

Dow University of Health Sciences



GIT & LIVER II STUDY GUIDE 2023

Third Year MBBS

S.No	TABLE OF CONTENTS	Page no.
1	Introduction to Study Guide	3
2	Five Year Curricular Organization	5
3	Overview	6
4	Integrated Module Committee	7
5	Module description	8
6	Rationale	8
7	Learning Outcomes, Objectives and T/L Strategies	8-16
8	SBL Topics and Objectives	17
9	Study Skills	17
10	Learning Resources	18
11	Assessment Methods	19

INTRODUCTION

WHAT IS A STUDY GUIDE?

A study guide provides a focus for different educational activities in which the students are engaged. It equips students with information on the topic of study and assists in management of student learning. Furthermore, it imparts relevant information about the organization of the module and thus helps students organize their educational activities accordingly. Another important purpose of a study guide is the dissemination of information about rules and policies and teaching and assessment methods.

HOW DOES A STUDY GUIDE HELP LEARNERS?

- Includes information on organization and management of the module.
- Advises the learners about representatives (from various departments) who can be contacted in case of need.
- Defines the objectives which are expected to be achieved at the end of the module.
- Elaborates the learning strategies which will be implemented during the module.
- Informs learners about the learning resources in order to maximize their learning.
- Provides information on the assessment methods that will be held to determine every student's achievement of objectives.

CURRICULUM MODEL:

Integrated modular curriculum is followed at Dow University of Health Sciences for MBBS program. This implies that instead of studying basic and clinical sciences separate and apart, students will experience a balanced and integrated combination of basic and clinical sciences in the form of a system –based modules.

The modular curriculum followed by Dow University of Health Sciences is integrated both in the vertical and the horizontal directions. However in order to prepare the students for clinical teaching with a sound background knowledge of the basic sciences, the curriculum has been divided in three spirals.

The three spirals are:

1. Spiral -1 Basic Sciences
2. Spiral -2 Clinical Sciences
3. Spiral -3 Integrated Supervised Practical Training

The Basic Sciences Spiral is spread over the first two years and clinical sciences spiral is distributed over the next two years. In the final year students are given practical hands on training in the role similar to that of a shadow house officer. They are encouraged to refer to the theoretical teaching of the first four years for their practical training. The whole curriculum is divided into modules, each module being related to a particular system for example. Cardiovascular 1 module is in the Basic Sciences Spiral and Cardiovascular 2 module is in the Clinical Sciences Spiral.

TEACHING & LEARNING METHODOLOGIES:

The following teaching/ learning methods may be used to facilitate the learning process:

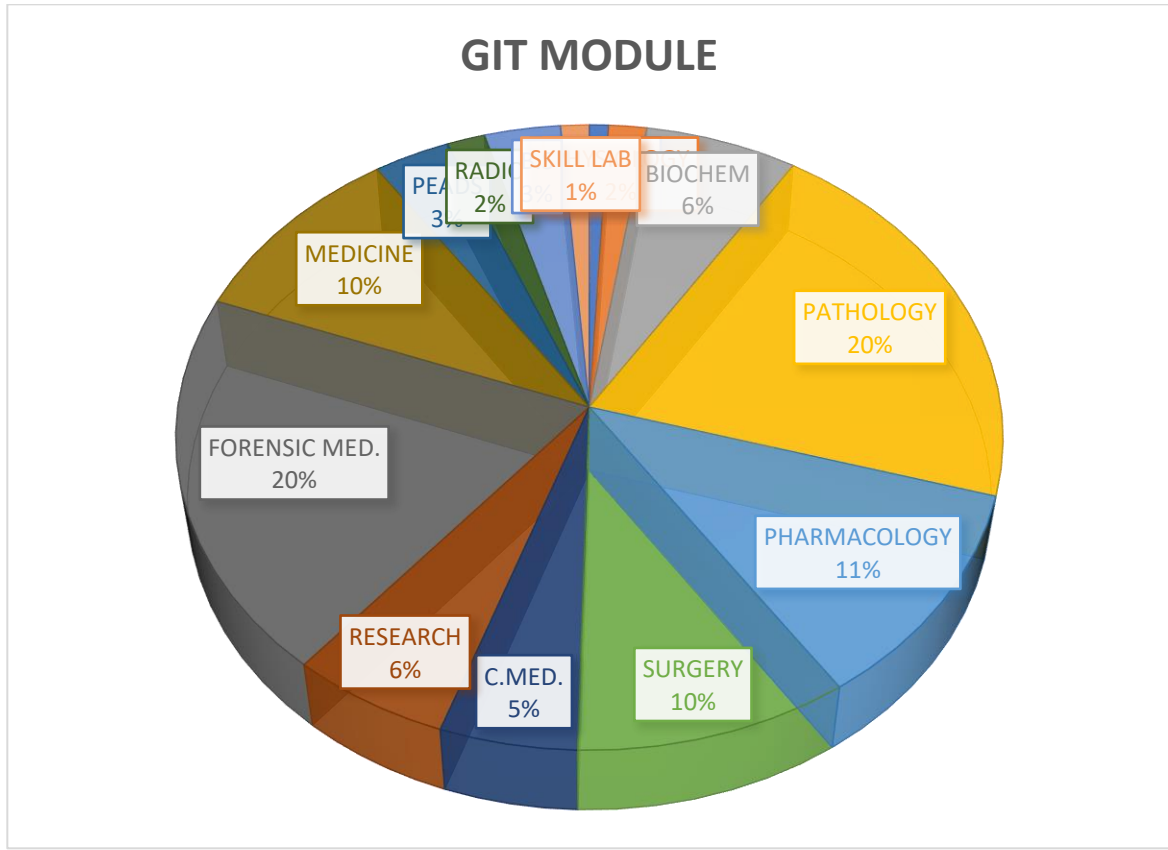
1. **Interactive Lectures:** Lectures are considered as an efficient means of transferring knowledge to large audiences.
2. **Small Group Discussion:** Small group discussion such as case- based learning (CBL) is a form of and interactive learning which helps students develop discussion skills and critical thinking.
3. **Practical:** Practical related to Basic Sciences are held to facilitate student learning.
4. **Skills:** Skills sessions are scheduled parallel with various modules at fully equipped skills lab in which students observe and learn skills relevant to the respective modules.
5. **Self-Directed Learning:** Students have a measure of control over their own learning. They diagnose their needs, set objectives in accordance to their specific needs, identify resources and adjust their pace of learning

5YEAR CURRICULARORGANIZATION

Spiral	year	Modules				
First Spiral	I	FND1- Foundation Cell, Genetics & Cell Death (Basics of Anatomy, Physiology, Biochemistry, Gen. Pathology, Gen. Pharmacology, Community Medicine & Behavioral Sciences, 9 Weeks		HEM1- Blood Module Immunity, Inflammation, Tissue repair, Antimicrobials & Neoplasia 9 Week		
		LCM1- Locomotion Bones, Joints, Nerves & Muscles, 9weeks		RSP1- Respiratory System 6 weeks	CVS1- Cardiovascular System 4 weeks	
	II	NEU1- Nervous System 8 weeks		HNN1- Head & Neck &Special 6 weeks	END1- Endocrinology 5weeks	
		GIL 1-GIT and Liver 8 weeks		EXC1- Renal and Excretory System	REP1- Reproductive System 5 weeks	
Second Spiral	III	Foundation 2 2 weeks	IDD 1- Infectious diseases 6 weeks	HEM2- Hematology 5 weeks	RSP2- Respiratory System 5 weeks	CVS2- Cardiovascular System 4 weeks
		GIL 2-GIT and Liver (including Nutritional Disorders) 9 weeks			EXC2- Renal & Excretory System 5 weeks	END2- Endocrinology 5 weeks
	IV	ORT2- Orthopedics, Rheumatology, Trauma 7 weeks		REP2- Reproductive System 8 Weeks	PMR-Physical Medicine & Rehabilitation DPS-Dermatology Plastic Surgery / Burns GEN-Genetics 6 weeks	
		NEU2- Neurosciences and Psychiatry 8 weeks		ENT* 4 weeks	OPHTHALMOLOGY/EYE 4 weeks	
Third Spiral	V	Clinical Rotation 9:30 to 3:00 (with Ambulatory, Emergency, Intensive care) In Medicine, Pediatrics, Cardiology and Neurology units <ul style="list-style-type: none"> ▪ Lecture on problem-based approach, twice a week ▪ Ward tutorial twice a week ▪ Student research presentation once a week 			Clinical Rotation 9:30 to 3:00 (Inpatient, Ambulatory, Emergency, Intensive care and Operation Theatres) In Surgery, Gynecology & Obstetrics, Orthopedics and Neurosurgery. <ul style="list-style-type: none"> ▪ Lecture on problem based approach, twice a week ▪ Ward tutorial twice a week ▪ Student research presentation once a week 	

OVERVIEW

Program	MBBS	
Year	Three	
Module Title	GIT and Liver	
Module Code	GIL-2	
Duration	8 weeks	
Behavioral Sciences	Anatomy	1
	Physiology	2
	Biochemistry	10
	Pathology	25
	Pharmacology	13.5
	Forensic Medicine	24
	Community medicine	6
	Research	7
	Surgery	12
	Pediatrics	4
	Gastroenterology	12
	Radiology	2
	Behavioral sciences	4
Skill Lab	1.5	
Total Hours	GIT & LIVER Module	124



INTEGRATED MODULE COMMITTEE

RESPONSIBILITIES	NAMES	DESIGNATION	EMAILS
Chief Module coordinator	Prof Naheed Khan	Chairperson Anatomy	naheed.khan@duhs.edu.pk
Coordinator	Dr. Mehreen Fatima	Assistant Professor	mehreen.fatima@duhs.edu.pk
Co-coordinators	Dr. Sadia Iqbal	Assistant Professor	saadia.iqbal@duhs.edu.pk

MODULE DESCRIPTION:

This module has been designed for students to introduce them to the basic concepts of GIT and Liver diseases. This module includes Pathology, Microbiology, Pharmacology, Forensic Medicine, Community medicine, Surgery, Gastroenterology, Pediatrics and Behavioral sciences, Lectures, tutorials, small group sessions including SBL and practicals are important components of this module. Your co-operative and teamwork abilities will be improved by working in different teams. You will be able to develop problem solving skills to apply your medical knowledge to practical situations by means of group and individual tasks. This study guide has been developed to assist you and keep you focused to achieve your goals.

Welcome to the GIT & Liver module and it is hoped that students will be able to achieve the desired module learning outcomes.

RATIONALE:

Gastrointestinal tract and liver are essential for digestion absorption and assimilation of food and production of energy generating metabolites. Liver is central to all metabolic activities of human body. A large number of disorders afflict both GIT and liver which affect their function. Understanding the pathogenesis, recognizing their presentation, ordering and interpreting investigations and management requires a sound understanding of these systems. With the base formed in the GIT module in the first, basic sciences spiral, the student in the current module shall be able acquire the understanding of diseases of GIT and liver and their management.

LEARNING OUTCOMES

Medical graduate after completion of 5 years training program should be able to:

- Describe pathogenesis & clinical presentations of common gastrointestinal disorders
- Evaluate nutritional disorders in pediatric & adult patients.
- Perform physical examinations of gastrointestinal system.
- Take history & formulate appropriate plan of investigations for attaining differential diagnosis
- Analyze findings of history, examinations & investigations for diagnosis.
- Practice basic principles of management of nutritional & gastrointestinal disorders.
- Discuss preventive measures & prognosis for counseling the patients.

ANATOMY

Learning Objectives:**Topics:****Lectures: (1 hour each)**

- Overview structure and function of GIT

PHYSIOLOGY**Learning Objectives:****Topics:****Lectures: (1 hour each)**

- Overview secretory, digestive and absorptive function of GIT
- Overview of motility nervous control and blood circulation of GIT

BIOCHEMISTRY**Learning Objectives:****Topics:****Lectures: (1 hour each)**

- Overview dietary carbohydrate & glycemic index
- Overview of Dietary Fats & lipids, in relation to rancidity & per oxidation
- Overview of dietary proteins, malnutrition & nitrogen balance
- Hypo-and Hyper-Vitaminosis & its Clinical Correlations
- Overview of Bio molecular function of Liver
- Differentiate between pre-hepatic, Hepatic & post-hepatic causes of Jaundice
- Nutritional requirements for Newborn, Young & Elderly subjects
- Nutritional energy balance
- Nutrition care plan development & nutrition toxicology
- Medical Nutrition Therapy

PATHOLOGY**Learning Objectives:**

- Describe the Pathophysiology, clinical features and histological findings of the proliferative and inflammatory lesions causing ulcers in tongue and oral cavity.
- Explain the features of neoplastic lesions of the tongue.

- Explain the etiology and diagnostic features of pre-neoplastic & neoplastic conditions of esophagus, stomach, and intestines.
- Describe morphology, histopathology & pathogenesis of pre-neoplastic & neoplastic conditions of esophagus, stomach and intestines.
- Enlist the features and differential diagnosis of malabsorption syndromes and inflammatory bowel disease.
- Characterize the infections of the gastrointestinal tract and describe their differential diagnosis.
- Describe the features of infectious diseases of the liver and gall bladder.
- Explain the characteristics of non-infectious, non-neoplastic liver and gall bladder diseases.
- Characterize alcoholic and non-alcoholic liver disease.
- Explain the causes and features of liver cirrhosis and circulatory and metabolic disorders of the liver.

Topics:**Lectures: (1 hour each)**

- Ulcero Inflammatory, Proliferative and Neoplastic Lesions of Oral Cavity
- Tumor of Esophagus
- Pathogenesis of Gastritis and Peptic Ulcer (H.Pylori)
- Tumors of Stomach
- Malabsorption Syndrome (celiac disease)
- Infective Agents of Dysentery & Diarrhea
- Enterocolitis & Ischemic colitis
- Inflammatory Bowel Diseases
- Tumors of Small & Large Intestine-I
- Tumors of Small & Large Intestine-II
- Overview of Hepatic Pathology and Symptoms of Hepatic Disease
- Infectious Disorders of Liver
- Tumors of Livers
- Alcoholic and Non- Alcoholic Liver Disease
- Cirrhosis, Portal Hypertension and Circulatory Disorders of Liver
- Pathology of Gall Bladder

Practicals: (1.5 Hour each)

- Histopathology of Oral Cavity, Salivary Glands & Esophageal Disorders
- Histopathology of Gastric Diseases + CBL Perforation of the Duodenum
- Stool D/R & Culture + CBL Celiac Disease
- Histopathology of Intestinal Tumors + CBL Histopathology of Intestinal Tumors
- Lab Diagnosis of Hepatitis

SURGERY**Learning Objectives:**

- To understand etiology, pathophysiology, clinical features, investigations and management of benign and malignant diseases of esophagus
- To understand etiology, pathophysiology, clinical features, investigations and management of benign and malignant diseases of stomach
- To understand the causes of small and large bowel obstruction, pathophysiology of dynamic and adynamic intestinal obstruction.
- To understand etiology, pathophysiology, clinical features, investigations and management of benign and malignant diseases colorectal carcinoma
- To understand etiology, pathophysiology, clinical features, investigations and management of intestinal obstruction
- To understand the causes of small and large bowel obstruction, pathophysiology of dynamic and adynamic intestinal obstruction.
- To understand etiology, pathophysiology, clinical features, investigations and management of obstructive jaundice and pancreatic tumors
- To understand etiology, pathophysiology, clinical features, investigations and management of pancreatitis
- To understand etiology, pathophysiology, clinical features, investigations and management of gall stones
- To understand etiology, pathophysiology, clinical features, investigations and management of gall bladder cancer
- To understand etiology, pathophysiology, clinical features, investigations and management of tuberculosis abdomen
- To understand etiology, pathophysiology, clinical features, investigations and management of acute abdomen
- To understand the common anal diseases with reference to etiology, pathophysiology, clinical features, investigations and management
- To understand the causes types clinical features, management, and surgical options for abdominal hernias

Topics:**Lectures (1 hour each)**

- Surgical Causes presentation and management of dysphagia & CA esophagus
- Management of intestinal obstruction and paralytic ileus
- Management of acute abdomen and peritonitis.
- Diagnosis and management of pyloric stenosis /CA stomach
- Surgical management of CA colon
- TB abdomen
- Cholelithiasis presentation sequelae and management
- Management of gallbladder cancer
- Management of acute and chronic Pancreatitis
- Management of obstructive jaundice & pancreatic Tumors
- perianal abscess, fistula in ano and hemorrhoids
- Ventral Hernias Workup and management

PHARMACOLOGY**Learning Objectives:**

- Describe mechanism of action, types, indications & side effects of systemic antacids & non systemic antacids
- Describe Mechanism of action, types, indications & side effects of prokinetic agents
- Explain mechanism of action, indication and side effects of Mucosal protective agents, Sucralfate, Misoprostol & colloidal bismuth compounds
- Explain mechanism of action, types, indications & side effects of PPI receptor antagonists & Proton pump inhibitors
- explain Triple & quadruple therapy
- Describe mechanism of action of drugs used in management of hepatitis & related complication
- Describe types & mechanism of action of drugs used in constipation
- Explain the physiology basis of vomiting and the pharmacological basis of anti-emetic drugs
- Describe mechanism of action, side effects, adverse effects of pharmacological management of diarrheas

Topics:**Lectures: (1 hour each)**

- H₂-receptor blockers & proton-pump inhibitors
- Eradication H.pylori infection
- Mucosal protecting agents
- Anti-emetics/prokinetic agents
- Drug treatment of Diarrhea
- Drug treatment of irritable bowel syndrome
- Drugs used to treat constipation
- Treatment of Hepatitis-I
- Treatment of Hepatitis-II

Practicals: (1.5 hour each)

- Treatment of peptic-ulcer disease and H pylori
- Treatment of constipation & Diarrhea
- Mucosal protecting agents

RESEARCH / COMMUNITY MEDICINE.**Learning Objectives:**

- Analyze important Nutrition related problems in Pakistan
- Enlist micronutrient deficiency disorders in Pakistan and discuss their prevention and control strategies
- Conduct Nutritional surveillance (Assessment of nutritional status of a community)
- Recognize the role of diet and nutrition in life style modification
- Analyze the micro nutrient deficiencies in Pakistan
- Advise diet in pregnancy and lactation
- Describe Malnutrition disorders/ Potein Energy Malnutrition: Marasmus and Kwashiorker
- Monitor Growth of children under five years of age with various indicators (WFA, HFA, WFH, OFC, MAC) and classifications (Gomez, Welcome, Waterlow, and WHO classification).

Topics:**Lectures: (1 Hour each)**

- Introduction to research
- Literature search
- Objective writing, Research question and hypothesis
- Introduction writing
- Methodology with Study design
- Sampling technique & Questionnaire development 1
- Role of diet and nutrition in life style modification
- Micro nutrient deficiencies in Pakistan
- Sampling technique & Questionnaire development II
- Diet in pregnancy and lactation
- Malnutrition disorders: PCM
- Growth monitoring

FORENSIC MEDICINE**Learning Objectives:**

- Explain Motor vehicle ordinance 1965 (Relevant sections – Medical examination)
- Classify: Road traffic/Railway traffic/Air crash accidents
- Recognize and Interpret injuries to the driver/pilot/passengers/pedestrians
- Interpret features of special trauma such as Custodial torture and death.
- Interpret and Explain trauma to Cranium and its contents & Spine and its contents and their Biomechanics.
- Define & classify thermal injuries.
- Explain Injuries due to change in temperature: Various types of burns & their recognition in living and dead.
- Explain mechanism of death due to Electrocutation and Lightning and its patho-physiology
- Explain Radiation burns
- Explain Medico legal aspects of thermal injuries
- Interpret & Explain mechanism of Starvation and its patho-physiology in living & dead.

Topics:**Lectures: (1 hour each)**

- Regional Injuries I Head Injuries
- Regional Injuries II Intracranial hemorrhages
- Regional Injuries III Brain Injuries
- Regional Injuries IV Chest and abdomen Injuries
- Abdominal Injuries/ Road traffic accidents
- Special trauma/ Thermal Injuries Burns, scalds
- Environmental trauma

- Therapeutic poisons
- Corrosive Poisoning, I Mineral acids
- Corrosive Poisoning II Organic Acids
- Corrosive Poisoning III Cyanide
- Metallic poison I Arsenic
- Custodial Death
- Metallic poison II Lead/ Mercury
- Alcohol

Practical's: (1.5 hour each)

- Metallic and non-metallic irritants
- Benzodiazepine, sedatives and hypnotics
- Analytical techniques Spectroscopy and chromatography DNA technique
- Demonstration of gastric lavage its techniques.
- Preservation and dispatch of the exhibits in a suspected case of poisoning

GASTROENTEROLOGY**Learning Objectives:**

- Describe what is upper GI bleed
- Determine different etiologies of upper GI bleeding.
- Describe different clinical presentation of the disease.
- Explain signs and symptoms of Upper GI Bleeding
- Describe how to investigate a patient with upper GI bleed.
- Explain basic treatment plan for Upper GI Bleeding
- Evaluate the patient according to clinical findings.
- Discuss the risk factors for disease
- Perform surveillance for complications
- Summarize the general management steps and management of the complications
- Define malabsorption
- Define celiac disease
- Discuss the signs and symptoms of celiac disease
- Outline the investigations to diagnose celiac disease
- Discuss the management plan and counsel patients with celiac disease.
- Recognize the causes of gastroenteritis on history taking
- Describe inflammatory & non-inflammatory diarrhea
- Elucidate available diagnostic modalities and their appropriate use
- Discuss key Steps in cholera management especially rehydration protocols
- Identify conditions that are commonly associated with IBS.
- Review the pathogenesis and pathophysiology of IBS.
- Discuss risk factors for the development of IBS and underlying etiology.
- Describe the assessment of patients with suspected IBS, including presenting signs and symptoms, testing, and clinical diagnostic criteria.

- Identify conditions that should be included in the differential diagnosis of IBS.
- Discuss the role of laboratory studies and alarm features in reaching a diagnosis of IBS.
- Evaluate the role of nonpharmacologic & pharmacological therapies for the treatment of IBS.
- Define Acute hepatitis & Acute liver failure.
- Know the various etiological agents for acute hepatitis & acute liver failure.
- Recognize various clinical features of acute hepatitis and fulminant hepatic failure.
- Assess the clinical severity of acute liver failure.
- Outline the investigations in a patient presenting with acute hepatitis & Acute liver failure.
- Manage patients with acute hepatitis & acute liver failure.
- Describe the clinical and laboratory assessment of HBV and HCV infected persons
- Discuss Antiviral drugs available for the treatment of HBV and HCV infection
- Outline the treatment and follow-up strategies recommended for HBV and HCV.
- Define ascites.
- Explain the concept of SAAG.
- Explain concepts and causes of hepatorenal syndrome & hepatic encephalopathy.
- Discuss management strategies of hepatorenal syndrome & hepatic encephalopathy.
- Describe different types of liver masses
- Determine different etiologies of liver abscesses.
- Describe different clinical presentation of the disease.
- Explain signs and symptoms of Liver abscess and other liver masses
- Describe how to investigate a patient with liver abscess and mass in liver
- Differentiate different liver masses from liver abscess.
- Explain basic treatment plan for liver abscess and masses

Topics:**Lectures: (1 hour each)**

- GERD, esophagitis, Barrett's, hiatus hernia
- Diagnosis and management of upper GI bleeding
- Causes and clinical presentation and management of malabsorption syndrome/ celiac disease
- Acute gastroenteritis
- Irritable bowel syndrome
- clinical presentation and outline of management of hepatitis B & C
- Management of acute hepatitis & fulminant hepatic failure
- Ascites and concept of SAAG, hepatic encephalopathy & hepatorenal syndrome
- Liver abscess & tumors

PAEDIATRICS.**Topics:**

Lectures (1hour each)

- Causes of Vomiting, Regurgitation / Dysphagia in Children GERD
- Causes and clinical presentation and management of Chronic diarrhea, mal-absorptions, IBD and lower GI Motility disorders
- Storage & Metabolic disorders / acute Hepatic Failure / Hepatitis
- Biliary Atresia / Cholestatic Jaundice

RADIOLOGY

Topics:

Lectures (1hour each)

- Recognition of normal & abnormal GIT Structure
- Recognition of normal and abnormal Hepatobiliary structures on imaging

SKILL LAB

Topics:

Lectures (1.5 hour each)

- Abdominal Examination

BEHAVIOURAL SCIENCES

Topics:

Lectures (1 hour each)

- Understanding MUS
- Research Methods in Psychiatry
- Breaking Bad News
- Communication Skills

Study Skills

1. Abdominal Examination

LEARNING OBJECTIVE

At the end of the session students should be able to:

- Enumerate the steps of examination of Abdomen
- To demonstrate correct technique of Auscultation of Gut sounds

SBL

GIL2 Sbl 1

- Define of dysphagia.
- Enlist the causes of dysphagia.
- Enumerate differential diagnosis of dysphagia.
- Discuss relevant diagnostic workup and management of dysphagia.

GIL2 Sbl 2

- Recognize a patient of Hepatitis B positive
- Discuss its complications,
- Discuss the relevant investigations and its management.

The contents are subjected to be altered according to requirement of academic calendar

Learning Resources

PATHOLOGY

- Robbins Basic Pathology Kumar & Abbas 9th Edition
- Robbins & Cotran Pathologic Basis Of Disease Kumar & Abbas & Aster 9th Edition

COMMUNITY MEDICINE

- Public Health And Community Medicine Shah, Ilyas, Ansari 7th Edition

PHARMACOLOGY

- Lippincott's Illustrated Review Pharmacology Karen Whalen 6th Or Latest Edition
- Basic And Clinical Pharmacology Bertram G. Katzung 11th Edition

FORENSIC MEDICINE

- Principles And Practice Of Forensic Medicine Nasib R. Awan 1 St Edition

MEDICINE

- Principles & Practice Of Medicine Davidson's 22nd Or Latest Edition
- Essentials Of Kumar And Clark's Clinical Medicine Kumar & Clark 9th Or Latest Edition
- Macleod's Clinical Examination Douglas & Nicol & Robertson 13th Or Latest Edition
- Hutchison's Clinical Methods William M Drake & Michael Glynn 23rd Or Latest Edition

PAEDIATRICS

- Nelsons's Essentials Of Pediatrics Marc dante & Kliegman 7th Or Latest Edition

ASSESSMENT

Assessment will be done in two parts:

At the end of module

- Module Exam (Theory) -20%
- Module Exam Practical Internal Evaluation- 20%

At the end of Year

- Annual Exam (Theory) -80%
- Annual Exam (ospe, Viva)-80%

MCQs (Multiple choice questions), OSCE (Objective Structured Clinical Exam) and structured vivas will be the main assessment tool.