AYUB MEDICAL COLLEGE ABBOTTABAD

GASTROINTESTINAL & HEPATOBILIAR II MODULE

4TH YEAR MBBS

BLOCK:K

DURATION: 9 WEEKS

SESSION: 2024

STUDENT NAME

_____

DISCLAIMER

- Developing a study guide is a dynamic process and undergoes iteration according to the needs and priorities.
- This study guide is subjected to the change and modification over the whole academic year.
- However, students are advised to use it as a guide for respective modules.
- It is to declare that the learning objectives (general and specific) and the distribution of assessment tools (both theory and practical) are obtained from Khyber Medical University, Peshawar. These can be obtained from: https://kmu.edu.pk/examination/guidelines
- The time tables are for guiding purpose. It is to advise that final timetables are always displayed over the notice boards of each lecture hall.
- Students are encouraged to provide feedback via coordinator.

Contents

1 Module Committee:

1.	Prof. Dr. Umar Farooq	CEO & Dean	
2.	Prof. Dr. Irfan U. Khattak	DME	Director
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8.	Dr. Touqeer Ahmed	Co-developer	Medicine
9.	Dr.Ali Raza	Co-developer	Peadiatrics
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2 What IS A Study Guide?

It is an aid to Inform students how student learning program of the module has been organized, to help students organize and manage their studies throughout the module and guide students on assessment methods, rules and regulations.

2.1 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.

2.2 Module objectives.

- Provides a list of learning resources such as books, computer-assisted learning programs, weblinks, and journals, for students to consult in order to maximize their learning.
- Highlights information on the contribution of continuous on the student's overall performance.
- Includes information on the assessment methods that will be held to determine every student's performance.

2.3 Achievement of objectives.

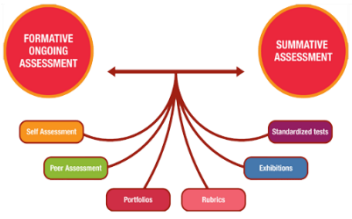
- Focuses on information pertaining to examination policy, rules and regulations.

3 Recommended List Of Icons

Introduction To Case

For Objectives

Critical Questions



Assessment

Resource Material

4 Table Of Specification

S. No	Themes	Topics covered	Duration Weeks
1	Difficulty in swallowing	Oral cavity Salivary glands Esophagus	1
2	Pain epigastrium	Stomach and duodenum	1
3	Pain right upper abdomen	Liver Gall bladder Pancreas	2
4	Diarrhea and constipation	Small intestine	3
5	Bleeding Per Rectum	Large intestine	1
6	Practical work		1

5 Organization of Module

5.1 Introduction:

Gastro-intestinal-II and Hepatobiliary-II Module is designed to provide both basic, clinical knowledge and skills to the medical students. The modules include sessions on important pathological diseases of gastrointestinal system and hepatobiliary system. The relevant clinical subjects are also taught under the shared themes with pharmacological explanation. The medical and surgical management and preventive aspect of the diseases is also addressed.

5.2 Rational :

A thorough understanding of the diseases of the gastrointestinal tract and hepatobilary system is essential as more than 50% cases in medical and surgical OPD are related to these systems

6 Learning Objectives

6.1 General Learning Outcomes

By the end of the module, students of 4th year MBBS should be able to:

1. Describe the etiology, pathogenesis, morphology, clinical features, laboratory diagnosis, medical and surgical management of diseases of GIT & hepatobiliary system.
2. Interpret the liver function tests in different hepatic diseases.
3. Describe the basic and clinical pharmacology of drugs used in GIT & hepatobiliary diseases.
4. Write prescriptions for common GIT & hepatobiliary disorders.
5. Describe medico legal aspects of abdominal trauma.
6. Describe medico legal aspects of vegetable acid, corrosive and irritants poisoning
7. Describe the epidemiology and prevention of malnutrition and viral hepatitis.
8. Analyze demographic processes in context of public health care.

6.2 Specific learning objectives

Theme-1 (Difficulty in swallowing)

Subject	Topic	MIT	Learning objective *At the end of year-4, the students of MBBS will be able to:*
Pathology	Salivary Gland (Inflammation and tumors)	LGF	Classify the inflammatory and neoplastic diseases of salivary gland.
			Describe the etiology, morphology and clinical presentation of inflammatory and neoplastic diseases of salivary gland.
	Esophagus	LGF	Classify esophagitis.
			Describe the etiology, pathophysiology, morphology, clinical presentation and complications of esophagitis
			Classify esophageal tumors.
			Describe the etiology, pathogenesis, morphology, clinical presentation, diagnosis and complications of esophageal tumors
Medicine	Oral Cavity Diseases	LGF	Discuss the etiology of stomatitis and Aphthous ulcers
			Discuss the clinical features of stomatitis and Aphthous ulcers
			Discuss the investigations of stomatitis and Aphthous ulcers
			Devise a management plan for stomatitis and Aphthous ulcers
	Esophagus: Esophageal motility disorders	LGF	Discuss the causes of esophageal motility disorders
			Discuss the clinical features of esophageal motility disorders
			Discuss the relevant investigations of esophageal motility disorders
			Devise a management plan of esophageal motility disorders
	1) Esophagitis	LGF	Discuss the etiology of esophagitis
			Discuss the clinical features of esophagitis
			Discuss the appropriate diagnostic testing for esophagitis
			Devise a management plan for esophagitis
	2) Cardia	LGF	Discuss the etiology, clinical features,

	achalasia		investigations and management of Cardia achalasia
	3) Gastro Esophageal reflux disease (GERD)	LGF	Discuss the risk factors, etiology, clinical features, investigations, complications and management of GERD
ENT	Cleft lip and palate	LGF	Discuss the etiology, clinical features, investigations, complications and management of cleft lip and palate
	Pharyngitis and Tonsillitis	LGF	Discuss the etiology, clinical features, investigations, complications and management of Pharyngitis and acute Tonsillitis
			Explain the clinical features, and management of peritonsillar abscess
			Discuss the classification, etiology, clinical features, investigations, and management of Chronic Tonsillitis
	Oropharyngeal cancer	LGF	Discuss the classification, etiology, clinical features, investigations, and management of oropharyngeal cancers
	Salivary glands	LGF	Classify diseases of the salivary glands
			Explain the etiology, clinical features, investigations and management of Mumps, and Sialadenitis
			Explain the etiology, clinical features, investigations and management of salivary ducts stones
	Dysphagia	LGF	Explain the types, etiology, clinical features, investigations and management of a patient with dysphagia
Surgery	Tumors of the esophagus	LGF	Discuss the classification, etiology, clinical features, investigations, staging and management of Esophageal cancers
	Para-esophageal hiatus hernia	LGF	Explain the etiology, clinical features, investigations and management of Para-esophageal hiatus hernia
PRIME/MEDICAL EDUCATION	Social accountability	LGF	Explain the concept of social accountability
			Differentiate between different social accountability issues
Theme-2 (Epigastric pain)			

Pathology	Gastritis	LGF	Explain the types, etiology, microscopic morphology and clinical features of Gastritis
	Peptic ulcers	LGF	Discuss the etiology, pathophysiology, morphology, complications and lab. diagnosis of peptic ulcer disease
			Discuss the role of H.Pylori & campylobacter in the causation of Peptic ulcer disease
			Discuss the morphology, virulence factors and lab diagnosis of H. Pylori & campylobacter
	Gastric polyps and tumors	LGF	Classify gastric polyps and tumors
			Describe the pathogenesis, morphology, lab diagnosis and complications of gastric polyps and tumors.
Medicine	Gastritis	LGF	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis
	Peptic ulcer disease	LGF	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis
			Describe H.pylori eradication therapy protocols in the treatment of peptic ulcer disease
	Upper GI Bleeding	LGF	Explain the etiology, clinical features, investigations and management of a patient with upper GI bleeding
			Describe the indications and procedures of pharmacological and endoscopic treatment of variceal bleeding
Pharmacology	Anti-emetics	LGF	Classify anti-emetic drugs
			Describe the mechanism of serotonin antagonists as anti-emetic agents.
			Enlist the clinical uses (anti-emetic) and adverse effects of serotonin antagonists.
			Describe the pharmacological basis of serotonin antagonists in chemotherapy induced vomiting
			Describe the mechanism of H1-antagonists as anti-emetic agents.
			Enlist the clinical uses (anti-emetic) of H1-antagonists.
			Describe the mechanism of anticholinergic drugs as anti-emetic agents.
			Enlist the clinical uses (anti-emetic) of

			anticholinergic drugs.
			Describe the pharmacological basis of scopolamine in motion sickness
			Describe the anti-emetic mechanism of D2-receptor blockers (Metoclopramide & Domperidone).
			Enlist the clinical uses (anti-emetic) and adverse effects of D2-receptor blockers.
			Compare the pharmacological features of metoclopramide & Domperidone.
			Describe the drug interaction of metoclopramide with levodopa.
			Describe the mechanism of neuroleptics as anti-emetic agent.
			Enumerate the clinical uses (anti-emetic) of neuroleptic drugs.
			Describe the antiemetic mechanism of benzodiazepines.
			Describe the antiemetic mechanism of glucocorticoids.
			Enumerate the indications (anti-emetic) of glucocorticoids.
			List anti-emetic drugs used in morning sickness.
			List anti-emetic drugs used in chemotherapy induced vomiting.
	Drugs used in the treatment of variceal bleeding	LGF	Enlist the drugs used in variceal hemorrhage
			Describe the mechanism of somatostatin and octreotide in variceal hemorrhage
			Describe the mechanism of Vasopressin & Terlipressin in variceal hemorrhage
			Describe the mechanism of beta-blockers in variceal hemorrhage
	Drugs used in the treatment of Peptic ulcer disease and Gastritis	LGF	Classify the drugs used in Peptic ulcer disease
			Describe the mechanism of action, indications and adverse effects of proton pump inhibitors (PPIs).
			Describe the pharmacokinetics of PPIs with special emphasis on time of administration

			Describe the drug interaction of Omeprazole & H2 blockers with Sucralfate
			Describe the drug interaction of Omeprazole with Clopidogrel
			Describe the mechanism of action, indications and adverse effects of H-2 blockers.
			Compare/differentiate H2-blockers in terms of bioavailability and involvement in drug interactions
			Describe the mechanism of action, indications and adverse effects of Antacids.
			Enumerate the properties of an ideal antacid.
			Describe the pharmacokinetics of antacids with special emphasis on time of administration
			Describe the drug interactions of antacids with tetracyclines, iron and fluroquinolones.
			Describe the mechanism of sucralfate in the treatment of peptic ulcer
			List the indicationsof sucralfate.
			Discuss the drug interaction of sucralfate with digoxin, ketoconazole and tetracyclines.
			Describe the pharmacokinetics of sucralfate with special emphasis on time of administration.
			Describe the mechanism, indications and adverse effects of bismuth compounds.
			Describe the role of anticholinergic drugs in peptic ulcer.
			List the indications (anti-peptic ulcer) of anticholinergic drugs.
			Discuss the pharmacological basis for the use of prostaglandin analogues (Misoprostol) in the treatment of peptic ulcer.
			List the contraindications of misoprostol.
			Describe triple therapy for the eradication of H.pylori infection.
			Describe quadruple therapy for the eradication of H.pylori infection
Forensic medicine	Common house-hold poisons	LGF	Enlist, domestic, medicinal and garden poisons commonly used
	Corrosives/ Mineral acids	LGF	Enlist different commonly used mineral acids
			Enumerate physical appearance and uses of Sulphuric acid

			Describe mechanism of action, fatal dose & period of Sulphuric acid
			Describe clinical features and treatment of Sulphuric acid burns
			Describe postmortem appearance and forensic importance of Sulphuric acid burns
			Enumerate physical appearance and uses of nitric acid
			Describe mechanism of action and fatal dose & period of nitric acid
			Describe clinical features and postmortem appearance of nitric acid burns
			Enumerate physical appearance and uses of hydrochloric acid
			Describe clinical features and postmortem appearance of hydrochloric acid burns
	Corrosives/ Alkali	LGF	Enlist different commonly used alkali
			Enumerate physical appearance and uses of alkali
			Describe mechanism of action, clinical features and treatment of alkali burns
			Describe postmortem appearance and forensic importance of alkali burns
	Corrosive/ organic acid	LGF	Enlist different commonly used organic acids
			Enumerate physical appearance and uses of carbolic acid
			Describe mechanism of action, fatal dose & period of carbolic acid
			Describe clinical features and treatment of carbolic acid poisoning
			Describe postmortem appearance and forensic importance of carbolic acid poisoning
			Enumerate physical appearance and uses of oxalic acid
			Describe mechanism of action, fatal dose & period of oxalic acid
			Describe clinical features and treatment of oxalic acid poisoning
			Describe postmortem appearance and forensic importance of oxalic acid poisoning
	Corrosive/ vegetable acid and cyanides	LGF	Enumerate physical appearance, sources and uses of cyanides

			Describe mechanism of action, fatal dose & period of cyanides
			Describe clinical features and treatment of cyanide poisoning
			Describe postmortem appearance and forensic importance of cyanide acid poisoning
Surgery	Gastric cancer	LGF	Describe the types, etiology, risk factors, lab diagnosis and management of a patient with gastric cancer
	Gastric outlet obstruction	LGF	Describe the etiology, diagnosis and management of a patient with gastric outlet obstruction
Community medicine and public health	Health system of Pakistan: Introduction	LGF	Define health care system of Pakistan using WHO Health system frame work
	Primary health care (PHC)	LGF	Define PHC
			Describe the history of development of PHC
			Describe the concepts and components of PHC
			Describe comprehensive & selective PHC
			Describe reasons for failure of PHC
			Describe Health Systems before & after PHC
			Describe district health care system
			Enumerate indicators for assessing PHC
	Health education	LGF	Define health education
			Describe objectives and functions of health education
			Describe the components of health education
			Describe the methods of health education
			Describe the communication channel in health education
			Describe the constraints in health education
			Describe classification of theories of health education
			Describe the stages in health education
			Describe the principles of health education
			Describe the strategies for an effective health education program
			Explain the methods of evaluation and effectiveness of a health education project
	Health management information	LGF	Define concept of HMIS

	system (HMIS)		
			Enumerate the components of HMIS
			Describe its importance in health care delivery system
			Enumerate the principles of HMIS
			Give the causes of failure of HMIS
	Hospital administration	LGF	Define health care delivery system
			Describe the need of a specialized hospital administration
			Describe the attributes of a good hospital administrator
			Describe functions involved in hospital administration
			Describe the levels of hospitals and management levels in a hospital
	Health plans - Longitudinal, horizontal, integrated, 5 year, ADP, SAP, Short term, long term	LGF	Describe different health plans
			Describe characteristics of health plans
	Health plans - MDGs	LGF	Enumerate MDGS
			Describe targets & indicators of various health related MDGs
			Describe reasons for failure to achieve MDGS
	Health plans – SDGs	LGF	Enumerate SDGs related to health
			Describe targets & indicators of various health related SDGs
			Describe Pakistan progress on set targets
	Health planning	LGF	Define health planning
			Describe importance & use of planning in health
			Explain the reasons for ineffective health planning in Pakistan
			Describe health planning cycle
			Describe the types of health planning
	Health economics	LGF	Define Health economics
			Explain the importance of economic studies in health
			Describe different tools used in economic

			evaluations
	Health policy	LGF	Define health policy
			Describe its role in health system
			Describe different stages in policy making
			Describe the different types of policies
			Describe the constraints in policy making
			Describe health policy of Pakistan
	Role of international health agencies in public health	LGF	Enumerate international health agencies working in health sector
			Discuss structure and function of WHO & UNICEF
			Explain the roles of WHO & UNICEF in Pakistan
Theme-3 (Pain right upper abdomen)			
Anatomy	Gross anatomy	LGF	Explain the lobes and segments of the liver
			Discuss the gross structure of gall bladder and biliary channels
			Explain the gross and microscopic structure of the pancreas
	Liver histology	LGF	Explain the microscopic structure of the liver and gall bladder
Pathology	Liver Function Tests	LGF	Enumerate the functions of the liver. Explain the significance of different liver function tests. Interpret the Liver function tests in different diseases.
	Mechanisms of liver injury and repair	LGF	Describe the etiology and morphology of liver injury and repair
	Acute Liver failure	LGF	Describe the etiology, pathogenesis, clinical and biochemical and other features of acute liver failure
	Chronic Liver disease and liver cirrhosis	LGF	Describe the etiology, pathogenesis, clinical and biochemical and other features of chronic liver disease
			Explain the complications of liver cirrhosis
	Portal hypertension	LGF	Describe the etiology, pathogenesis, clinical features and complication of portal hypertension
	Viral hepatitis A and E	LGF	Explain the Etiology, pathogenesis, morphology and clinical features of Acute viral hepatitis A and E infection

	Viral hepatitis B	LGF	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of Acute viral hepatitis B infection
			Explain the pathogenesis, morphology and clinical features of Chronic viral hepatitis B infection
			Discuss the stages of viral hepatitis B infections
			Discuss the complications of chronic Hepatitis B virus infection
			Discuss the serological markers of hepatitis B Virus infection
			Explain the preventive strategies of Hepatitis B virus infection
	Viral Hepatitis C	LGF	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of viral hepatitis C infection
			Discuss the complications of chronic Hepatitis C virus infection
	Autoimmune hepatitis	LGF	Define autoimmune hepatitis
			Explain the serological and morphological features of autoimmune hepatitis
	Toxin and Drug induced hepatitis	LGF	Explain the etiology and morphological features of toxins and drug induced hepatitis
	Alcoholic liver disease	LGF	Discuss the morphology, pathogenesis and complications of Alcoholic liver disease
	Metabolic liver diseases • Non-Alcoholic liver disease (NAFLD) • Hemochromatosis • Wilson`s disease • Alpha-1 antitrypsin deficiency	LGF	Describe the morphology, clinical features and complications of NAFLD, Hemochromatosis, Wilson`s disease and Alpha-1 Anti-Trypsin deficiency
			Describe the etiology, morphology, clinical features and complications of Hemochromatosis
			Describe the etiology, morphology, clinical

			features and complications of Wilson`s disease
			Describe the etiology, morphology, clinical features and complication of Alpha-1 Anti-Trypsin deficiency
	Liver abscess	LGF	Describe the etiology, pathogenesis, morphology, clinical presentation, complications and lab diagnosis of Liver abscess
	Tumors of the liver	LGF	Classify liver tumors
			Explain the benign tumors of the liver
			Discuss the risk factors, etiology, morphology, clinical features, staging and complications of hepatocellular carcinoma
	Gall bladder • Gall stones	LGF	Discuss the types, risk factors, etiology, morphology, clinical features and complications of gall stones
	• Cholecystitis	LGF	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis
			Discuss the risk factors, etiology, morphology, clinical features and complications of Chronic cholecystitis
	• Gall bladder cancer		Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma gall bladder
	Pancreas		Enlist and define the congenital anomalies of pancreas
			Discuss the risk factors, etiology, morphology, clinical features and complications of acute pancreatitis
			Discuss the risk factors, etiology, morphology, clinical features and complications of chronic pancreatitis
			Describe the pathogenesis and complications of pancreatic pseudocyst
			Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma of pancreas
Pediatrics	Hereditary hyperbilirubinemias	LGF	Classify hereditary hyperbilirubinemias
			Explain the types, clinical features, investigations and management of different hereditary hyperbilirubinemias

	Acute hepatitis A	LGF	Explain the Etiology, pathogenesis, clinical features, investigations and treatment of Acute viral hepatitis A infection
Medicine	Hepatitis B virus infection	LGF	Explain the Etiology, pathogenesis, clinical features, investigations and treatment of Acute viral hepatitis B infection
			Explain the Etiology, pathogenesis, clinical features, investigations and treatment of chronic viral hepatitis B infection
	Hepatitis C virus infection	LGF	Explain the Etiology, pathogenesis, clinical features, investigations and treatment of chronic viral hepatitis C infection
			Explain the clinical features, investigations, management and complications of liver cirrhosis
			Explain the treatment of a patient with hepatic encephalopathy
	Metabolic liver diseases	LGF	Discuss the management of a patient with Wilson`s disease
			Discuss the management of a patient with Hemochromatosis
			Discuss the management of a patient with primary biliary cirrhosis
			Discuss the management of a patient with autoimmune hepatitis
	Hepatic vein obstruction	LGF	Discuss the etiology, clinical features, investigations and management of a patient with hepatic vein obstruction
	Hepatocellular carcinoma	LGF	Explain the etiology, clinical features, investigations, treatment and complications of hepatocellular carcinoma
	Carcinoma of the pancreas	LGF	Discuss the risk factors, etiology, clinical features, staging and complications of carcinoma of pancreas
Surgery	Gall bladder and pancreas	LGF	Explain the etiology, clinical features, investigations, treatment and complications of gall stones
			Explain the etiology, clinical features, investigations, treatment and complications of acute and chronic cholecystitis
			Explain the etiology, clinical features, investigations, treatment and complications of acute and chronic pancreatitis
	Carcinoma of the gall bladder	LGF	Discuss the risk factors, etiology, clinical features, staging and complications of

			carcinoma of gall bladder
	Liver abscess	LGF	Explain the etiology, clinical features, investigations, treatment and complications of liver abscesses
	Hydatid liver cysts	LGF	Explain the etiology, clinical features, investigations, treatment and complications of Hydatid liver cysts
Pharmacology	Hepatotoxic drugs	LGF	Describe first pass hepatic metabolism
			Enlist common hepatotoxic drugs
			Explain the drug treatment of paracetamol poisoning
	Drugs used in the treatment of hepatitis B	LGF	Classify the drugs for hepatitis B virus infection
			Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis B
	Drugs used in the treatment of hepatitis C	LGF	Classify the drugs for hepatitis C virus infection
			Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis C
Community medicine	Viral Hepatitis	LGF	Describe the epidemiological determinants of Hepatitis B & C
			Describe the prevalence and incidence with reference to local context
			Describe the preventive & control measures for Hepatitis B & C
Family Medicine	Acute and chronic hepatitis	LGF	Explain the etiology and clinical features of acute hepatitis
			Explain the management strategies of acute hepatitis in family practice
			Explain the etiology, clinical features and complications of Chronic hepatitis
			Explain the management strategies of chronic hepatitis in family practice
			Describe the red-flags in a patient with acute and chronic hepatitis for referral to specialty care

Theme-4: (Diarrhea and Constipation)			
Pathology	Intestinal obstruction	LGF	Define hernia, adhesions, volvulus, and intussusception
	Ischemic bowel disease	LGF	Describe the etiology, pathogenesis, morphology, and complications of small bowel ischemia
	Diarrheas	LGF	Define malabsorption syndrome
			Classify diarrheas
			Explain the etiology, morphology, clinical features and complications of Celiac disease
	Bacterial enterocolitis	LGF	Explain the etiology, pathogenesis, and clinical features of bacterial enterocolitis
			Explain the etiology, pathogenesis, morphology and clinical features of Salmonellosis
	Parasitic enterocolitis	LGF	Classify the parasites invading the small gut
	Entamoeba histolytica	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Amebiasis
	Giardia lamblia	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Giardiasis
	Hymenolepis nana	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of H. nana infestation
	Diphyllobothrium latum	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Diphyllobothrium latum
	Schistosoma hematobium, mansoni and japonicum	LGF	Enlist physical characteristics of Trematodes
			Classify Schistosoma on the basis of organ systems affected
			Describe the routes of infection, pathophysiology life cycle, clinical features and lab diagnosis of Schistosoma hematobium, mansoni and japoncum
			Compare the morphological characteristics of eggs of different species of Schistosoma.
	Ascaris lumbricoides	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Ascaris lumbricoides

	Strongyloides	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Strongyloides
	Ankylostoma duodenale	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Ankylostoma duodenale
	Enterobius vermicularis	LGF	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Enterobius vermicularis
Medicine	Intestinal tuberculosis	LGF	Discuss the etiology, pathogenesis, clinical features, investigations, treatment and complications of intestinal tuberculosis
Surgery	Acute appendicitis	LGF	Discuss the etiology, risk factors, pathogenesis, clinical features, differential diagnosis, investigations, treatment and complications of acute appendicitis
	Intestinal obstruction	LGF	Discuss the etiology, clinical features, investigations, management and complications of intestinal obstruction
Pharmacology	Antidiarrheal agents (Opioids, Colloidal bismuth compounds, Kaolin & Pectin, etc	LGF	Define and classify antidiarrheal agents
			Describe the mechanism of action of different antidiarrheal agents
	Laxatives (Bulk-forming, stool softners, osmotic laxatives, stimulant laxatives, etc.	LGF	Define and classify laxative drugs
			Describe the mechanism of action of different laxatives
	Lactulose	LGF	Describe the pharmacological basis of Lactulose in the treatment of hepatic encephalopathy
	Anti-amoebic drugs	LGF	Classify anti-amoebic drugs
			Describe mechanism of actions of Metronidazole & Dialoxanide Furoate
			Enlist indications and adverse effect of Metronidazole & Dialoxanide Furoate.
			Describe the drug interaction of Metronidazole with Alcohol.

	Anthelmintics	LGF	Classify Anti-Helminthic drugs
			Enumerate clinical use(s), adverse effects and contraindications of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide
			Describe mechanism of action of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide
	Anti-Salmonellosis drugs	LGF	List the drugs used in enteric fever
			Describe the basis for selection of antibiotics in enteric fever based on age, pregnancy and resistance
			Describe the clinical applications of fluroquinolones in the treatment of gastrointestinal disorders
Forensic medicine	Irritants	LGF	Classify irritants poisons
	Irritants: Metallic poisons	LGF	Enlist common metallic irritant poisons
			Describe physical appearance, uses, mechanism, fatal dose, fatal period and signs and symptoms of Copper and Mercury poisons
			Describe the treatment, postmortem appearance and medicolegal importance of common Copper and Mercury poisons
			Describe the signs and symptoms, treatment, postmortem appearance and medicolegal importance of acute and chronic Arsenic poisoning
			Describe the signs and symptoms, treatment, postmortem appearance and medicolegal importance of acute and chronic Lead poisoning
	Irritants /mechanical poisons/ powder glass	LGF	Enlist commonly encountered mechanical poisons
			Enumerate symptoms and signs, treatment, postmortem appearance and forensic importance of powder glass
	Irritants/ nonmetallic poisons	LGF	Enlist commonly encountered inorganic elements poisoning

			Enumerate physical appearance and uses of phosphorus
			Describe mechanism of action, fatal dose & period of phosphorus
			Describe clinical features and treatment of phosphorus poisoning
			Describe postmortem appearance and forensic importance of phosphorus poisoning
			Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of aluminum phosphide
			Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of chlorine
			Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of iodine
	Irritants/ vegetable poisons	LGF	Enlist commonly encountered inorganic elements poisoning
			Describe characteristics, active principles and clinical features of vegetable poisons
			Enumerate uses, fatal dose and fatal periods of vegetable poisons
			Describe treatment, postmortem appearance and forensic importance of vegetable poisons
	Irritants/ animal poisons	LGF	Differentiate between poisonous and non-poisonous snakes
			Classify snakes on the basis of their venom
			Describe the characteristics of snake venoms
			Classify different snakes venoms
			Describe steps of management of snake bite
			Describe post mortem appearance and medico legal aspects of venomous snake bite
			Describe sign and symptoms of scorpion bite
Community medicine	Overview of common intestinal worms' infestation and their control	LGF	Describe the common intestinal worm infestation in our local context

			Describe the epidemiological determinants of common worm infestation with reference to local context
			Describe the preventive & control measures for common worm infestation
	Control of dysentery	LGF	Describe the epidemiology of Dysentery.
			Describe the prevention & control measures of Dysentery
	Food hygiene	LGF	Describe the term food Hygiene
			Describe the importance of food hygiene
			Describe the process of Food hygiene
Family medicine	Enteric infections	LGF	Classify enteric infections
			Describe the etiology, clinical features, investigations and management of Salmonellosis
			Describe the red-flags in a patient with Salmonella infections for referral to specialty care
			Explain the etiology, and management of acute gastroenteritis
			Discuss the primary and secondary prevention of acute gastroenteritis in a primary healthcare setting
			Describe the red-flags in a patient with acute gastroenteritis for referral to specialty care
Pediatrics	Lactase deficiency	LGF	Describe the clinical features, investigations, complications and management of Lactase deficiency
	Infectious diarrhea	LGF	Describe the etiology, clinical features, investigations, complications and management of infectious diarrheas in children
	Celiac disease	LGF	Describe the etiology, clinical features, investigations, complications and management of Celiac disease
Theme- 5 (Bleeding per Rectum)			
Pathology	Inflammatory bowel disease (IBD)	LGF	Classify IBD
			Discuss the risk factors and etiology of IBDs
			Explain the pathogenesis clinical presentation of IBD

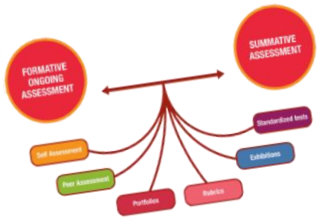
			Differentiate between Ulcerative colitis and Crohn`s disease
			Discuss the investigations and management of IBDs
			Explain the intestinal and extra-intestinal manifestations/complications of IBDs
			Explain the role of surveillance colonoscopy in patients with Ulcerative colitis
	Diverticular disease	LGF	Explain the etiology, pathogenesis, morphology and clinical features of Colonic diverticulosis
	Colonic polyps	LGF	Classify colonic polyps.
			Describe the pathogenesis, morphology, clinical presentation, complications and diagnosis of different types of colonic polyps
	Hemorrhoids	LGF	Define hemorrhoids
			Explain the morphology, pathogenesis and clinical features of Hemorrhoids
	Colorectal carcinoma	LGF	Describe the adenoma carcinoma sequence
			Describe the pathogenesis, morphology, clinical presentation, complications and staging of colorectal Carcinoma
Surgery	Ulcerative colitis	LGF	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Ulcerative colitis
	Crohn`s disease	LGF	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Crohn`s disease
	Diverticular disease	LGF	Explain the etiology, pathogenesis, clinical features, complications and management of Diverticulosis and Diverticulitis
	Anal diseases: • fistula • fissures • hemorrhoids	LGF	Define perianal fistula and anal fissure
			Explain the risk factors and management of anal fistula and anal fissures
			Explain the risk factors and management of hemorrhoids
	Colorectal cancers	LGF	Classify colorectal cancers
			Describe the staging of colorectal cancers
			Explain the pathogenesis, risk factors and clinical features of colorectal cancers

			Explain the complications, management and prognosis of colorectal cancers
	Ischemic Colitis	LGF	Explain the etiology, pathogenesis, clinical features, complications and management of Ischemic colitis
Medicine	Irritable bowel syndrome	LGF	Explain the risk factors, clinical features, and management of Irritable bowel syndrome
	Ulcerative colitis	LGF	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Crohn`s disease
	Crohn`s disease	LGF	Explain the etiology, pathogenesis, clinical features, complications and management of Crohn`s disease
	Ano-rectal infections	LGF	Classify anorectal infections
			Explain the risk factors, clinical features and management of anorectal infections including sexually transmitted infections
Pharmacology	Drugs used in the treatment of Irritable Bowel Syndrome (IBS)	LGF	Enlist the drugs used in IBS
			Describe the mechanism of action of antispasmodics (anticholinergics), 5-HT receptor antagonisms (Alosetron) in IBS
	Drugs used in the treatment of IBD	LGF	Classify the drugs used in IBD
			Describe the mechanism of actions of aminosalicylates, glucocorticoids, purine analogues, methotrexate, monoclonal antibodies and anti-integrin in IBDs
			Explain the adverse effects of drugs used in the treatment of IBD
Forensic medicine	Abdominal injuries	LGF	Describe injuries to abdominal wall
			Describe injuries to esophagus, intestine and stomach
			Describe injuries to liver and spleen
Practical work			
Pathology	Ascaris Lumbricoides	Identify the important morphological and staining characteristics of the ova	
	Enterobius vermicularis	Identify the important morphological and staining characteristics of the ova	
	Ankylostoma	Identify the important morphological and staining	

Teaching hours allocation

	duodenale	characteristics of the ova
	Liver Function Tests	To interpret normal and abnormal liver function tests in different clinical scenarios
Pharmacology	Peptic ulcer disease	construct prescription for Helicobacter-associated peptic ulcer disease (Triple therapy & Quadruple therapy)
	Anti-emetics	construct prescriptions for motion sickness, morning sickness, post-operative patient
		construct prescriptions for cancer chemotherapy-induced vomiting
		construct a prescription for a patient suffering from amoebic dysentery
	Enteric fever	construct a prescription for a patient suffering from Enteric fever
		Write a prescription for a patient suffering from Ascariasis
Forensic medicine	Poisons	Identify corrosives
	Corosives	Case presentation of vitriolage
	Irritants	identify common irritant poisons
	Metallic poisons	identify common Metallic and non-metallic poisons
	Vegetable and animal poisons	identify common Vegetable and animal poisons

S.No	Subject	Theory hours	Practical hours	Total hours
1.	Pathology	39	10	49
2.	Pharmacology	10	10	20
3.	Forensic Medicine	14	10	24
4.	Community Medicine	19	10 (Research)	29
5.	Medicine	17	X	17
6.	Surgery	14	X	14
7.	Pediatrics	04	X	02
8.	Family medicine	03	X	O3
9.	Anatomy	01	X	01
10.	Prime	01	X	01
11.	ENT	24	X	24
12.	Eye	17	X	17



7 Examination and Methods of Assessment:

The year-4 will be assessed in 5 blocks.

1) Block-1 (Neurosciences-2 module) will be assessed in **paper-J.**
2) Block-2 (GIT and hepatobiliary module-2 will be assessed in **paper-K.**
3) Block-3 (Renal-2, Endocrine and Reproduction-2 module) will be assessed in **paper-L.**
4) Block-4 (ENT module) will be assessed in **paper M-1.**
5) Block-5 (Eye module) will be assessed in **paper M-2.**
6) Each written paper consists of 120 MCQs except for ENT & Eye papers which includes 90 MCQs each.
7) Internal assessment will be added to final marks in KMU.
8) For ENT (M-1 module) and Eye (M-2 module), the marks allocated for each OSCEstation will be 5, while the rest of the modules are allotted 6 marks per OSCE station.
9) Practical assessment will be in the form of OSPE/OSCE which will also include embedded viva stations.

The details of each section are given in the tables below.

Assessment Plan for 4th Year MBBS

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE(10%)	TOTAL MARKS
Paper J	Neurosciences-2	120	13	120	13	266
Paper K	GIT-2	120	13	120	13	266

Paper L	Renal-2 and Endocrine and Reproduction	120	14	120	13	267
Paper M-1	ENT	90	10	75*	8	183
Paper M-2	EYE	90	10	75*	8	183
Research**						35
Total Marks		**480**	**53**	**500**	**67**	**1200**

*For ENT (M-1 module) and Eye (M-2 module), the marks allocated for each OSCE station will be 5, while the rest of the modules are allotted 6 marks per OSPE/OSCE station.

**Research viva of 20 marks will be conducted in paper-L. However, the rest of the 15 marks will be decided by the concerned department internally for the contribution of the students in research project/thesis.

Paper-K (GIT and Hepatobiliary-2)

MCQs

Subject	Total MCQs
Pharmacology	16
Pathology	41
Forensic medicine	16
Community medicine	18
PRIME	01
Medicine	11
Surgery	12
Pediatrics	03
Family medicine	02
Total	**120**

OSPE

Subject	Viva stations	OSPE/OSCE stations	Total
Pharmacology	2	2	4
Pathology	2	2	4
Forensic medicine	2	2	4
Community medicine	2	4	6
Medicine (GIT examination)	x	1	1
Surgery (GIT/local examination)	x	1	1
Total	8	12	20

* A minimum of 20 stations will be used in final exams. Total marks will be 120 (6marks for each station).

8 Learning Opportunities and Resources

8.1 Books:

Pathology:
Robbins Basic Pathology
Pharmacology:
Basic and clinical pharmacology by Katzung BG, Maters SB, Trevor AJ, 14th Edition
Lippinocott's Illustrated reviews, Pharmacology, Clark MA, Finkel R, Ray JA,Whalen K,7th Edition.
Reference Books:
Goodman and Gilman's The Pharmacologicl Basis of Therapeutics, Brunton LL 12th Edition
Pediatrics:
Nelson book of pediatrics 21st Edition
Basis of pediatrics, Pervaiz Akbar Khan, Ninth edition
Forensic Medicine:
Parikh text book of medical jurisprudence.Seventh edition.
Principles and practice of Forensic medicine by Nasib R. Awan
Surgery:
Baley and Love
Community Medicine:
1.Park K.Park"s text book for preventive and social medicine. Twenth third edition.
2.Ansari IStextbook of community medicine eighth edition.
Medicine:
Davidson's Principles and Practice of medicine
PJ kumar

9 Course Feedback Form

Course Title: _____

Semester/Module _____ Dates:_____

Please fill the short questionnaire to make the course better.

Please respond below with 1, 2, 3, 4 or 5, where 1 and 5 are explained.

THE DESIGN OF THE MODLUE

A. Were objectives of the course clear to you? Y ☐ N ☐

B. The course contents met with your expectations

1. Strongly disagree 5. Strongly agree ☐

C. The lecture sequence was well-planned

1. Strongly disagree 5. Strongly agree ☐

D. The contents were illustrated with

1. Too few examples 5. Adequate examples ☐

E. The level of the course was

1. Too low 5. Too high ☐

F. The course contents compared with your expectations

1. Too theoretical 5. Too empirical ☐

G. The course exposed you to new knowledge and practices

1. Strongly disagree 5. Strongly agree ☐

H. Will you recommend this course to your colleagues?

1. Not at all 5. Very strongly ☐

THE CONDUCT OF THE MODLUE

A. The lectures were clear and easy to understand

1. Strongly disagree 5. Strongly agree ☐

B. The teaching aids were effectively used

1. Strongly disagree 5. Strongly agree ☐

C. The course material handed out was adequate

1. Strongly disagree 5. Strongly agree ☐

D. The instructors encouraged interaction and were helpful

1. Strongly disagree 5. Strongly agree ☐

E. Were objectives of the course realized? Y ☐ N ☐

F. Please give overall rating of the course

90% - l00%	(	)	60% - 70%	(	)
80% - 90%	(	)	50% - 60%	(	)
70% - 80%	(	)	below 50%	(	)

Please comment on the strengths of the course and the way it was conducted.

Please comment on the weaknesses of the course and the way it was conducted.

Please give suggestions for the improvement of the course.

Optional – Your name and contact address:

Thank you!!