique and medico legal importance Polygraph and Brain Finger Printing	
• Discuss the importance of questioned documents in Forensic investigation	
• Describe the Forensic Lab	
13. Cannabis & Cocaine Poisoning	
• Describe the mode of action, signs and symptoms, treatment, postmortem findings and medico-legal importance of Cannabis & Cocaine	

PATHOLOGY

OBJECTIVES	*TEACHING STRATEGY*
1. Atherosclerosis	Interactive Lectures/ Small Group Discussion
• Define Arteriosclerosis & Atherosclerosis	
• Describe the epidemiology and risk factors of Atherosclerosis	
• Discuss in detail the pathogenesis, morphology and clinical consequences of Atherosclerotic disease	
2. Aneurysms and Dissection	Interactive Lectures
• Define aneurysm and dissection of vessel wall	
• Explain the pathogenesis, morphology & clinical features of aneurysms	
• Discuss Aortic dissection with relation to pathogenesis, morphology & clinical features	
3. Congenital Heart Disease	Case based learning
• Classify congenital heart diseases	
• Explain the pathophysiology, morphology and clinical features of left to right, right to left diseases	
• Briefly discuss congenital obstructive lesions	

4. Valvular Heart Disease & Noninfected Vegetations	Interactive Lectures/Small Group Discussion
• Classify valvular defects of mitral and aortic valves valvular heart disease.	
• Discuss the etiology, pathogenesis, morphology and clinical features of infective endocarditis, rheumatic fever and rheumatic heart disease	
• Discuss non infected vegetation of heart	
5. Ischemic Heart Disease 1	
• Define ischemic heart disease & myocardial infarction (MI)	
• Discuss the significance of time in diagnosing and treating acute MI	
• Describe the morphological features of MI	
• Discuss the clinical features of an acute attack of MI	
• Discuss the Laboratory evaluation of the disease	
• Discuss the consequences, complications and prognosis of MI	
6. Ischemic Heart Disease 2	Interactive Lectures
• Define Coronary Artery Disease (CAD)	
• Discuss its consequences and various clinical presentations.	
• Explain its epidemiology and risk factors	
• Describe Angina and its types	
• Discuss the coronary blood supply and types of infarction	
• Briefly discuss the features of chronic IHD and sudden cardiac death	
7. Heart Failure	
• Define cardiac failure	
• Discuss the etiology, pathogenesis, morphology and clinical features of left sided and right sided heart failure	
8. Cardiomyopathies & Myocarditis	Interactive Lectures
• Define cardiomyopathy	
• Discuss types of cardiomyopathies	
• List the conditions associated with cardiomyopathy	
• Explain the morphology and clinical features cardiomyopathy	
• List the causes of myocarditis	
• Discuss the morphology of myocarditis	
9. Pericardial Diseases & Tumors of Heart	
• Define pericardial effusion & Hemopericardium	
• Discuss causes, pathogenesis & morphology of different types of pericarditis	
• Classify tumors of heart	
• Discuss the pathogenesis and morphology of primary tumors of heart	
• Discuss the clinical effects of non-cardiac neoplasms	
10. Vasculitis	
• Define Vasculitis and list types of vasculitis.	
• Discuss the etiology, pathogenesis, morphology and clinical features of various types of Vasculitis	

11. Vascular Tumors	Interactive Lectures/ Small Group Discussion
• Classify vascular tumors	
• Discuss benign, borderline and malignant vascular tumors with respect to etiology, pathogenesis and morphology	
• Discuss vascular tumors with special emphasis on morphological aspects	
12. Myocardial Infarction	Small Group Discussion
• Discuss the morphological features of MI	
• Elaborate the clinical features of an acute attack of MI	
• Discuss the Laboratory evaluation of the disease	

PHARMACOLOGY

OBJECTIVES	*TEACHING STRATEGY*
1. Drug therapy of ACS	Small Group Discussion
• Discuss classification plus basic & clinical pharmacology of different drug groups used in ACS	
• Discuss management of ACS	
2. Drugs used in the treatment of Angina pectoris & Myocardial Infarction	Interactive Lectures
• Discuss classification	
• Discuss management of Angina & MI	
• Explain basic & clinical pharmacology of Anti-Anginal drugs	
• Discuss treatment of IHD including its basic & clinical pharmacology	
3. Anti-hypertensive Drugs I & II	
• Discuss drugs of different classes used to treat HTN	
• Explain their basic & clinical pharmacology	
• Discuss management of Hypertension	
4. Drug therapy of CCF	
• Discuss classification of drug used in cardiac failure	
• Explain their basic and clinical pharmacology	
• Discuss management of CCF	
• Discuss basic & clinical pharmacology of different drug groups used in CCF	
5. Drug treatment of cardiac arrhythmias I & II	Small Group Discussion
• Discuss classification and basic & clinical pharmacology of anti-arrhythmic drugs	
• Discuss management of cardiac arrhythmias	
6. Anti-hyperlipidemic drugs	Case based learning
• Classify Anti-hyperlipidemic drugs	
• Discuss their basic and clinical pharmacology	
• Discuss management of hyperlipidemia	
• Discuss basic & clinical pharmacology of different drug groups	

RESEARCH & SKILLS DEVELOPMENT CENTER

OBJECTIVES	*TEACHING STRATEGY*
• Discuss the ECG changes of Arrythmias	Small Group Discussion

Apart from attending daily scheduled sessions, students should engage in self-study to ensure that all the objectives are covered

LEARNING RESOURCES

SUBJECT	*RESOURCES*
ANATOMY	**TEXT BOOKS** 1. K.L. Moore, Clinically Oriented Anatomy
COMMUNITY MEDICINE	**TEXT BOOKS** 1. Preventive and Social Medicine by K Park 2. Community Medicine by M Illyas 3. Basic *Statistics* for the Health Sciences by Jan W Kuzma
FORENSIC MEDICINE	**TEXT BOOKS** 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. **REFERENCE BOOKS** 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 **CDs:** 1. Interactive Lectures s on Forensic Medicine. 2. Atlas of Forensic Medicine. **WEBSITES:** www.forensicmedicine.co.uk
PATHOLOGY	**TEXT BOOKS** 1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD **WEBSITES:** 1. http://library.med.utah.edu/WebPath/webpath.html 2. http://www.pathologyatlas.ro/
PHARMACOLOGY	**TEXT BOOKS** 1. Lippincot Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung

ASSESSMENT METHODS:

- **Best Choice Questions(BCQs)** also known as MCQs (Multiple Choice Questions)
- **Objective Structured Practical/Clinical Examination (OSPE or OSCE)**

BCQs:

- A BCQ has a statement or clinical scenario of four options (likely answers).
- **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 LNHMC.

OSCE:

- All students rotate through the same series of stations in the same allocated time.
- At each station, a brief written statement includes the task. Student completes the given task at one given station in a specified time.
- Stations are observed, unobserved, interactive or rest stations.
- In unobserved stations, flowcharts, models, slide identification, lab reports, case scenarios may be used to cover knowledge component of the content.
- Observed station: Performance of skills /procedures is observed by assessor
- Interactive: Examiner/s ask questions related to the task within the time allocated.
- In Rest station, students in the given time not given any specific task but wait to move to the following station.

Internal Evaluation

- Students will be assessed comprehensively through multiple methods.
- 20% marks of internal evaluation will be added to JSMU final exam. That 20% may include class tests, assignment, practicals and the internal exam which will all have specific marks allocation.

Formative Assessment

Individual department may hold quiz or short answer questions to help students assess their own learning. The marks obtained are not included in the internal evaluation

For JSMU Examination Policy, please consult JSMU website!

	More than 75% attendance is needed to sit for the internal and final examinations	

LNH&MC EXAMINATION RULES & REGULATIONS

- Student must report to examination hall/venue, 30 minutes before the exam.
- **Exam will begin sharp at the given time.**
- No student will be allowed to enter the examination hall after 15 minutes of scheduled examination time.
- Students must sit according to their roll numbers mentioned on the seats.
- **Cell phones are strictly not allowed in examination hall.**
- If any student is found with cell phone in any mode (silent, switched off or on) he/she will be not be allowed to continue their exam.
- No students will be allowed to sit in exam without University Admit Card, LNMC College ID Card and Lab Coat.
- Student must bring the following stationary items for the exam: Pen, Pencil, Eraser, and Sharpener.
- Indiscipline in the exam hall/venue is not acceptable. Students must not possess any written material or communicate with their fellow students.

SCHEDULE:

WEEKS	3RD YEAR	MONTH
WEEK 1-4	CVS II MODULE	26th July 2021
		21st August 2021
WEEK 1-6	GIT II MODULE	23rd August 2021*
		2nd October 2021*
PRE PROF. EXAMINATION*		

*Final dates will be announced later