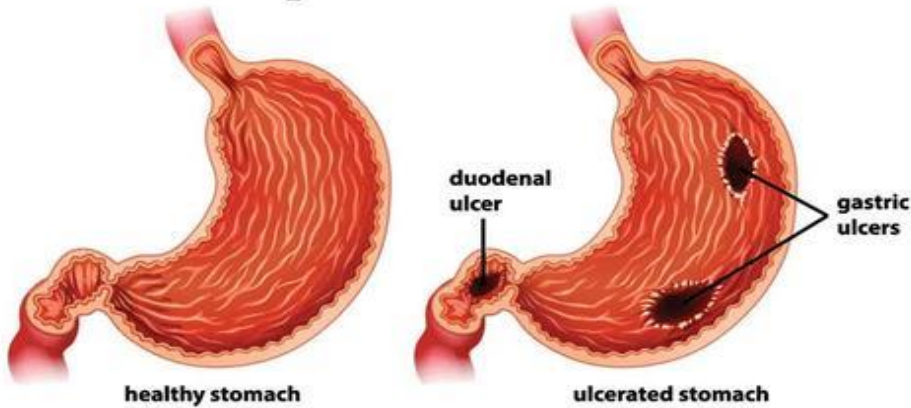


Peptic Ulcers



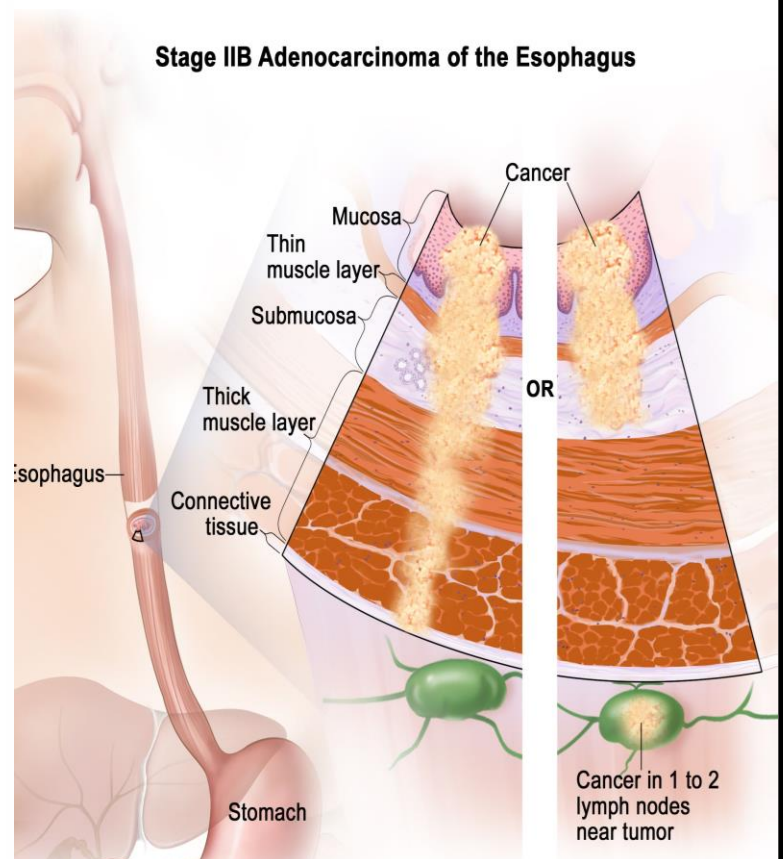
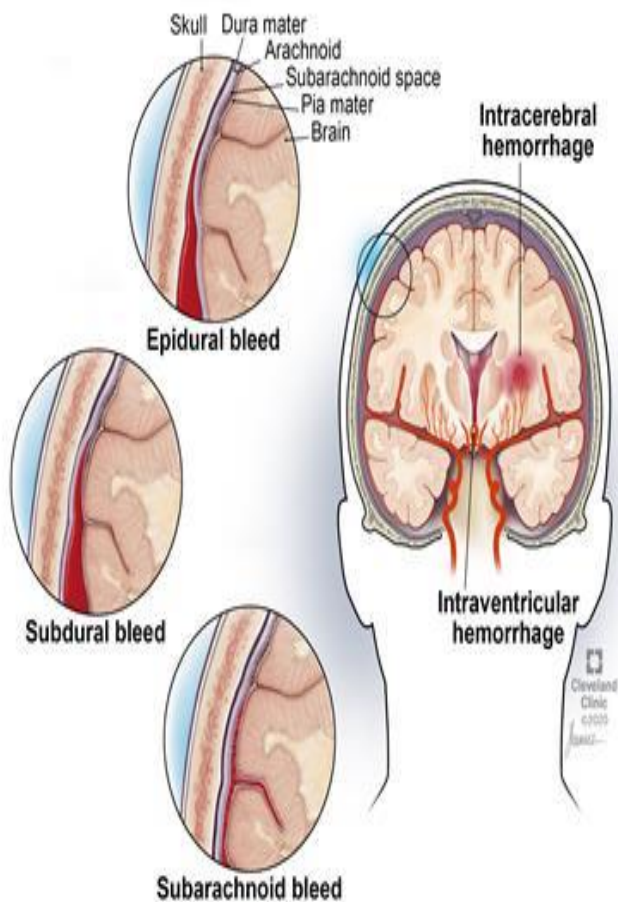
STUDY GUIDE

THIRD YEAR MBBS

23rd AUG – 9th OCT 2021

DURATION: 7 WEEKS

GIT & HEPATOBILIARY MODULE II



LIAQUAT NATIONAL HOSPITAL AND MEDICAL COLLEGE

Institute for Postgraduate Medical Studies & Health Science



STUDY GUIDE FOR GIT & HEPATOBILIARY MODULE

S.No	CONTENTS	Page No.
1	Overview	3
2	Introduction to Study Guide	4
3	Learning Methodologies	5
4	Module 6: GIT &Hepatobiliary	7
4.1	Introduction	7
4.2	Objectives and Learning Strategies	8
5	Learning Resources	22
6	Assessment Methods	23
7	LNMC Examination Rules and Regulations	24
8	Schedule	25

Module name: **GIT & Hepatobiliary** Year: **Three** Duration: **7 weeks (August- Oct 2021)**

Timetable hours: **Lectures, Case-Based Integrated Learning (CBIL), Clinical Rotations, Laboratory, Practical, Demonstrations, Skills, Self-Study**

MODULE INTEGRATED COMMITTEE

MODULE COORDINATOR:	<ul style="list-style-type: none"> • Prof. Tabassum Zehra (Pharmacology)
CO-COORDINATORS:	<ul style="list-style-type: none"> • Dr. Saira Mansoor (Community Medicine) • Dr. Afifa Tabassum (DHPE)

DEPARTMENTS & RESOURCE PERSONS FACILITATING LEARNING

BASIC HEALTH SCIENCES	CLINICAL AND ANCILLARY DEPARTMENTS
ANATOMY Professor Zia-ul-Islam	GASTROENTEROLOGY <ul style="list-style-type: none"> • Professor M. Mansoor-ul-Haq • Dr. Shahid Karim
COMMUNITY MEDICINE Dr. Saima Zainab	GENERAL SURGERY Professor Rufina Soomro
FORENSIC MEDICINE Professor Murad Zafar Marri	MEDICINE Professor KU Makki
MICROBIOLOGY Professor Shaheen Sharafat	
PATHOLOGY Professor Naveen Faridi	
PHARMACOLOGY Professor Nazir Ahmad Solangi	
DEPARTMENT of HEALTH PROFESSIONS EDUCATION	
<ul style="list-style-type: none"> • Professor Nighat Huda • Professor Sobia Ali • Dr Afifa Tabassum • Dr Muhammad Suleman Sadiq • Dr. Sana Shah 	
LNH&MC MANAGEMENT	
<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Faiza Ambreen

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 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.

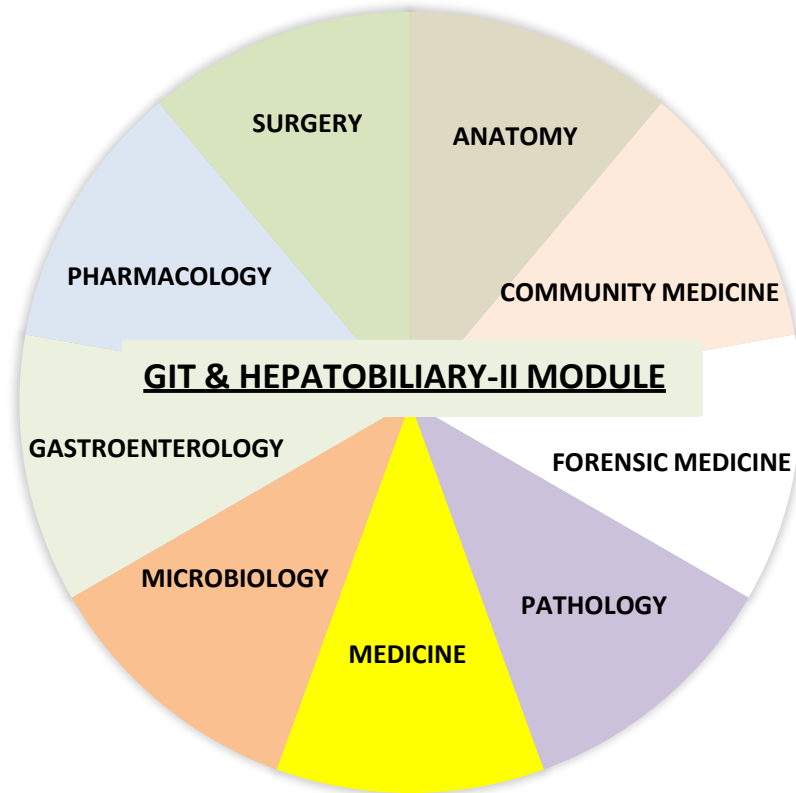
CURRICULUM FRAMEWORK

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 -II, CVS-II and GIT & Hepatobiliary 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 GIT & HEPATOBILIARY-II MODULE



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
- Skills session
- Practicals
- Self-Directed Study

INTERACTIVE LECTURES: In large group, the lecturer 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 concerned 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.

PRACTICAL: Basic science practicals related to pharmacology, microbiology, 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 6: GIT & HEPATOBILIARY

INTRODUCTION

Gastrointestinal and liver diseases impose a substantial burden on health, and are responsible for approximately 8 million deaths per year worldwide. Diarrheal disease is the eight leading cause of death globally and is responsible for 1.4 million deaths in 2015. Pakistan is one of the countries in MENA (Middle East and North Africa) region with the highest overall burden of Gastrointestinal and Liver Diseases including esophageal cancers, diarrheal diseases, hepatitis and cirrhosis.

This module aims to equip medical undergraduates with the essential knowledge and skills required for dealing with prevalent GI disorders in the local context. This is the second module on Gastrointestinal tract in MBBS course. The basics of GI tract including anatomy, physiology, biochemistry, pathology and introduction to clinical presentations have been addressed in the first module. This module will provide an integrative understanding of molecular processes and physiological pathways underpinning healthy and disease states in the gastrointestinal tract and hepatobiliary system. It will focus on common infections of the gastrointestinal tract, molecular factors influencing the host –pathogen interaction, the mode-of-action of common gastrointestinal therapeutics, environmental interactions, including metabolic, genetic and nutritional disorders and cancerous and non-cancerous gastrointestinal diseases.

Reference:

1. Top ten causes of death. WHO. Available from: <http://www.who.int/mediacentre/factsheets/fs310/en/>
2. Sepanlou, S. G., Malekzadeh, F., Delavari, F., Naghavi, M., Forouzanfar, M. H., Moradi-Lakeh, M., ... Pourshams, A. (2015). Burden of Gastrointestinal and Liver Diseases in Middle East and North Africa: Results of Global Burden of Diseases Study from 1990 to 2010. *Middle East Journal of Digestive Diseases*, 7(4), 201–215.

COURSE OBJECTIVES AND STRATEGIES

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

ANATOMY

OBJECTIVES	TEACHING STRATEGY
1. Overview of structures in the GIT system	Interactive Lectures
• Describe the structure of digestive system	
2. Congenital abnormalities of GIT	
• Describe the congenital abnormalities of GIT including Atresia, fistulae, duplications, Diaphragmatic Hernia, Omphalocele, Gastroschisis. Ectopia, Meckel diverticulum, Congenital hypertrophic pyloric stenosis, Hirschsprung disease	

COMMUNITY MEDICINE

OBJECTIVES	TEACHING STRATEGY
1. Introduction to Nutrients and their classification	Tutorials
• Summarize the nutrient concept	
• Classify nutrients	
• Describe effects of nutrient deficiency on health	
• Explain process of control and prevention of nutrient deficiency	
2. Micro & Macro-nutrients and their deficiency diseases	
• Classify micro and macronutrients	
• Describe the role of micronutrients in metabolism	
• List the diseases caused by micronutrient deficiencies	
• Explain the process of prevention of micronutrient deficiencies	
3. Balanced diet, energy value and bioavailability of nutrients	
• Define balanced diet	
• Explain energy value and bioavailability of nutrients	
• Describe the composition of macronutrients in balanced diet	
• Calculate energy value from macronutrients	
4. Assessment of nutritional status- Growth Chart	
• Describe the importance of Growth Chart	
• List the tools for assessing nutritional status	
• Interpret Growth Charts	
• Describe their uses	
5. Malnutrition and prevention	
• Define malnutrition	
• Classify malnutrition	
• Explain the process of assessment of malnutrition	
• Discuss the process of control and prevention of malnutrition	

6. Hepatitis A & E (transmittable through ingestion)	Interactive Lectures
<ul style="list-style-type: none"> Classify Hepatitis Describe the signs and symptoms of Hepatitis A and E Describe the agent, host and environment of Hepatitis A and E Explain the process of control and prevention of Hepatitis A and E 	
7. Hepatitis B & C (transmittable through Parental route)	
<ul style="list-style-type: none"> Describe signs and symptoms of Hepatitis B and C Describe the agent, host and environment of Hepatitis B and C Explain the process of control and prevention of Hepatitis B and C Discuss the Hepatitis control programme in Pakistan 	
8. Enteric Fever	
<ul style="list-style-type: none"> List the signs and symptoms of enteric fever Describe the assessment and diagnosis, and the process of control and prevention of enteric fever Discuss the role of immunization in prevention of enteric fever 	
9. Medical Entomology	
<ul style="list-style-type: none"> Define Entomology Describe the disease caused by entomology Classify Entomology 	
10. Substance Abuse and Alcoholism	
<ul style="list-style-type: none"> Identify the risks and effects of substance abuse and alcohol Discuss control measures of substance abuse and alcoholism Discuss situation analysis in Pakistan regarding substance abuse and alcoholism 	
11. Medical Parasitology	
<ul style="list-style-type: none"> Classify parasites Describe the medical importance of parasites in disease spread Discuss the process of control and prevention of Parasites 	

FORENSIC MEDICINE

OBJECTIVES	TEACHING STRATEGY
1. Regional Injuries-I (Scalp, Head injuries & Fractures of Skull)	Interactive Lectures
<ul style="list-style-type: none"> Describe Injuries of the scalp including forensic aspects of anatomy of the scalp and their medico legal aspects Enumerate the types of fractures of the skull and their forensic aspects Explain the mechanism of production of fractures of the skull and their medico legal significance 	
2. Regional Injuries-II (Intracranial hemorrhages)	
<ul style="list-style-type: none"> Describe the types of intracranial haemorrhages along with forensic anatomy of blood vessels commonly involved List the signs and symptoms of different types of intracranial haemorrhages and methods to diagnose them Explain the medico legal aspects of intracranial hemorrhages 	

3. Regional Injuries-III (Brain & Spinal Injuries)
<ul style="list-style-type: none"> Enumerate the different types of injuries to the brain and spine Explain the mechanisms of brain injuries such as Concussion/Contusion/ Irritation, Coup and contre coup injuries Describe the mechanism and sign and symptoms of brain injuries to boxers Discuss Spinal injuries with special emphasis on Railway spine Describe the medico legal aspects of brain and spinal injuries
4. Regional Injuries-IV (Injuries of Face, Neck, Chest, Abdomen, Pelvis)
<ul style="list-style-type: none"> Describe the common injuries of medico legal significance to the face and neck including <ol style="list-style-type: none"> Different cervical fractures Whiplash injuries Homicidal and suicidal cut throat Chest injuries including traumatic asphyxia, injuries to ribs, lungs, heart with special emphasis on penetrating injuries and Commotio Cordis. Describe the abdominal injuries with medico legal aspects of rupture of liver, spleen, injuries to abdominal aorta and intestines Discuss Pelvic injuries of medico legal significance
5. Laws in relation to medical man – I
<ul style="list-style-type: none"> Describe Medical ethics, its background (Hippocratic Oath) and its significance Explain the principles of Bioethics List the duties of doctor as advised by international code of medical ethics Discuss the regulatory council {Pakistan Medical Commission (PMC)}, its composition, functions and role of PMC in Medical and Dental education
6. Laws in relation to medical man – II
<ul style="list-style-type: none"> List privileges & obligations of registered medical practitioner Describe Professional misconduct (Infamous conduct) Explain the types of Consent and its role in relation to medical examination List the criteria for giving valid consent Describe doctrine of informed consent (Rule of full disclosure) Discuss the deviations/exemptions of consent
7. Laws in relation to medical man-III
<ul style="list-style-type: none"> Describe Professional negligence List the types of negligence Explain the following terms with examples: <ol style="list-style-type: none"> Res- Ipsa- Loquotar Novus Actus Interveniens Vicarious Liability
8. Laws in relation to medical man – IV
<ul style="list-style-type: none"> Summarize 5 D'S for plaintiff's success Briefly discuss the following: <ol style="list-style-type: none"> Compensation For Medical Negligence Defenses for defendant doctor Defenses for reducing damages List the salient features of Transplantation of Human Organs & Tissues Act 2010 Explain Euthanasia, its types and ethical issues related to it

Interactive Lectures

9. Special trauma-Road Traffic Accidents	Interactive Lectures
<ul style="list-style-type: none"> • Explain the various causes of road traffic accidents, 	
<ul style="list-style-type: none"> • Briefly discuss the fitness certificate for driving license 	
<ul style="list-style-type: none"> • Describe the various types of injuries to pedestrians, driver and passengers, 	
<ul style="list-style-type: none"> • Discuss the use of air bags and seat belt syndrome 	
<ul style="list-style-type: none"> • Explain the injuries to motor cyclists with special stress on tail gating, 	
<ul style="list-style-type: none"> • List the Complications of run over injuries with their medico legal significance 	
10. Special trauma (Blast Injuries)	
<ul style="list-style-type: none"> • Define common terms related to blast injuries 	
<ul style="list-style-type: none"> • Classify explosives 	
<ul style="list-style-type: none"> • Discuss the physics of bomb blast 	
<ul style="list-style-type: none"> • Describe the various types of blast injuries 	
<ul style="list-style-type: none"> • Discuss the management of blast injuries 	
11. Causes of death due to trauma	
<ul style="list-style-type: none"> • Describe the immediate and delayed (remote) causes of death due to wounds 	
12. Forensic Psychiatry-I	
<ul style="list-style-type: none"> • State the salient features of Mental Health Ordinance 2001 	
<ul style="list-style-type: none"> • Define insane person as per law 	
<ul style="list-style-type: none"> • Differentiate between Legal and Medical Insanity 	
<ul style="list-style-type: none"> • Describe subjective disorders as delusions, hallucinations, illusion, obsession, impulse and their medico legal significance 	
13. Forensic Psychiatry-II	
<ul style="list-style-type: none"> • Define the various terms of medico legal significance such as affect, fugue, confabulation, I.Q, psychopath, twilight state 	
<ul style="list-style-type: none"> • Discuss legal tests of insanity i.e. McNaughton's Rule 	
<ul style="list-style-type: none"> • List motives of feigned insanity 	
<ul style="list-style-type: none"> • Differentiate between true and feigned insanity 	
<ul style="list-style-type: none"> • Explain the procedure of admission in a mental hospital 	
<ul style="list-style-type: none"> • Discuss the civil and criminal responsibilities of insane 	
14. Hepatic Poisons- Alcohol	
<ul style="list-style-type: none"> • Enumerate the sources of alcohol and various concentrations of alcohol which effect human behavior with medico legal importance 	
<ul style="list-style-type: none"> • Explain the absorption, metabolism and excretion of alcohol 	
<ul style="list-style-type: none"> • Describe the signs and symptoms of alcohol intoxication 	
<ul style="list-style-type: none"> • Discuss the procedure of examination of a drunkard by a Medico legal officer 	
<ul style="list-style-type: none"> • Describe the preservation of specimens and Lab tests for alcohol detection 	
<ul style="list-style-type: none"> • Briefly discuss chronic alcoholism, and withdrawal syndromes, and Antabuse therapy 	
<ul style="list-style-type: none"> • Enumerate the postmortem findings of alcoholism 	
<ul style="list-style-type: none"> • Discuss Methyl Alcohol intoxication, its complications and postmortem findings 	

15. Metallic Poisons-Arsenic and Lead	
<ul style="list-style-type: none"> Explain the sign and symptoms, diagnosis, treatment, postmortem findings and medico legal importance of acute and chronic poisoning by Arsenic and lead 	
16. Food poisoning	
<ul style="list-style-type: none"> Enumerate the types of food poisoning Differentiate between Toxin type and Infection type of food poisoning Explain the sign and symptoms, diagnosis, and postmortem findings of food poisoning Discuss role of forensic expert in cases of food poisoning 	
17. Opium & its derivative poisons	
<ul style="list-style-type: none"> Enumerate the derivatives of Opium Explain the sign and symptoms, diagnosis, treatment, postmortem findings and medico legal importance of Opium poisoning 	
18. Corrosives poisoning	
<ul style="list-style-type: none"> Discuss the sign and symptoms, treatment and medico legal significance of corrosive poisons; HCL, H₂SO₄, Nitric acid, Vitriolage 	
19. Organic Acids and Alkalies	
<ul style="list-style-type: none"> Discuss the sign and symptoms, treatment and medico legal significance of: <ol style="list-style-type: none"> Oxalic acid Carbolic acid Salicylic acid Hydrocyanic acid & cyanides, Alkalies; Caustic Soda and Caustic Potash 	
20. Non Metallic Poison- Phosphorus	
<ul style="list-style-type: none"> Discuss the sign and symptoms, treatment and medico legal significance of Phosphorus 	
21. Therapeutic poisons-II (Barbiturates, Diazepam and Tranquilizer) and common household poisons	
<ul style="list-style-type: none"> Describe the mode of action, signs and symptoms depending upon concentration in blood, treatment and postmortem findings of therapeutic poisons Barbiturates, Diazepam and Tranquilizer Enumerate common household poisons Discuss the sign and symptoms, treatment and medico legal significance of common household poisons 	Tutorials
22. Medico Legal report and Examination of person who consumed alcohol	
<ul style="list-style-type: none"> Explain the procedure of examination of a drunkard person Discuss the medicolegal report of person who consumed alcohol 	
23. Drug addiction and dependence	
<ul style="list-style-type: none"> Define drug addiction and dependence List the drugs that cause addiction and dependence Discuss their sign and symptoms, treatment and medico legal significance 	

GASTROENTEROLOGY

OBJECTIVES	TEACHING STRATEGY
• Discuss the clinical features, diagnosis and management esophageal obstruction	Interactive Lecture
• Discuss the clinical features and management of gastritis	
• Describe the clinical features and management of Hepatitis	
• Discuss the approach to patient with Hematemesis	Case- Based Integrated Learning
• Discuss the clinical findings, laboratory diagnosis, treatment Entamoeba histolytica and Giardia lamblia	
• Discuss the risk factors clinical presentation of malabsorbption	

MEDICINE

OBJECTIVES	TEACHING STRATEGY
• Describe the management and prevention of acute enterocolitis	Interactive Lecture

MICROBIOLOGY

OBJECTIVES	TEACHING STRATEGY
1. Infections of the upper Gastrointestinal tract	Interactive Lectures
• List the microorganisms which causes infections of oral cavity & upper GI tract	
• Discuss the important properties of Helicobacter pylori and Candida	
• Describe the pathogenesis, epidemiology clinical findings and laboratory diagnosis of H.pylori & Candida	
2. Infectious enterocolitis due to Escherichia coli and Mycobacterium tuberculosis	
• Define the term diarrhea	
• List the infectious causative agents of diarrhea	
• Discuss the characteristics of inflammatory and non inflammatory diarrhea.	
• Discuss important properties, pathogenesis and clinical findings, laboratory diagnosis, treatment and prevention of diarrhea caused by Escherichia coli	
• Briefly discuss the role of Mycobacterium tuberculosis in causing diarrhea	
3. Infectious enterocolitis due to Salmonella species and Shigella	
• Describe the important properties of Salmonella and Shigella	
• List the different species of Salmonella	
• Discuss diarrhea caused by Salmonella and Shigella	
• Discuss the pathogenesis, clinical findings, laboratory diagnosis,treatment and prevention of typhoid fever and Shigella	

4. Infectious enterocolitis due to Vibrio cholera, Campylobacter jejuni, Yersenia enterocolitica	
<ul style="list-style-type: none"> • Discuss the important properties, pathogenesis, clinical findings, laboratory diagnosis, treatment and prevention of vibrio cholera, Campylobacter jejuni and Yersinia enterocolitica 	
5. Laboratory diagnosis of Typhoid	
<ul style="list-style-type: none"> • Discuss the important tests in diagnosing Typhoid 	
6. Stool Detailed Report	
<ul style="list-style-type: none"> • List the clinical indications of stool detailed report 	Practicals
<ul style="list-style-type: none"> • Describe the methods of doing stool DR 	
<ul style="list-style-type: none"> • Discuss the physical, chemical and microscopic features of stool DR with regards to infectious and non infectious causes 	
<ul style="list-style-type: none"> • Identify the eggs of important worms 	
7. Food Poisoning	
<ul style="list-style-type: none"> • List the causative microorganisms of food poisoning 	
<ul style="list-style-type: none"> • Briefly discuss food poisoning due to Staphylococcus Aureus & Listeria 	
<ul style="list-style-type: none"> • Discuss the important properties, pathogenesis ,epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of Bacillus and Clostridia 	
<ul style="list-style-type: none"> • Discuss antibiotic associated pseudomembranous colitis due to Clostridium Difficile 	
8. Anaerobic infections of the Gastrointestinal tract (Peritonitis and appendicitis)	
<ul style="list-style-type: none"> • List the microorganisms causing peritonitis and appendicitis 	
<ul style="list-style-type: none"> • Briefly discuss acute appendicitis and peritonitis 	
<ul style="list-style-type: none"> • Discuss in detail the important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of Bacteriodes and Prevotella 	
9. Parasitic infections relating to the liver	
<ul style="list-style-type: none"> • List the important protozoa, cestodes and trematodes infecting the liver 	Interactive Lectures
<ul style="list-style-type: none"> • Discuss in detail the important properties, pathogenesis, epidemiology, clinical finding, laboratory diagnosis, treatment and prevention of Echinococcus granulosus, Echinococcus multilocularis 	
10. Hepatotropic viruses-I	
<ul style="list-style-type: none"> • Discuss the important properties, summary of replicative cycle, transmission, epidemiology pathogenesis, clinical finding, laboratory diagnosis, treatment and prevention of Hepatitis B, C and D 	
11. Hepatotropic viruses -II	
<ul style="list-style-type: none"> • Discuss the important properties, summary of replicative cycle, transmission, epidemiology pathogenesis, clinical finding, laboratory diagnosis, treatment and prevention of Hepatitis A, E and G 	

12. Intestinal protozoa	Interactive Lectures
<ul style="list-style-type: none"> Classify major protozoan pathogens 	
<ul style="list-style-type: none"> Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of Entamoeba histolytica and Giardia lamblia 	
<ul style="list-style-type: none"> Briefly discuss the minor intestinal protozoa 	
13. Intestinal Cestodes	
<ul style="list-style-type: none"> Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of: 	
i. Taenia solium	
ii. Taenia saginata	
iii. Diphylobothrium latum	
iv. Hymenolepis nana	
v. Dipylidium caninum	
14. Intestinal Trematodes	
<ul style="list-style-type: none"> Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of: 	
i. Schistosoma	
ii. Clonorchis	
iii. Paragonimus	
iv. Fasciola Fasciolopsis	
v. Heterophyes	
15. Intestinal Nematodes-I	
<ul style="list-style-type: none"> Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of: 	
i. Enterobius vermicularis	
ii. Ascaris lumbricoides	
iii. Strongyloides	
16. Intestinal Nematodes-II	
<ul style="list-style-type: none"> Discuss the diseases, important properties, pathogenesis, epidemiology, clinical findings, laboratory diagnosis, treatment and prevention of: 	
i. Ancylostoma and Necator	
ii. Trichuris trichura	
iii. Trichinella	

PATHOLOGY

OBJECTIVES	TEACHING STRATEGY
1. Lesions of oral cavity (Inflammatory/reactive, precancerous and cancerous)	Interactive Lectures/ Tutorials
• Discuss aphthous ulcers & fibroproliferative lesions of oral cavity	
• Discuss the characteristic features of precancerous oral cavity lesions	
• List the risk factors for oral cancer especially squamous cell carcinoma	
• Discuss the pathogenesis, molecular biology and morphology of squamous cell carcinoma	
2. Inflammation & neoplasms of salivary glands	Interactive Lectures
• Discuss sialadenitis and mucocele	
• Classify common benign and malignant tumors of salivary glands	
• Describe the characteristic features, pathogenesis and morphology of the most common salivary gland tumors	
3. Esophageal obstruction, achalasia, oesophagitis & Barrett oesophagus	Interactive Lectures/ Tutorials
• Explain esophageal obstruction, varices and achalasia	
• Classify esophagitis	
• Discuss the risk factors, pathogenesis, morphology and clinical features of Barrett esophagus	
4. Esophageal tumors	Interactive Lectures
• Classify tumors of esophagus.	
• Explain the etiology and pathogenesis of esophageal tumors	
• Identify the morphology and common clinical features of esophageal tumors	
5. Gastritis, Stress related mucosal disease, Chronic Gastritis	Interactive Lectures/ Tutorials
• Define Gastritis	
• Describe its pathogenesis, morphology & clinical features	
• Define stress related mucosal disease	
• Discuss its pathogenesis, morphology & clinical features	
• Explain the pathogenesis, morphology & clinical features of chronic gastritis (with special emphasis on H. Pylori gastritis and autoimmune eosinophilic, lymphocytic & granulomatous gastritis)	
6. Complications of chronic gastritis	
• Discuss risk factors, pathogenesis, morphology, clinical features & complications of peptic ulcer disease	
• Define mucosal atrophy, intestinal metaplasia, dysplasia & gastritis cystica in relation to gastritis	
• Discuss hypertrophic gastropathies	

7. Gastric polyps & tumors of stomach	Interactive Lectures
<ul style="list-style-type: none"> • Discuss the types, sites, risk factors & morphology of gastric polyps. 	
<ul style="list-style-type: none"> • Classify gastric tumors based on macroscopic and microscopic grounds 	
<ul style="list-style-type: none"> • Discuss epidemiology, risk factors, pathogenesis, molecular biology, morphology and clinical features of gastric adenoma & adenocarcinoma 	
<ul style="list-style-type: none"> • Explain gastric lymphoma, carcinoid tumor and gastrointestinal stromal tumors 	
8. Intestinal obstruction/ Ischemic bowel diseases/ Angiodysplasia	
<ul style="list-style-type: none"> • Describe types of intestinal obstructions 	
<ul style="list-style-type: none"> • Discuss the risk factors and morphology of intestinal obstructions 	
<ul style="list-style-type: none"> • Describe the pathogenesis, morphology, clinical features of Ischemic bowel disease 	
<ul style="list-style-type: none"> • Define angiodysplasia 	
9. Malabsorption & Diarrhea	Interactive Lectures
<ul style="list-style-type: none"> • Define malabsorption & diarrhea 	
<ul style="list-style-type: none"> • Classify diarrhea 	
<ul style="list-style-type: none"> • Enumerate different malabsorption diseases including Cystic fibrosis, Celiac disease, environmental enteropathy, Autoimmune enteropathy, Lactase deficiency & Abetalipoproteinemia 	
<ul style="list-style-type: none"> • Discuss the pathogenesis, risk factors, morphology and clinical features of Celiac disease 	
<ul style="list-style-type: none"> • Discuss etiopathogenesis of Whipple disease 	
10. Role of viruses in infecting gastrointestinal tract	Interactive Lectures
<ul style="list-style-type: none"> • List the important viruses that cause gastrointestinal tract infections 	
<ul style="list-style-type: none"> • Discuss the important properties, replicative cycle, transmission, epidemiology, pathogenesis, clinical findings, laboratory diagnosis, treatment and prevention of Polio and Rota viruses 	
11. Irritable bowel syndrome (IBS), Inflammatory bowel disease (IBD), Indeterminate colitis & Colitis associated neoplasia	Interactive Lectures
<ul style="list-style-type: none"> • Define irritable bowel syndrome and inflammatory bowel disease 	
<ul style="list-style-type: none"> • Explain its pathogenesis & clinical features 	
<ul style="list-style-type: none"> • Describe its types (crohn & ulcerative colitis) and their pathogenesis 	
<ul style="list-style-type: none"> • Explain the morphology and clinical features of both types of IBD 	
<ul style="list-style-type: none"> • Differentiate between crohn & ulcerative colitis 	
<ul style="list-style-type: none"> • Define intermediate colitis 	
<ul style="list-style-type: none"> • Describe long term complications of ulcerative colitis & crohn disease 	
<ul style="list-style-type: none"> • Define diversion colitis, microscopic colitis, sigmoid diverticulosis & graft versus host disease 	
12. Polyps of small & large intestine (Familial adenomatous polyposis FAP)	Interactive Lectures
<ul style="list-style-type: none"> • Classify non-neoplastic & neoplastic polyps of intestine 	
<ul style="list-style-type: none"> • Describe its morphology & clinical features 	
<ul style="list-style-type: none"> • Briefly discuss gastrointestinal polyposis syndromes 	

13. Tumors of small & large intestines, Hemorrhoids, appendicitis, Peritonitis, tumors of anal canal & peritoneum	Interactive Lectures/ Tutorials
• Classify tumors of intestines	
• Discuss the risk factors and pathogenesis of adenoma-adenocarcinoma sequence	
• Describe the gross and microscopic features of intestinal tumors	
• Discuss the clinical features, grading and staging of intestinal tumors	
• Briefly discuss tumors of anal canal, hemorrhoids, acute appendicitis, tumors of appendix, peritonitis & peritoneal mesothelioma	
14. General features of liver diseases	Interactive Lectures
• Describe the mechanism of injury & repair	
• Elaborate laboratory diagnosis of hepatic diseases	
• Describe acute & chronic liver failure	
• Explain morphology & clinical features of liver failure	
• Define acute on chronic liver failure	
15. Hepatitis; Viral, Autoimmune & Drug Induced	Interactive Lectures/ Tutorials
• Discuss the morphological features of viral hepatitis	
• Define autoimmune & drug induced hepatitis	
• Describe clinicopathologic features, morphology & diagnostic criteria of autoimmune hepatitis	
• Describe patterns of drug & toxin induced hepatic injury	
• Define clinicopathologic syndromes of viral hepatitis, chronic hepatitis & carrier state	
16. Alcoholic & Non-Alcoholic Liver Disease (NAFLD)	Interactive Lectures
• Explain the pathogenesis, morphology & clinical features of Alcoholic Liver Disease	
• Define non-alcoholic liver disease & World Health Organization criteria for the metabolic syndrome	
• Discuss the pathogenesis, morphology & clinical features of NAFLD	
17. Storage and metabolic disorders of liver	
• List the types of storage & metabolic disorders of liver	
• Discuss the genetic alterations, pathogenesis, morphology & clinical presentation of Hemochromatosis, Wilson disease and α 1 anti-trypsin deficiency	
18. Cholestatic Diseases, Autoimmune Cholangiopathies. Structural anomalies of the biliary tree	Interactive Lectures
• Explain bilirubin & bile formation	
• Describe pathophysiology & causes of jaundice	
• Discuss pathogenesis & morphology of cholestasis, large bile duct obstruction, cholestasis of sepsis, primary hepatolithiasis, neonatal cholelithiasis & biliary atresia	
• Describe the pathogenesis, morphology & clinical features of primary biliary cirrhosis, primary sclerosing cholangitis	
• Define choledochal cyst & fibropolycystic disease	

19. Circulatory Disorders, Hepatic complications of organ or Hematopoietic stem cell transplantation, Hepatic diseases associated with pregnancy	Tutorials
<ul style="list-style-type: none"> Describe the clinical manifestation & morphology of various circulatory disorders of liver Describe morphology of graft-versus host disease & liver graft rejection, preeclampsia & eclampsia, acute fatty liver of pregnancy & intrahepatic cholestasis of pregnancy 	
20. Tumors of liver	
<ul style="list-style-type: none"> Classify liver tumors Discuss the molecular profile, pathogenesis and morphology of benign liver tumors Discuss the risk factors, pathogenesis, morphology, clinical features and diagnosis of malignant tumors of liver 	Interactive Lectures
21. Pathological diseases, and tumors of gall bladder	
<ul style="list-style-type: none"> Discuss the etiology, pathogenesis, gross morphological & histological features of different types of cholecystitis, cholelithiasis Discuss risk factors, pathogenesis, morphology and diagnosis of carcinoma of gall bladder 	
22. Non neoplastic diseases of pancreas	Interactive Lecture/ Tutorial
<ul style="list-style-type: none"> Describe non tumorous conditions of Pancreas including congenital anomalies, acute and chronic pancreatitis 	
23. Neoplastic cysts, Neoplasms of Pancreas	
<ul style="list-style-type: none"> Discuss Congenital cysts & Pseudocysts Discuss cystic neoplasm of Pancreas Describe precursors to pancreatic cancers, and the pathogenesis, morphology & clinical features of pancreatic carcinoma Define Acinar cell carcinoma & Pancreatoblastoma 	
24. Liver function tests	
<ul style="list-style-type: none"> Discuss the liver function tests 	Tutorial
25. Histopathology of oral cavity, salivary glands, pre-malignant & malignant lesions of esophagus	
<ul style="list-style-type: none"> Describe the morphology of: <ol style="list-style-type: none"> Leucoplakia & eythroplakia Most common salivary gland tumors Barrett esophagus Squamous cell carcinoma & adenocarcinoma of esophagus 	
26. Histopathology of gastric diseases and gastric tumors	
<ul style="list-style-type: none"> Describe the morphological features of gastritis, and peptic ulcer disease Discuss morphological features of gastric polyps, adenoma & adenocarcinoma 	
27. Histopathology of polyps & intestinal tumors	Interactive Lecture/ Tutorial
<ul style="list-style-type: none"> Classify intestinal polyps Discuss intestinal polyps Discuss the morphological features of intestinal tumors 	

28. Biochemical tests to identify microorganisms especially of the Gastrointestinal tract	
• Identify lactose and non lactose fermenting colonies on MacConkeys agar	
• Discuss the importance of:	
i. Triple sugar iron agar test	
ii. Sulphur Indole Motility agar test	
iii. Citrate utilization test	
iv. Urease test	
29. Cirrhosis and Portal Hypertension	
• Explain general features of hepatic disease which include liver failure, liver cirrhosis, portal hypertension, ascites and porto-systemic shunts	Interactive Lectures
• Discuss liver cirrhosis along with its different types and its predisposing factors	
• Explain the patho-physiology and clinical manifestations of liver cirrhosis	
• Analyze the initial evaluation of a patient with suspected portal hypertension	

PHARMACOLOGY

OBJECTIVES	TEACHING STRATEGY
1. Prokinetic & Antiemetic drugs	Tutorials
• Classify the Prokinetic and Antiemetic agents.	
• Discuss the basic & clinical pharmacology of antiemetics and prokinetic drugs	
2. Serotonin agonists & antagonists	
• Explain the mechanism of action, therapeutic uses, adverse effects, and contraindications of serotonin agonists and antagonists	
• State the role of serotonin, its agonist and antagonists in different clinical conditions	
• Discuss the basic and clinical pharmacology of Serotonin agonist and antagonist	Interactive Lectures
3. Drugs used in Acid Peptic Disorder including H.pylori- I &II	
• Classify the drug used in treatment of Acid Peptic Disorder including H.pylori	
• Discuss basic & clinical pharmacology of these drugs	
• Discuss the treatment of peptic ulcer	
4. Drug Management of Hepatitis (Anti- Viral drugs-II)	
• Explain different treatment strategies for hepatitis	
• Discuss basic & clinical pharmacology of these different drug groups used in hepatitis including antiviral drugs & interferons	
• Discuss the pharmacokinetics & dynamics of drug regimens used in hepatitis	
5. Drugs used in constipation	
• Discuss the classification of laxatives / purgatives	
• Explain kinetics & dynamics of these drugs.	Tutorials
6. Treatment of Amebiasis (Antiprotozoal drug-II)	
• Classify drug used in treatment of Amebiasis	
• Explain their basic & clinical pharmacology	
• Discuss the pharmacokinetics & dynamics of drug regimens used in diarrhea, IBS and amebiasis	

7. Anti- diarrheal drugs including antimicrobial & drugs for Irritabile Bowel Syndrome (IBS)	Interactive Lecture/ Case- Based Integrated Learning
<ul style="list-style-type: none"> Classify anti-diarrheal drugs including antimicrobial drugs Explain their basic & clinical pharmacology as well as treatment of IBD 	
8. Anti-Helminthic drugs	Interactive Lecture
<ul style="list-style-type: none"> Classify various drugs used in the treatment of Helminthic infections with their pharmacokinetics and dynamics 	
9. Anti-Fungal drugs	
<ul style="list-style-type: none"> Classify antifungal drugs Discuss basic and clinical pharmacology of Antifungal agents 	Tutorial
10. Treatment of Typhoid	
11. Preparation of Tyrode solution	Practicals
<ul style="list-style-type: none"> Demonstrate the preparation of Tyrode solution for practical set- up State its contents and their quantities for solution preparation 	
12. Effects of given drug on the intestine of Rabbit	
<ul style="list-style-type: none"> Demonstrate the effects of different drugs on Rabbit's intestine using power lab 	

SURGERY

OBJECTIVES	TEACHING STRATEGY
Clinical features of intestinal obstruction	Interactive Lectures
<ul style="list-style-type: none"> Describe the patho-physiology of dynamic and adynamic intestinal obstruction 	
<ul style="list-style-type: none"> Discuss the cardinal features of intestinal obstruction on history and examination 	
<ul style="list-style-type: none"> Enlist the causes of small and large bowel obstruction 	
<ul style="list-style-type: none"> Recommend and infer laboratory and radiological investigations in a patient with intestinal obstruction 	
<ul style="list-style-type: none"> Discuss the basic management principles for intestinal obstruction 	

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



LEARNING RESOURCES

SUBJECT	RESOURCES
ANATOMY	<u>TEXT BOOKS</u> 1. K.L. Moore, Clinically Oriented Anatomy
COMMUNITYMEDICINE	<u>TEXTBOOKS</u> 1. Community Medicine by Parikh 2. Community Medicine by M Illyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma
FORENSIC MEDICINE	<u>TEXT BOOKS</u> 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. <u>REFERENCE BOOKS</u> 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 <u>WEBSITES:</u> www.forensicmedicine.co.uk
GENERAL MEDICINE	<u>REFERENCE BOOKS:</u> 1. Hutchison's Clinical Methods, 23 rd Edition 2. MacLeod's clinical examination 13th edition 3. Davidson's Principles and Practice of Medicine 4. Kumar and Clark's Clinical Medicine 5. HCAI guidelines CDC
PATHOLOGY/MICROBIOLOGY	<u>TEXTBOOKS</u> 1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD <u>WEBSITES:</u> 1. http://library.med.utah.edu/WebPath/webpath.html 2. http://www.pathologyatlas.ro/
PHARMACOLOGY	<u>A. TEXTBOOKS</u> 1. Lippincott 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	3 RD YEAR	MONTH
WEEK 1-4	LOCOMOTOR II MODULE	24 th May 2021
		19 th June 2021
WEEK 1-4	RESPIRATORY II MODULE	21 st June 2021
		17 th July 2021
WEEK 1-4	CVS II MODULE	26 th July 2021
		20 th August 2021
WEEK 1-6	GIT II MODULE	23 rd August 2021
		9 th October 2021
PRE PROF. EXAMINATION*		

*Final dates will be announced later