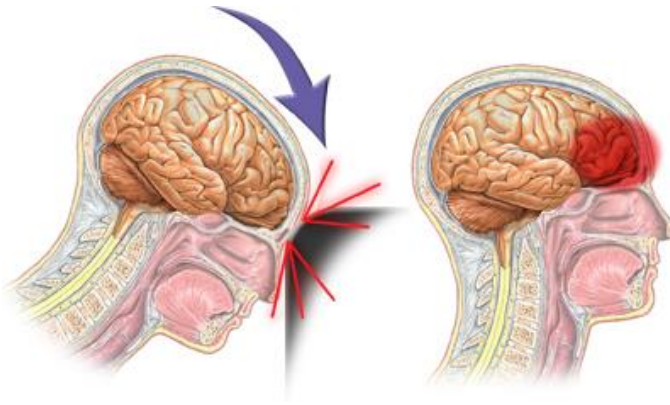


Concussion

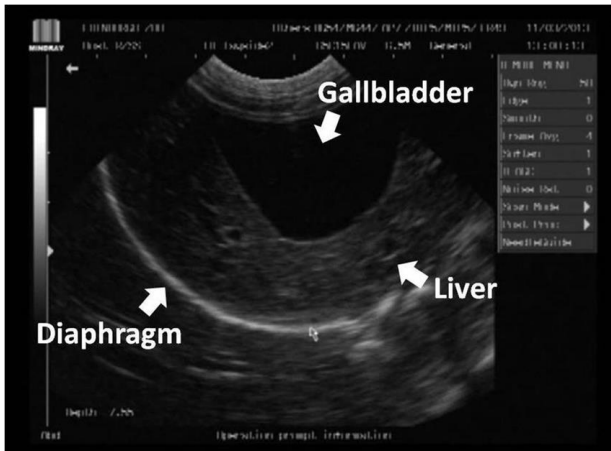


STUDY GUIDE

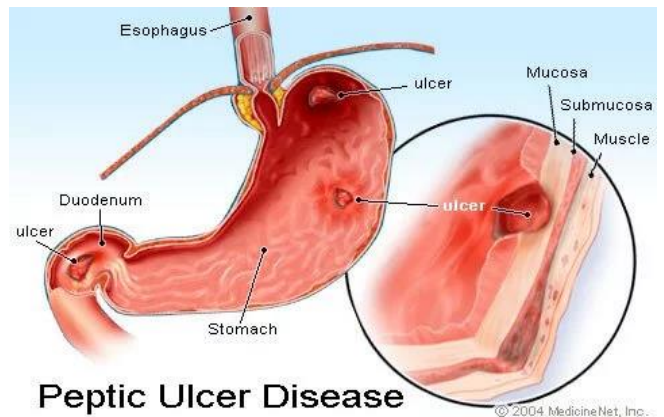
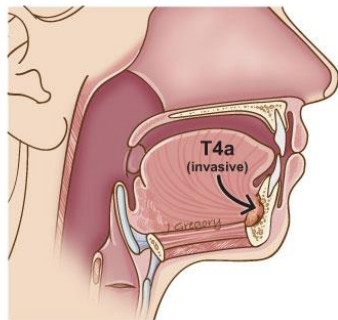
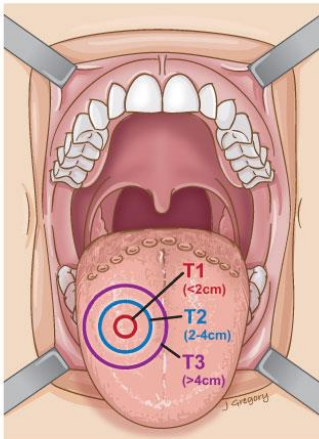
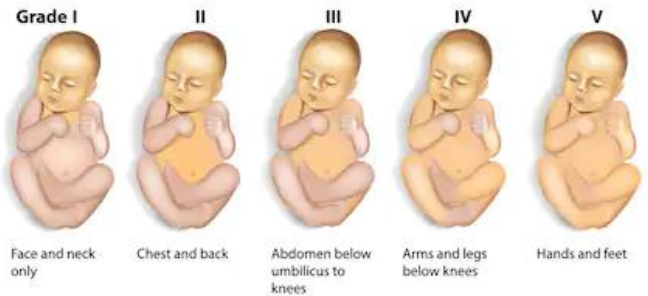
GASTROINTESTINAL TRACT & HEPATOBILIARY MODULE

THIRD YEAR MBBS

20th April – 13th June 2020



Extent of jaundice



Peptic Ulcer Disease



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



STUDY GUIDE FOR GIT & HEPATOBILIARY MODULE

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Module name: **GIT & Hepatobiliary** Year: **Three** Duration: **8 weeks (April- June 2020)**

Timetable hours: **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:	<ul style="list-style-type: none"> Prof. M. Mansoor-ul-Haq (Gastroenterology)
CO-COORDINATORS:	<ul style="list-style-type: none"> Dr. Afifa Tabassum (DHCE) Dr. Shahid Karim (Gastroenterology)

DEPARTMENTS & RESOURCE PERSONS FACILITATING LEARNING

BASIC HEALTH SCIENCES	CLINICAL AND ANCILLARY DEPARTMENTS
COMMUNITY MEDICINE <ul style="list-style-type: none"> Dr. Saima Zainab 	GASTROENTEROLOGY <ul style="list-style-type: none"> Prof. M. Mansoor-ul-Haq Dr. Shahid Karim
FORENSIC MEDICINE <ul style="list-style-type: none"> Prof. Murad Zafar Marri 	GENERAL SURGERY <ul style="list-style-type: none"> Prof. Rufina Soomro
PATHOLOGY <ul style="list-style-type: none"> Prof. Naveen Faridi 	PEDIATRICS <ul style="list-style-type: none"> Prof. Samina Shamim
PHARMACOLOGY <ul style="list-style-type: none"> Prof. Nazir Ahmad Solangi 	MEDICINE <ul style="list-style-type: none"> Prof. KU Makki
	RADIOLOGY <ul style="list-style-type: none"> Dr. Misbah Tahir
DEPARTMENT of HEALTH PROFESSIONS EDUCATION Professor Nighat Huda Dr. Sobia Ali Dr Afifa Tabassum Dr Muhammad Suleman Sadiq Dr Mehnaz Umair	
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 STUDYGUIDE?

It is a guide to:

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

THE STUDYGUIDE:

- 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 semester 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.

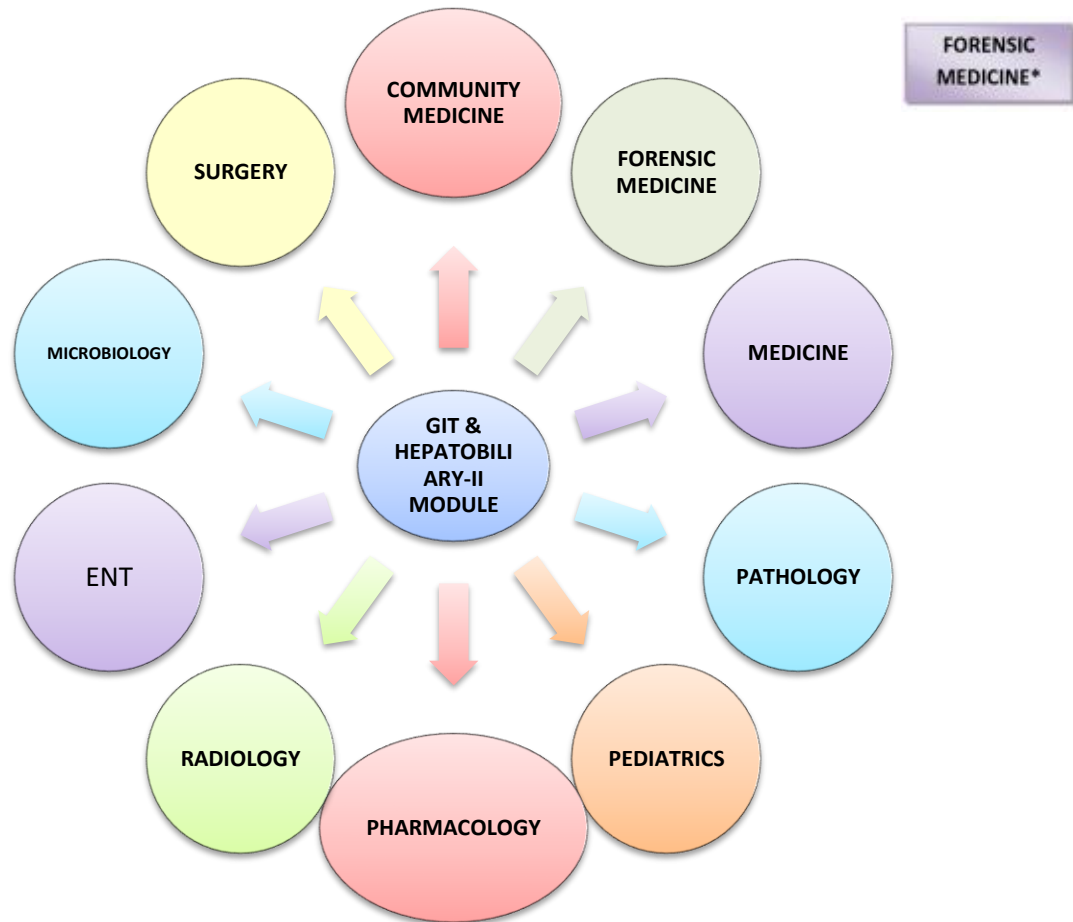
CURRICULUM FRAMEWORK

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

INTEGRATED CURRICULUM comprises of system-based modules such as GIT & Hepatobiliary, Renal & Excretory System II and Endocrinology 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, Task oriented learning followed by task presentation, skills acquisition in skills lab, computer-based assignments, learning experiences in clinics, wards.

INTEGRATING DISCIPLINES OF GIT & HEPATOBILIARY-IIMODULE



*forensic medicine will run parallel in 3rd year

LEARNING METHODOLOGIES

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

- Interactive Lectures
- Small Group Discussion
- Case- Based Discussion (CBD)
- Clinical Experiences
 - Clinical Rotations
- Skills session
- Task-Oriented Learning
 - Task Presentation

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 lectures, tutorials and self study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE-BASED DISCUSSION (CBD): 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 CBD 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.

SKILLSSESSION: Skills relevant to respective module are observed and practiced where applicable in simulated-learning environment such as 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.

MODULE1: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 eighth 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:

TOPICS & OBJECTIVES	FACULTY	LEARNING STRATEGY
OVERVIEW OF GIT & NUTRITION		
<ul style="list-style-type: none"> Describe the structure of digestive system 	Anatomy	Interactive Lecture
<ul style="list-style-type: none"> Perform correct abdominal examination on a patient 	Gastroenterology	Hands-on Practical session
<ul style="list-style-type: none"> Explain the importance of malnutrition in children. Describe the factors that lead to malnutrition. Classify malnutrition according to Gomez and WHO classification Differentiate between Marasmus and Kwashiorkor. List the complications of malnutrition. 	Pediatrics	Interactive Lecture
ORAL CAVITY		
<ul style="list-style-type: none"> Perform nasogastric intubation on a mannequin 	Skills Lab	Simulation Based Practice
<ul style="list-style-type: none"> Discuss risk factors of oral cancer Discuss the histo-pathology of tongue including different types of papillae 	Pathology	Interactive Lecture
<ul style="list-style-type: none"> List differential diagnosis of white patch / plaque in oral cavity 		
<ul style="list-style-type: none"> Describe precancerous lesion of oral cavity 		
<ul style="list-style-type: none"> Discuss step by step pathogenesis and morphology of squamous cell carcinoma 		Interactive Lecture
<ul style="list-style-type: none"> Discuss inflammatory disease and neoplasms of salivary gland Describe the characteristic features, pathogenesis and morphology of the most common salivary gland tumors 		Small Group Discussion
<ul style="list-style-type: none"> Discuss classification of salivary gland tumor 		
<ul style="list-style-type: none"> Discuss the causes of dysphagia along with the clinical presentation, investigations and management plan 	Gastroenterology	Interactive Lecture
<ul style="list-style-type: none"> Explain the clinical manifestations of salivary gland diseases Comprehend differential diagnosis of salivary gland dysfunction Demonstrate knowledge of different strategies for the treatment of salivary gland disorders 	ENT	Interactive Lectures

<ul style="list-style-type: none"> Classify salivary gland tumors on histopathological ground Describe etiology & clinical presentation of salivary gland neoplasms Explain the management approach of a patient with salivary gland tumor 		
ESOPHAGUS		
<ul style="list-style-type: none"> Explain esophagitis and barret esophagus 	Pathology	Interactive Lecture
<ul style="list-style-type: none"> Explain the etiology and pathogenesis of esophageal tumors Discuss the common clinical features of esophageal malignancies 		Interactive Lecture
<ul style="list-style-type: none"> Identify Tumors of the esophagus on basis of histo-pathological findings 		Practical
<ul style="list-style-type: none"> Explain major causes of upper and lower GI bleeding and important elements of the history Discuss the guidelines for effective therapeutic strategies 	Gastroenterology	Interactive Lecture
STOMACH		
<ul style="list-style-type: none"> Differentiate between acute and chronic gastritis Explain the pathology of Peptic ulcer disease 	Pathology	Interactive Lecture
<ul style="list-style-type: none"> Identify the typical clinical presentation and risk factors for acid peptic disease Describe appropriate diagnostic plan based on individual risk factors Explain a suitable therapeutic regimen for dyspepsia 	Medicine	Interactive Lecture
<ul style="list-style-type: none"> Discuss common causes of pain affecting upper abdomen Explain approach to a patient with upper abdominal pain including history taking and performing physical examination Recommend a management plan for patient with upper abdominal pain 	Surgery	Interactive Lecture
<ul style="list-style-type: none"> Discuss the etiology and management of peptic ulcer Describe the treatment and discuss pharmacological agents of H. pylori infection. Discuss principle of infection eradication 	Pharmacology	Case-Based Learning
<ul style="list-style-type: none"> Differentiate between normal histology of the stomach and gastric adenocarcinoma 	Pathology	Practical
<ul style="list-style-type: none"> Classify gastric tumors Discuss epidemiology, risk factors, pathogenesis, molecular biology, morphology and clinical features of gastric adenocarcinoma Explain the significance of staging in dictating treatment 		Interactive Lecture

and prognosis of gastric lymphomas		
<ul style="list-style-type: none"> List the causes for pyloric stenosis Identify the need for adequate fluid resuscitation and stabilization of electrolytes and acid base balance before surgical treatment Discuss the management options for pyloric stenosis 	Surgery	Interactive Lecture
LIVER		
<ul style="list-style-type: none"> Classify the jaundice along with their causes 	Pathology	Small Group Discussion
<ul style="list-style-type: none"> Explain general features of hepatic disease which include liver failure, liver cirrhosis, portal hypertension, ascites and porto-systemic shunts 		Interactive Lectures
<ul style="list-style-type: none"> Explain the patterns of hepatic injury Differentiate morphologically between acute and chronic hepatitis 		Small Group Discussions
<ul style="list-style-type: none"> Discuss alcoholic liver disease Explain key morphological features of alcoholic liver disease along with its pathophysiology Describe morphology Nonalcoholic Fatty Liver Disease (NAFLD) 		
<ul style="list-style-type: none"> Discuss metabolic liver disorders 		
<ul style="list-style-type: none"> Explain clinical presentation, mode of transhistocyte, serological features, markers and morphology of viral hepatitis 		
<ul style="list-style-type: none"> Discuss a logical approach for investigations of raised liver function test and or liver disease including lab diagnosis of hepatitis Interpret hepatitis B serologic test results. 		
<ul style="list-style-type: none"> Discuss the types of storage disorders of liver 	Pathology	Interactive Lectures
<ul style="list-style-type: none"> Explain circulatory disorders of liver 		
<ul style="list-style-type: none"> Describe the pathophysiology and clinical features of Hydatid disease 		
<ul style="list-style-type: none"> Describe benign liver tumors 		
<ul style="list-style-type: none"> Describe the risk factors of benign and malignant liver tumors 		
<ul style="list-style-type: none"> Discuss diagnosis, type and morphological features of hepatocellular carcinoma 		
<ul style="list-style-type: none"> Discuss the sign and symptoms of hepatic disease Discuss the complications of viral hepatitis 		Interactive Lecture
<ul style="list-style-type: none"> Differentiate various stages of hepatitis B virus infection Summarize the spectrum of clinical manifestations of hepatitis B virus Explain the basic virological and serological hallmarks of hepatitis B virus infection Discuss treatment with particular emphasis on choice of agents 		

<ul style="list-style-type: none"> Describe the etiology, incidence, pathology and clinical manifestations of hepatitis C infection Illustrate updated guidelines for screening and evaluating patients for HCV Discuss antiviral therapy for HCV Relate the importance of monitoring patients for antiviral treatment response and toxicities 	Gastroenterology	Interactive Lectures
<ul style="list-style-type: none"> Discuss clinical presentation, relevant investigation, treatment, complications and adverse effect of drugs for fulminant hepatic failure 		
<ul style="list-style-type: none"> Describe the classification, prevalence, and etiology of hepatic encephalopathy Identify the different categories of diagnostic methods for hepatic encephalopathy Define Hepatorenal Syndrome Explain the pathophysiology of hepatorenal syndrome Recognize the clinical assessment Demonstrate understanding of basic therapeutic Considerations Discuss prevention of this syndrome 		
<ul style="list-style-type: none"> Discuss the clinical presentation, causes, relevant investigation and management plan for obstructive jaundice 		
<ul style="list-style-type: none"> Explain with examples the pattern of drug or toxin induced liver diseases such as autoimmune hepatitis, Drug and Toxins induced hepatitis Discuss logical approach for investigation of raised liver function tests and liver diseases 	Pathology	Interactive Lecture
<ul style="list-style-type: none"> Discuss hyperbilirubinemia and jaundice in children Explain the causes of jaundice in newborns that is physiological and pathological Discuss the clinical evaluation of neonatal jaundice along with its treatment 	Pediatrics	Interactive Lecture
<ul style="list-style-type: none"> Discuss the importance of imaging in recognition of normal and abnormal hepatobiliary structures on <ul style="list-style-type: none"> U/S CT scan MRI+MRCP Flouroscopy Nuclear studies 	Radiology	Interactive Lecture
<ul style="list-style-type: none"> Identify the signs and symptoms of viral hepatitis. Differentiate the various stages of HBV infection Discuss the diagnostic tests Explain prevention strategies-vaccinations for viral hepatitis A & B Explain the treatment and management of viral hepatitis A, B, & C 	Medicine	Interactive Lecture/Case-Based Learning

<ul style="list-style-type: none"> • Discuss new treatment protocols for viral hepatitis C 		
<ul style="list-style-type: none"> • Identify the underlying causes of ascites • Describe its pathogenesis • Explain paracentesis • Discuss management strategies 		Interactive Lecture
<ul style="list-style-type: none"> • Discuss the management of acute and chronic hepatitis C. • Discuss pharmacological agents used for the treatment of Hepatitis B. • Discuss side effects and their management • Discuss the management of hepatitis C with co morbidities e.g cirrhosis, transplantation or HIV • Identify the management strategy for the treatment of partial responders, nonresponders, and relapsers with HCV. • Discuss pros and cons of current treatment option for chronic HBV and HCV infection 	Pharmacology	Case-Based Learning
<ul style="list-style-type: none"> • 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 	Pathology	Interactive Lecture
<ul style="list-style-type: none"> • List common surgical causes of hepatomegaly • Discuss the clinical features of common surgical diseases causing hepatomegaly 	Surgery	Interactive Lectures
<ul style="list-style-type: none"> • List the causes of liver abscess • Discuss the clinical features of liver abscess • Name the investigations related to liver abscess 		
<ul style="list-style-type: none"> • Explain pathology of obstructive jaundice • State the investigations for obstructive jaundice • Describe management of obstructive jaundice 		
<ul style="list-style-type: none"> • Discuss the classification, clinical manifestations, and long-term risks associated with acute and chronic pancreatitis • Assess common diagnostic tools used in acute and chronic pancreatitis and evaluate their usefulness • Analyze patient-specific characteristics in determining • Demonstrate an understanding of the role of enteral and parenteral nutrition support in managing acute and chronic pancreatitis 		
GALL BLADDER & PANCREAS		
<ul style="list-style-type: none"> • Classify pancreatic tumors 	Pathology	Interactive Lecture

<ul style="list-style-type: none"> Discuss imaging features of tumors of pancreas (Solid and cystic pancreatic tumors) 		Small Group Discussion
<ul style="list-style-type: none"> Explain the morphology and histological features in case of cholecystitis, cholelithiasis and carcinoma of gallbladder Discuss extra-hepatic biliary tract pathology Describe the morphological features in cases of acute pancreatitis, chronic pancreatitis and pancreatic adenocarcinoma 		Interactive Lecture
<ul style="list-style-type: none"> Identify risk factors that contribute to the development of cholelithiasis Explain various presentations and complications of gall stone disease <ul style="list-style-type: none"> Enlist the techniques of removal of gall bladder 	Surgery	Interactive Lecture/Case-Based Learning
SMALL INTESTINE		
<ul style="list-style-type: none"> Discuss malabsorption Identify the major patho-physiological mechanisms responsible for generalized malabsorption and malabsorption of specific nutrients Discuss differential diagnosis for a patient with suspected malabsorption Identify the most appropriate tests to identify malabsorption of specific nutrients 	Pathology	Small group discussion
<ul style="list-style-type: none"> Identify the various histo-pathological types of tumors of intestines 		Practical
<ul style="list-style-type: none"> Analyze the effect of pilocarpine on rabbit's small intestine 	Pharmacology	Practical
<ul style="list-style-type: none"> Analyze the effects of parasympathetic and sympathetic agents on small intestine Prepare and compose Tyrode Solution along with the role of its different components 		
<ul style="list-style-type: none"> Discuss the differential diagnosis of an abdominal wall or inguinal mass Describe the potential sites for abdominal wall hernias Explain the embryology leading to the development of inguinal hernia and hydrocele Identify anatomic differences between direct inguinal, indirect inguinal and femoral hernia Discuss the management of paraumbilical and umbilical hernia in adults and children Discuss the clinical conditions that may predispose to development of hernia Discuss the indications, surgical options, and normal post-operative course for Inguinal and femoral hernia repair Discuss the clinical significance of incarcerated, strangulated, reducible and Richter's hernias 	Surgery	Interactive Lecture

<ul style="list-style-type: none"> Describe clinical factors contributing to the development an incisional hernia and its repair 		
LARGE INTESTINE		
<ul style="list-style-type: none"> Describe types of intestinal obstructions Discuss risk factors and morphology of obstructions Discuss the risk factors for enterocolitis and ischemic colitis Describe the patho-physiology and clinical features of necrotizing enterocolitis 	Pathology	Interactive Lectures
<ul style="list-style-type: none"> Differentiate between diarrhea and dysentery along with the common infective agents causing diarrhea/dysentery 		
<ul style="list-style-type: none"> Explain pathology of inflammatory bowel disease Differentiate between ulcerative colitis and Crohn's disease 		
<ul style="list-style-type: none"> Classify tumors of the large and small bowel Discuss the pathogenesis and molecular pathway of colorectal carcinoma Discuss the different Polyposis syndromes 		
<ul style="list-style-type: none"> List bacterial, viral and parasitic infections of enterocolitis 	Pathology	Small group discussion
<ul style="list-style-type: none"> Identify the levels of dehydration Recognize clinical signs of dehydration. Assess dehydration in young infants and sick children. Classify diarrhoea and severity of dehydration using IMNCI charts. Develop a management plan for diarrhoea. Justify selection of plans A, B or C for dehydration based on the patient's condition 	Pediatrics	Interactive Lecture
<ul style="list-style-type: none"> Describe various types of acute gastroenteritis Discuss patho-physiology and common organisms responsible for acute gastroenteritis Identify severity of dehydration Describe management of acute gastroenteritis and associated dehydration Explain rationale behind ORS & its use Describe preventive measures for acute gastroenteritis Discuss the complications of acute gastroenteritis 	Medicine	Interactive Lecture
<ul style="list-style-type: none"> Discuss the classification, mechanism of action, pharmacokinetics, therapeutic uses and adverse effects of laxatives and purgatives Enlist the drugs that promote gastrointestinal motility Classify antiemetic drugs along with their pharmacokinetic 	Pharmacology	Interactive Lecture

profile and adverse effects		
<ul style="list-style-type: none"> Discuss the causative factors for inflammatory bowel disease (IBD) Explain importance of endoscopic, histological, radiological and biochemical investigations to finalize the diagnosis of Ulcerative colitis/Crohn's disease Discuss the complications of chronic diarrhea 	Medicine	Interactive Lectures
<ul style="list-style-type: none"> Discuss pharmacological and surgical management of IBD Discuss various complications of IBD 		
<ul style="list-style-type: none"> Discuss the causes and mechanism of malabsorption Discuss commonest diseases associated with malabsorption such as celiac sprue, whipples disease, Short Bowel Syndrome, Bacterial overgrowth syndrome and tropical sprue Identify the diagnostic tests for celiac disease Describe how to effectively manage patients with Malabsorption Syndrome and celiac disease Discuss complications of the disease 		
<ul style="list-style-type: none"> Discuss the aetiological factors of Irritable bowel syndrome Diagnose Irritable bowel syndrome when given written data Justify management plan for the given condition Discuss complications of the disease 	Medicine	Interactive Lecture
<ul style="list-style-type: none"> Discuss the treatment of Irritable Bowel Syndrome (IBS) and constipation Enlist the drugs used in IBS along with their pharmacokinetic profile 	Pharmacology	Interactive Lecture
<ul style="list-style-type: none"> List the main types of patho-physiologic mechanisms of abdominal pain Describe the relative likelihood of common causes of abdominal pain according to the quadrant in which the pain is located Discuss the symptoms and signs indicative of an acute abdomen Describe the key diagnostic criteria for common causes of abdominal pain, based on a history, physical exam and laboratory testing Discuss the steps in a critical pathway for patients with an acute abdomen 	Surgery	Interactive Lectures
<ul style="list-style-type: none"> Describe the patho-physiology of dynamic and adynamic intestinal obstruction Discuss the cardinal features of intestinal obstruction on history and examination Enlist the causes of small and large bowel obstruction Recommend and infer laboratory and radiological investigations in a patient with intestinal obstruction Discuss the basic management principles for intestinal 		

obstruction		
<ul style="list-style-type: none"> Describe surgical anatomy of the anus and anal canal List common causes of bleeding per rectum Discuss the important clinical features of different causes of bleeding per rectum Outline an investigation plan for a patient with bleeding per rectum 		
COMMUNITY MEDICINE		
Health Policy <ul style="list-style-type: none"> Describe the Walt and Gilson model of health policy analysis Describe the health policy history of Pakistan Explain the stages of health policy process Explain the health policy issues of Pakistan Discuss how to solve issues related to health policy of Pakistan 	Community Medicine	Interactive Lectures
Leadership in health <ul style="list-style-type: none"> Discuss the importance of leadership in health system of Pakistan Describe the concept of leadership Explain the leadership quality 		
Health Programme in Pakistan <ul style="list-style-type: none"> Discuss the various health care programs of Pakistan and explain their importance in enhancing quality of life Identify the issues in health program of Pakistan Discuss how to solve issues related to health programs of Pakistan 		
Health Planning <ul style="list-style-type: none"> Discuss the different steps of the planning cycle Describe the health planning process of Pakistan, Explain the types of health planning, Discuss the planning bodies of Pakistan, Explain the health planning issues of Pakistan, Discuss how to solve issues related to health planning of Pakistan 		
Health Sector Reforms <ul style="list-style-type: none"> Discuss the main objectives and components of health sector reforms of Pakistan Explain the major weaknesses and challenges of the health sector reforms Explain health sector reforms of Pakistan 	Community Medicine	Interactive Lectures

<ul style="list-style-type: none"> • Discuss the level of health sector reforms • List the recent health sector reforms of Pakistan • Identify the components of health sector reforms 		
<p><u>Health Management</u></p> <ul style="list-style-type: none"> • Discuss health care management and its basic activities • Describe the concept of Administration 		
<p><u>Quality of Health Care Management</u></p> <ul style="list-style-type: none"> • Describe the concept of quality • Explain the Total Quality Management 		
<p><u>Research</u></p> <ul style="list-style-type: none"> • Collect data for research proposal developed in the previous year. • Describe the types of data and variables. • Use a statistical package (SPSS) for entering data and later analysis. • Display and summarize data sets. • Apply the concepts of measures of central tendency and spread. • Describe the basic concepts of inferential statistics. • Use SPSS for inferential statistics • Apply the concepts of hypothesis testing (alpha beta errors, confidence interval) 		
FORENSIC MEDICINE		
<p><u>Head Injuries</u></p> <ul style="list-style-type: none"> • Enlist regional injuries. • Define and classify head injuries • Recognize injuries to scalp & face including medicolegal implications 	Forensic Medicine	Interactive Lectures
<p><u>Fractures of Skull</u></p> <ul style="list-style-type: none"> • Describe forensic anatomy of head (scalp, skull, face, neck and spinal cord) • Discuss types and Mechanism of production of fractures of the skull and their medico legal interpretation 		Small Group Discussion
<p><u>Scene of crime and lie detection</u></p> <ul style="list-style-type: none"> • Discuss examination of scene of crime and collection of evidence for crime investigation • List uses of Psycho-physiological testing of credibility by polygraph 		Small Group Discussion
<p><u>Intracranial Haemorrhages</u></p> <ul style="list-style-type: none"> • Evaluate different types of intracranial haemorrhages 		Interactive Lecture

<p>along with forensic anatomy of blood vessels commonly involved</p> <ul style="list-style-type: none"> Recognize signs and symptoms of different types of intracranial haemorrhages and methods to diagnose them Discuss medico legal aspects of intracranial hemorrhages 		
<p><u>Brain injuries</u></p> <ul style="list-style-type: none"> Appreciate different types of injuries to the brain and spine Explain mechanism of brain injuries such as Concussion/Contusion/ Irritation Describe Coup and contre coup injuries with their mechanism Recognize brain injuries to boxers <p><u>Injuries to spinal cord</u></p> <ul style="list-style-type: none"> Discuss spinal injuries with special emphasis on Railway spine Analyze Medico legal aspects of brain and spinal injuries 		Interactive Lectures
<p><u>Injuries to Face& Neck</u></p> <ul style="list-style-type: none"> Recognize common injuries of medico legal significance to the face, Demonstrate understanding of different cervical fractures, whiplash injuries, homicidal and suicidal cut throat, 		Interactive Lecture
<p><u>Injuries to thorax & abdomen</u></p> <ul style="list-style-type: none"> Explain chest injuries including traumatic asphyxia, injuries to ribs, lungs, heart with special emphasis on penetrating injuries and Commotio Cordis. Discuss abdominal injuries with medico legal aspects of rupture of liver, spleen, injuries to abdominal aorta and intestines, Explain pelvic injuries of medico legal significance 		Interactive Lecture
<p><u>Road Traffic Accidents</u></p> <ul style="list-style-type: none"> List Various causes of road traffic accidents, Identify various types of injuries to pedestrians, driver and passengers, State complications of run over injuries with their medico legal significance 	Forensic Medicine	Interactive Lecture
<ul style="list-style-type: none"> Explain injuries to motor cyclists with special stress on tail gating Recognize use of air bags and seat belt syndrome Discuss how to issue fitness certificate for driving license 		Interactive Lecture
<p><u>Mass Disasters</u></p> <ul style="list-style-type: none"> Define 'Mass Disasters' according to World Health Organization Describe the various methods of identification of victims Explain the process of Triage i.e. how to categorize victims 		Interactive Lecture

<p>for treatment</p> <ul style="list-style-type: none"> Summarize the types of triage i.e. Simple, Advance, Reverse 		
<ul style="list-style-type: none"> Define questioned documents List examples of questioned documents 		Small Group Discussion
<p><u>Medicolegal report and examination of person who consumes alcohol</u></p> <ul style="list-style-type: none"> Explain how to prepare and set out an expert report to ensure compliance with court rules 		Small Group Discussion
<p><u>Insanity & Forensic psychiatry-I</u></p> <ul style="list-style-type: none"> Define insane person as per mental health ordinance 2001 Differentiate between Legal and Medical Insanity Explain Procedure of admission in a mental hospital 	Forensic Medicine	Interactive Lecture
<p><u>Mental disorders</u></p> <ul style="list-style-type: none"> Explain different subjective disorders as delusions, hallucinations, illusion, obsession, impulse and their medico legal significance Define various terms of medico legal significance such as affect, fugue, confabulation, I.Q, psychopath, twilight state 		Interactive Lecture
<p><u>McNaughton's Rule</u></p> <ul style="list-style-type: none"> Describe Legal test of insanity i.e. McNaughton's Rule Discuss Civil and criminal responsibilities of insane 		Interactive Lecture
<p><u>True & feigned insanity</u></p> <ul style="list-style-type: none"> Differentiate between true and feigned insanity Recognize motives of feigned insanity 		Interactive Lecture
<p>POISONS</p> <p><u>Cannabis indica & Cocaine poisoning.</u></p> <ul style="list-style-type: none"> Discuss common preparations of Cannabis, chief symptoms of acute and chronic poisoning, run amok and medicolegal aspects Discuss signs & symptoms of acute and chronic cocaine intoxication. Explain cocaine body packers, cocaine drug addiction 		Small Group Discussions
<p><u>Kerosene oil poisoning/ dhatura poisoning</u></p> <ul style="list-style-type: none"> Discuss signs and symptoms of kerosene oil poisoning Discuss clinical presentation of dhatura poisoning 		
<p><u>Drug addiction & Drug Dependence</u></p> <ul style="list-style-type: none"> List the sources of Amphetamine State the dose of amphetamine required for toxicity and for dependence Describe the Signs and symptoms for amphetamine 		

<p>addiction and toxicity</p> <ul style="list-style-type: none"> Justify management plan for amphetamine addiction and toxicity Define questioned documents List examples of Questioned documents in Forensic investigation <p><u>Opium & its derivatives</u></p> <ul style="list-style-type: none"> List the sources of Opium State the dose of Opium required for toxicity and for dependence Describe the Signs and symptoms for Opium addiction and toxicity Justify management plan for Opium addiction and toxicity 		
<p><u>Injuries and deaths from starvation, cold & heat</u></p> <ul style="list-style-type: none"> Define and describe clinical features of injuries due to <ul style="list-style-type: none"> starvation, cold, hypothermia, frost bite, trench foot heat stroke, exhaustion, cramps Explain postmortem findings and medicolegal importance in deaths due to <ul style="list-style-type: none"> starvation cold heat 		Interactive Lecture
<p><u>Thermal Injuries</u></p> <ul style="list-style-type: none"> Define and classify thermal injuries Explain types of burns and effects of burns 		Interactive Lecture
<p><u>Burns</u></p> <ul style="list-style-type: none"> Calculate the surface area of burns in adults and children Enlist causes of death due to burns Differentiate ante mortem and postmortem burning for medico legal purposes Enlist the postmortem findings and artifacts due to burns Differentiate burns due to dry heat, moist heat and chemicals for medico legal purposes 	Forensic Medicine	Interactive Lecture
<p><u>Forensic electrocution</u></p> <ul style="list-style-type: none"> Describe features of injuries due to various types of electrical current. Causes of death due to electrocution Lightning injuries and lightning deaths 		Small Group Discussion
<p><u>Paediatric Forensic Medicine</u></p> <ul style="list-style-type: none"> Discuss the terminologies related to foetus child destruction <ul style="list-style-type: none"> Infanticide Feticide 		Interactive Lecture

<ul style="list-style-type: none"> ○ Dead born/stillborn baby ○ Maceration ○ Criminal abortion ○ Concealment of birth 		
<p><u>Status of Infant</u></p> <ul style="list-style-type: none"> ● Estimate Foetal age ● Discuss live- born baby ● Analyze Precipitate labor/ Unconscious delivery ● Discuss Criminal causes of death of new born babies i.e. Acts of commission and Acts of omission <p><u>Paediatric death investigation</u></p> <ul style="list-style-type: none"> ● Explain Autopsy on bodies of new born babies ● How to prepare and set out an autopsy report of cause of death to ensure compliance with court rules 		Interactive Lectures
<p><u>Battered baby Syndrome</u></p> <ul style="list-style-type: none"> ● Define battered Baby Syndrome or Caffey's Syndrome ● Explain Etiology of Battered baby Syndrome ● Recognize Clinical Features of a battered baby <p><u>Shaken baby syndrome</u></p> <ul style="list-style-type: none"> ● Discuss injuries seen in Shaken Baby Syndrome with mechanism <p><u>Sudden infant death syndrome (SIDS)</u></p> <ul style="list-style-type: none"> ● Relate SIDS and various possibilities of death with postmortem findings ● State Medico legal importance of SIDS 	Forensic Medicine	Interactive Lectures
<p><u>Alcohol intoxication</u></p> <ul style="list-style-type: none"> ● Describe sources, routes of absorption, metabolism and excretion of alcohol ● Explain various stages of acute alcohol intoxication ● State selective impairment from alcohol intoxication with special reference to human behavior and driving a motor vehicle <p><u>Medicolegal report and examination for drunkenness</u></p> <ul style="list-style-type: none"> ● Describe clinical examination of a drunkard as proof of alcoholic intoxication ● List specimens/tests required to diagnose ● Prepare medico legal report of alleged alcohol intoxication case as a duty medical officer <p><u>Alcoholism</u></p> <ul style="list-style-type: none"> ● Explain chronic alcoholism, treatment and alcohol 		Interactive Lectures

<p>withdrawal syndrome</p> <ul style="list-style-type: none"> • Evaluate postmortem findings of alcoholic intoxication • Describe Methyl Alcohol intoxication, its complications and postmortem findings 		
<p><u>Medicolegal aspects of virginity</u></p> <ul style="list-style-type: none"> • Identify Signs of virginity on medico legal examination • Differentiate between true and false virgin on examination • Defloration along with causes of rupture of hymen • Estimate Age of a torn hymen 		Interactive Lecture
<p><u>Medicolegal aspects pregnancy</u></p> <ul style="list-style-type: none"> • Calculate EDD (Expected date of delivery) • Recognize Signs of pregnancy (presumptive, probable and definite signs) • Diagnose pregnancy in medico legal cases • Explain Motives of feigned pregnancy • Discuss Abnormal forms of pregnancy • Define Legitimacy- Legitimate child as per law 		Interactive Lecture
<p><u>Medicolegal aspects recent delivery</u></p> <ul style="list-style-type: none"> • Recognize Signs of recent delivery in living • Recognize Signs of recent delivery in dead • Identify Signs of remote delivery in living • Inspect Signs of remote delivery in dead • Relate Medico legal aspects of delivery 		
<p><u>Marriage & Nullity of marriage (Forensic Approach)</u></p> <ul style="list-style-type: none"> • Define Marriage • Discuss Consummation of marriage, causes of nullity of marriage and divorce from legal aspects <p><u>Artificial insemination and Surrogacy</u></p> <ul style="list-style-type: none"> • Express knowledge about Artificial Insemination, its types , procedure, precautions in selecting a donor and legal implications, • Discuss Surrogate mother & Surrogate birth- legal and ethical issues <p><u>Abortion</u></p> <ul style="list-style-type: none"> • Define Abortion • Classify its types • Discuss grounds for abortion with special emphasis on pregnancy after rape • Discuss criminal abortion & its type according to Pakistan panel code, 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 	Forensic Medicine	Interactive Lectures

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
COMMUNITY MEDICINE	<p><u>TEXTBOOKS</u></p> <ol style="list-style-type: none"> 1. Community Medicine by Parikh 2. Community Medicine by M Illyas 3. Basic <i>Statistics</i> for the Health Sciences by Jan W Kuzma
FORENSIC MEDICINE	<p><u>TEXT BOOKS</u></p> <ol style="list-style-type: none"> 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. <p><u>REFERENCE BOOKS</u></p> <ol style="list-style-type: none"> 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: Simpson's Forensic Medicine 10th 1991, 11th ed. 1993 11. Taylor's Principles and Practice of Medical Jurisprudence. 15th ed. 1999 <p><u>CDs:</u></p> <ol style="list-style-type: none"> 1. Lectures on Forensic Medicine. 2. Atlas of Forensic Medicine. <p><u>WEBSITES:</u></p> <p>www.forensicmedicine.co.uk</p>
GENERAL MEDICINE	<p><u>REFERENCE BOOKS:</u></p> <ol style="list-style-type: none"> 1. Hutchison's Clinical Methods, 23rd 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/
PEDIATRICS	<u>TEXT BOOK:</u> 1. Basis of Pediatrics (8 th Edition Pervez Akbar)
PHARMACOLOGY	A. <u>TEXTBOOKS</u> 1. Lippincott Illustrated Pharmacology 2. Basic and Clinical Pharmacology by Katzung

ADDITIONAL LEARNING RESOURCES

<u>Hands-on Activities/ Practical</u>	Students will be involved in Practical sessions and hands-on activities that link with the CVS II module to enhance learning.
<u>Labs</u>	Utilize the lab to relate the knowledge to the specimens and models available.
<u>Skills Lab</u>	Provides the simulators to learn the basic skills and procedures. This helps build confidence when approaching patients in real settings.
<u>Videos</u>	Familiarize the student with the procedures and protocols to assist patients.
<u>Computer Lab/CDs/DVDs/Internet Resources:</u>	To increase knowledge and motivation of students through the available internet resources and CDs/DVDs. This will be an additional advantage to meaningful learning.
<u>Self Learning</u>	Self Learning is when students seek information to solve cases, read through different resources and discuss among peers, and with the faculty to clarify the concepts.

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 'zeromark'. 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 1-5.5	INFECTIOUS DISEASES MODULE	2 nd Dec 2019
		7 th Jan 2020
WEEK 1-4.5	HEMATOLOGY MODULE	8 th Jan 2020
		4 th Feb 2020
WEEK 1-4.5	RESPIRATORY MODULE	6 th Feb 2020
		21 st March 2020
WEEK 1-4	CVS MODULE	24 th March 2020
		18 th April 2020
WEEK 1-8	GIT & HEPATOBILIARY MODULE	20 th April 2020
		13 th June 2020