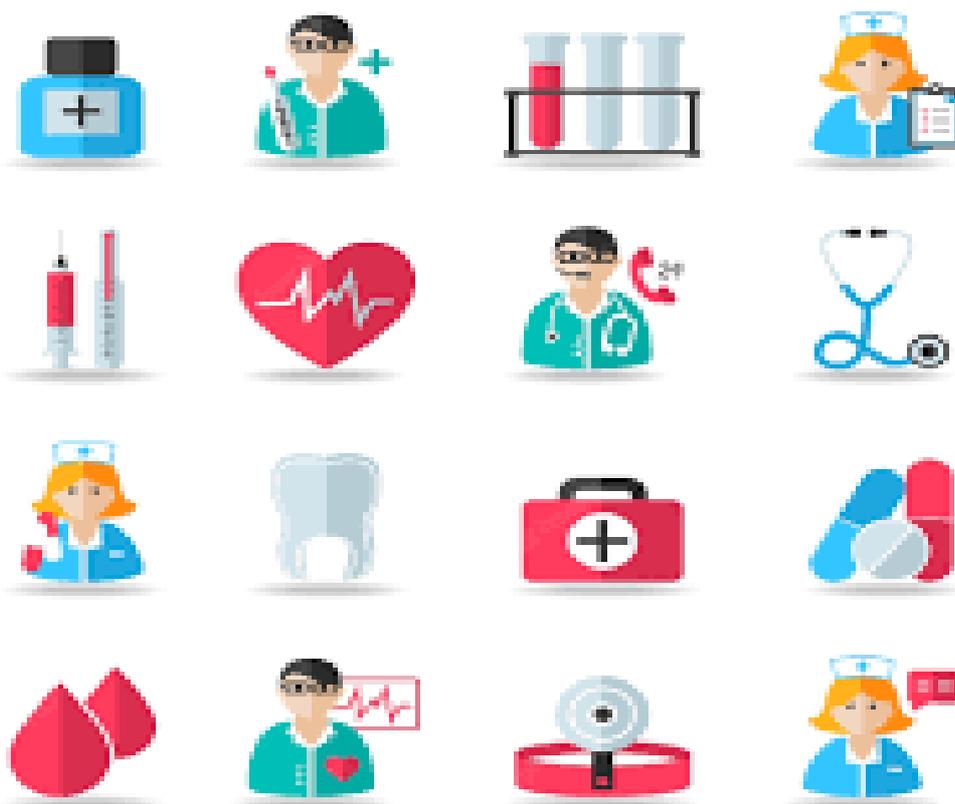




**SPIRAL II – INTEGRATED CURRICULUM**  
**STUDY GUIDE FOR THE STUDENTS OF**  
**4<sup>th</sup> YEAR MBBS SESSION 2023- 2024**



**BAQAI MEDICAL COLLEGE**  
**BAQAI MEDICAL UNIVERSITY**

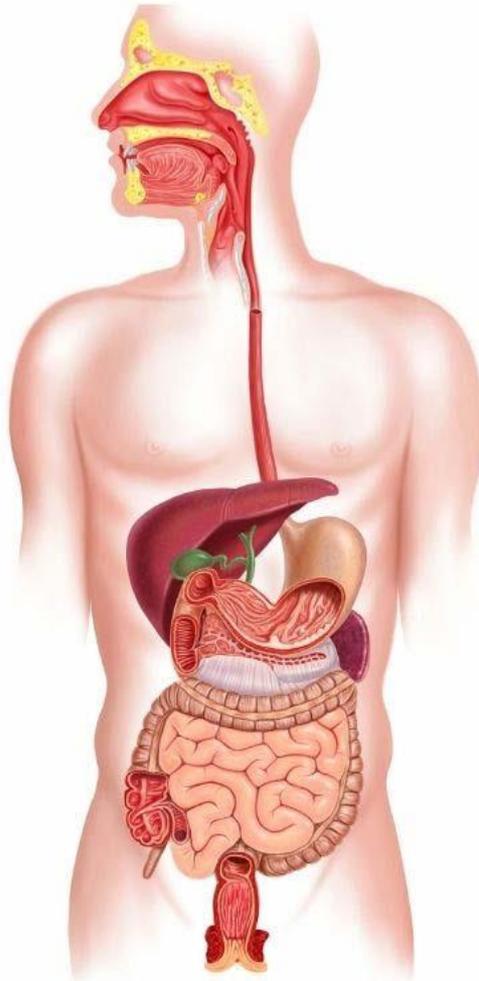
51-Deh Tor, Gadap Road, Superhighway. P.O Box: 2407, Karachi-75340, Pakistan.

(092-21)34410-293 to 298, 34410-427 to 430

Fax: (092-21)34410-317, 34410-431

Email: [info@baqai.edu.pk](mailto:info@baqai.edu.pk), Web: [www.baqai.edu.pk/](http://www.baqai.edu.pk/)

# INTEGRATED MODULAR COURSE STUDY GUIDE



## *GASTROINTESTINAL TRACT & HEPATOBIILIARY SYSTEM*

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The recent developments in the field of medical education globally have brought about major changes in the traditional paradigm of learning and teaching. The shift from teacher-centered to student-centered learning has an impact on both undergraduate and postgraduate learners. This study guide for the integrated modular system is developed to keep pace with these changes. This guide is based on the SPICES model of curriculum development.

1. The course organization, content, and activities are mainly student-centered.
2. We have incorporated case-based learning in our modules to make students problem-oriented learners.
3. Integration of the basic sciences content with pre-clinical and clinical subjects has been done explicitly.
4. Field visits are arranged at Baqai Medical University satellite clinics and other community healthcare centers to enlighten the students about community-related health problems.
5. Students are allowed to opt for Electives in the parent as well as other institutes for enhancement in learning.
6. It is a structured program, which starts with the basic concepts of medicine and incorporates all components of medical sciences in horizontal as well as vertical form.

This study guide provides content-related information in the form of learning resources, a guide to learning and curriculum for the management of learning, and an outline of students' activities. In this way, it may be considered as a multidimensional guide for an undergraduate program of MBBS.

<i><b>Vision</b></i>	<i><b>Mission</b></i>
	
<i><b>Baqai Medical University</b></i>	
<p>To evolve as a nucleus for higher learning with a resolution to be socially accountable, focused on producing accomplished health care professionals for services in all spheres of life at the national and global level”.</p>	<p>The mission of Baqai Medical University is to be recognized as a center of excellence in education, research, patient care, and community services by producing highly capable and knowledgeable professionals.</p>
<i><b>Baqai Medical College</b></i>	
<p>Our vision is to enhance access and excellence in medical education and research, with the aim of capacity building of students and faculty through innovations, and science and technology competencies, to achieve rapid and sustainable health. The medical graduate thus produced, will be informed, and trained enough to serve the community better, and to be an advisor to the national and international health organizations.</p>	<p>The mission of the Baqai Medical College is to produce medical graduates, who are responsible and accomplished individuals and have skills for problem-solving, clinical judgment, research, and leadership for a medical practice at the international level and are also aware of the health problems of the less privileged rural and urban population of Pakistan.</p>

## CURRICULUM INTEGRATION COMMITTEE (CIC)

Name	Designation
<b>Prof. Dr. Nazia Jameel</b>	Head CIC Spiral II
<b>Dr. Sarah Azhar</b>	Head CIC Spiral II
<b>Dr. Maeesa Sajeel</b>	Member, 4th-year MBBS Class Coordinator
<b>Prof. Dr. M.S. Fahmi</b>	Member, Department of Ophthalmology
<b>Dr. Abdul Ghaffar</b>	Member, Department of Surgery & Allied
<b>Dr. Amara Altaf</b>	Member, Department of Community Medicine
<b>Dr. Dania Faisal</b>	Member, Department of Medicine & Allied
<b>Dr. Faraz Saleem</b>	Member, Department of Pharmacology
<b>Dr. Hina Amjad</b>	Member, Department of Pharmacology
<b>Dr. Nasima Iqbal</b>	Member, Department of Pathology
<b>Dr. Nikhat Ahsan</b>	Member, Department of Obstetrics & Gynecology
<b>Dr. Rehana Babar</b>	Member, Department of ENT
<b>Dr. Saadia Akram</b>	Member, Department of Obstetrics & Gynecology
<b>Dr. Tahira Saeed</b>	Member, Department of Pediatrics
<b>Dr. Zulfiqar H. Naqvi</b>	Member, Department of Community Medicine
<b>Ms. Maria Rahim</b>	Member, Department of Research

## TEACHING METHODOLOGIES

		
<p><b>Interactive Lectures</b></p>	<p><b>Case-based Learning</b></p>	<p><b>Student's Presentations</b></p>
		
<p><b>Flipped Classroom</b></p>	<p><b>Small group discussions</b></p>	<p><b>Practical demonstration</b></p>
		
<p><b>Hands-on practice of clinical skills in a simulated environment</b></p>	<p><b>Virtual teaching sessions</b></p>	<p><b>Self-directed learning</b></p>

*Gastrointestinal  
Tract  
&  
Hepatobiliary  
System*

# INTRODUCTION TO MODULE – I



<b><i>Module – I</i></b>	
<b><i>GIT &amp; Hepatobiliary System</i></b>	
Systems	<ul style="list-style-type: none"> <li>• GIT System</li> <li>• Hepatobiliary System</li> </ul>
Duration	8 Weeks (From 27 <sup>th</sup> March 2023 to 29 <sup>th</sup> June 2023)
Assessment Dates	3 <sup>rd</sup> and 4 <sup>th</sup> July 2023
Assessment Pattern	MCQs, SEQs & OSPE

- The Assessment dates are tentative (Subject to change)

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Inflammatory &amp; ulcerative lesions of the oral cavity</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Comprehend Aphthous Ulcer. with its causes, pathogenesis, and morphology.</li> <li>2. Discuss the predisposing factors, pathogenesis, and morphology of Erythroplakia and Leukoplakia.</li> <li>3. List the important viruses and fungi that can cause infections in the oral cavity.</li> </ol>
<b>Tumors of the Oral Cavity</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify tumors of the oral cavity.</li> <li>2. List the causes and risk factors of Squamous cell carcinoma.</li> <li>3. Comprehend Squamous cell carcinoma's pathogenesis, morphology &amp; clinical features.</li> </ol>
<b>Disorders of Salivary glands</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. List the diseases of salivary glands with their causes and brief morphology.</li> <li>2. Classify the tumors of salivary glands.</li> <li>3. Describe the causes, pathogenesis &amp; morphological features of pleomorphic adenoma</li> </ol>
<b>Congenital disorders of the Esophagus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the common congenital anomalies of the Esophagus with their causes and pathological features.</li> <li>2. Define Hiatal Hernia and list its causes and pathological features.</li> </ol>
<b>Inflammatory disorders of the Esophagus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. List the inflammatory disorders of the Esophagus.</li> <li>2. Discuss their causes, pathogenesis, and common complications.</li> <li>3. Describe the pathogenesis, Clinical &amp; morphological features of GERD (Gastroesophageal reflux Disease).</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Tumor of Esophagus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the tumors of the esophagus.</li> <li>2. Enumerate the causes of esophageal tumors.</li> <li>3. Describe the pathogenesis and morphology of adenocarcinoma and squamous cell carcinoma of the esophagus.</li> <li>4. Discuss the epidemiology &amp; prognosis of esophageal carcinoma.</li> </ol>
<b>Acute Gastritis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the predisposing factors, pathogenesis, and complications of acute gastritis.</li> <li>2. Comprehend the clinical features and morphology of acute gastritis.</li> </ol>
<b>Chronic Gastritis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the causes, predisposing factors, pathogenesis, clinical features, morphology, and complications of chronic gastritis.</li> </ol>
<b>Peptic ulcer</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the causes and risk factors associated with peptic ulcers.</li> <li>2. Describe the pathogenesis, morphological, and clinical features of peptic ulcer.</li> <li>3. Differentiate between benign &amp; malignant ulcers of the stomach.</li> </ol>
<b>Tumors of Stomach</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify tumors of the stomach.</li> <li>2. Enumerate the common causes and risk factors of tumors of the stomach.</li> <li>3. Describe the pathogenesis and morphology of Carcinoma of the Stomach.</li> <li>4. Briefly describe lymphoma, stromal tumors of the stomach, and carcinoid tumors.</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Congenital of anomalies of intestines</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Enumerate the different congenital anomalies of the Intestines with their causes and pathological features.</li> <li>2. Discuss diverticulitis with its causes, pathogenesis, morphology, diagnosis &amp; clinical features.</li> <li>3. Describe the causes, pathogenesis, morphology, clinical features, and diagnosis of Congenital Aganglionic Megacolon (Hirschsprung's disease).</li> </ol>
<b>Malabsorption Syndrome</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Enumerate the different malabsorption syndromes of intestines.</li> <li>2. Discuss the causes, pathogenesis, morphology, diagnosis, and clinical features of celiac sprue, tropical sprue &amp; Whipple's disease.</li> </ol>
<b>Inflammatory Bowel Diseases - I</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify inflammatory bowel diseases.</li> <li>2. Discuss the causes, pathogenesis, morphology, diagnosis, and clinical features of idiopathic inflammatory bowel diseases.</li> <li>3. Comprehend Ulcerative colitis based on its causes &amp; predisposing factors, pathogenesis, and clinical, and morphological features and complications.</li> </ol>
<b>Inflammatory Bowel Diseases - II</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1 Discuss the causes, pathogenesis, morphology, and clinical features of Crohn's Disease.</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Vascular diseases of the intestine</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the vascular diseases of the intestine.</li> <li>2. Comprehend the causes, pathogenesis, morphology, and clinical features of gangrene and other vascular diseases of the bowel.</li> </ol>
<b>Non-neoplastic Polyps of the Intestine</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the non-neoplastic polyps of the intestine.</li> <li>2. Describe the causes, risk factors, pathogenesis, morphological &amp; clinical features, and diagnosis of non-neoplastic polyps of the intestine.</li> <li>3. Differentiate between intestinal papilloma and polyp.</li> </ol>
<b>Tumors of the Intestine</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify the tumors of the intestine.</li> <li>2. Describe the causes, risk factors, pathogenesis, and morphological &amp; clinical features of intestine tumors.</li> <li>3. Describe the commonest site of adenocarcinoma with its incidence and etiology.</li> <li>4. Explain the pathogenesis, morphological, and clinical features of colorectal carcinoma.</li> <li>5. Discuss the Aster-Collar classifications of carcinoma of the colon and rectum.</li> </ol>
<b>Types of jaundice with respect to its etiology</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Classify jaundice based on its etiology.</li> <li>2. Describe the causes, clinical features, and lab diagnosis of jaundice.</li> <li>3. Differentiate between intrahepatic and extra-hepatic biliary obstruction</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Hepatitis - I</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define acute, chronic, persistent, fulminant hepatitis and carrier state.</li> <li>2. Differentiate between acute and chronic hepatitis.</li> <li>3. Briefly describe the causes, pathogenesis, morphology and clinical features and investigations of hepatitis.</li> </ol>
<b>Hepatitis - II</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Comprehend viral hepatitis A, B, C, D, and E with respect to route of transmission, incubation period, clinical features, and potential outcome of acute infection.</li> <li>2. Enumerate the causes of neonatal hepatitis.</li> </ol>
<b>Alcoholic &amp; non-alcoholic liver disease and Liver Abscess</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Illustrate a flow chart that depicts the pathogenesis of alcohol liver disease and non-alcoholic fatty liver disease.</li> <li>2. Describe the morphological and clinical features of alcoholic hepatitis and non-alcoholic fatty liver disease.</li> <li>3. Enumerate the common causes of liver abscess.</li> <li>4. Describe the pathogenesis &amp; morphology of liver abscess.</li> </ol>
<b>Liver Cirrhosis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Enumerate the common causes of cirrhosis.</li> <li>2. Classify Liver Cirrhosis.</li> <li>3. Discuss the pathogenesis, clinical features, morphology, and complications of cirrhosis.</li> </ol>

## Pathology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Complications of Liver Cirrhosis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. List the complications of Liver Cirrhosis.</li> <li>2. Discuss the causes, risk factors, pathogenesis, morphological and clinical features of hepatocellular carcinoma.</li> <li>3. Explain the pathology and morphological features of hepatic necrosis and failure.</li> </ol>
<b>Biliary Diseases</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Comprehend the causes, risk factors, pathogenesis, morphological and clinical features of Biliary Cirrhosis.</li> <li>2. Differentiate Primary and Secondary Biliary diseases.</li> <li>3. Discuss the pathogenesis, morphology, clinical features, and Cholangiocarcinoma.</li> </ol>
<b>Cholelithiasis &amp; its complications</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Explain the risk factors and pathogenesis of Cholelithiasis.</li> <li>2. Describe the different types of gall stones and their gross appearances.</li> <li>3. Differentiate between acute and chronic cholecystitis on the basis of their pathogenesis, morphological, and clinical features.</li> <li>4. Discuss the complications of Cholelithiasis.</li> </ol>
<b>Pancreatitis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the causes, pathogenesis, morphological and clinical features, and diagnosis of pancreatitis.</li> <li>2. Differentiate between Acute and Chronic Pancreatitis.</li> <li>3. Discuss the complications of Pancreatitis.</li> </ol>
<b>Carcinoma of Pancreas</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Comprehend carcinoma of the pancreas based on its causes, risk factors, pathogenesis, morphological and clinical features.</li> </ol>

## Pathology

At the end of these 1 ½ hour small group discussion sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Disorders of the Oral Cavity</b>	<b>Small group discussion</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Classify the disorders of the Oral Cavity.</li> <li>2. Define dental caries, periodontitis, gingivitis &amp; oral sub-mucosal fibrosis.</li> <li>3. Describe the etiology, pathogenesis, morphology, clinical features, and diagnosis of common disorders of the oral cavity</li> </ol>
<b>Acid peptic disease</b>	<b>Small group discussion</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Comprehend acid peptic disease based on its pathogenesis, morphology, and Clinical features.</li> <li>2. Discuss the different complications of acid peptic disease</li> </ol>
<b>Diarrheal diseases</b>	<b>Small group discussion</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Classify the different types of diarrheal diseases.</li> <li>2. Describe the causes, pathogenesis, morphological &amp; clinical features, and diagnosis of diarrheal disease.</li> </ol>
<b>Enterocolitis</b>	<b>Small group discussion</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. List the different causes of enterocolitis.</li> <li>2. Describe the causes, pathogenesis, morphological &amp; clinical features of infective enterocolitis.</li> </ol>

## Pathology

At the end of these 1 ½ hour practical sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Barrett's Esophagus &amp; Esophageal Varices</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Comprehend Barrett's esophagitis based on its causes, morphology, and clinical features of Barrett's Esophagus.</li> <li>2. Summarize the pathogenesis, morphology, clinical features, and complications of Esophageal Varices.</li> <li>3. Identify the given photomicrographs of Barrett's Esophagus and Esophageal Varices with their points of identification.</li> </ol>
<b>Non-neoplastic Polyps of the Intestine</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Summarize the pathogenesis, morphological &amp; clinical features of non-neoplastic polyps of the intestine.</li> <li>2. Identify the gross specimen and histopathological slide of the juvenile rectal polyp with its points of identification.</li> </ol>
<b>Colorectal Carcinoma</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Summarize the pathogenesis, morphological &amp; clinical features of Colorectal Carcinoma.</li> <li>2. Identify the gross specimen and illustrate the histopathological slide of colorectal carcinoma.</li> </ol>
<b>Acute Appendicitis</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Comprehend the incidence, etiology and pathogenesis, morphological and clinical features of acute appendicitis.</li> <li>2. Identify the gross specimen and illustrate the histopathological slide of acute appendicitis.</li> </ol>

## Pathology

At the end of these 1 ½ hour practical sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Acute &amp; Chronic Hepatitis</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Compare the morphological features of acute hepatitis with chronic hepatitis.</li> <li>2. Identify the histopathological slide of acute &amp; chronic hepatitis and describe its point of identification.</li> <li>3. Draw a labeled diagram of the given slide.</li> </ol>
<b>Liver Cirrhosis</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Correlate the pathogenesis of liver cirrhosis with its morphological features.</li> <li>2. Identify the histopathological slide of cirrhosis and describe its point of identification.</li> <li>3. Illustrate a labeled diagram of the given slide.</li> </ol>
<b>Chronic Cholecystitis</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Differentiate between the morphology of acute and chronic cholecystitis.</li> <li>2. Examine the gross specimen of chronic cholecystitis and describe its points of identification.</li> <li>3. Identify the histopathological slide of chronic cholecystitis and draw a labeled diagram.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Drugs stimulating motility &amp; anti-emetic drugs</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the pathophysiology of Emesis.</li> <li>2. Classify anti-emetics and drugs increasing motility.</li> <li>3. Explain the mechanism of action of Metoclopramide, Domperidone, Dimenhydrinate Promethazine, and ondansetron.</li> <li>4. List the pharmacokinetic properties of given drugs.</li> <li>5. Correlate the indications /contra-indications of these drugs.</li> <li>6. List the common adverse effects of these drugs.</li> </ol>
<b>Drugs used in acid peptic disease - 1</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the pathophysiology of Acid-peptic disease.</li> <li>2. Classify the drugs to treat acid-peptic disease.</li> <li>3. Explain the MOA of Antacids (Aluminum Hydroxide), and Mucosal Protective Agents (Sucralfate, Misoprostol, and Bismuth subsalicylate).</li> <li>4. List the pharmacokinetics of these drugs.</li> <li>5. Correlate the indication/contra-indication of these drugs.</li> <li>6. Enumerate common adverse effects of these drugs.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Drugs used in acid peptic disease - 2</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Recall the classification of drugs used to treat acid-peptic disease.</li> <li>2. Explain the mode of action of PPI (Omeprazole), H<sub>2</sub> receptor blockers (Cimetidine)</li> <li>3. List the pharmacokinetics of these drugs.</li> <li>4. Correlate the indication/contra-indication of these drugs.</li> <li>5. Enumerate common adverse effects of these drugs.</li> <li>6. Discuss the Drug-Drug interactions of Omeprazole and Cimetidine.</li> </ol>
<b>Drugs used to treat inflammatory bowel disease</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the pathophysiology of Inflammatory bowel disease (IBD).</li> <li>2. Classify the drugs used to treat IBD.</li> <li>3. Explain the mode of action of Mesalamine and sulfasalazine.</li> <li>4. List the pharmacokinetics of these drugs.</li> <li>5. List the common adverse effects of these drugs.</li> <li>6. List the contraindications of these drugs.</li> <li>7. List the common drug interactions associated with the use of Mesalamine and sulfasalazine.</li> <li>8. Describe the pharmacological role of Glucocorticoids and Immunomodulators in the treatment of IBD.</li> </ol>
<b>Drugs used to treat irritable bowel syndrome</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline pathophysiology of irritable bowel syndrome (IBS).</li> <li>2. Classify the drugs used to treat IBS.</li> <li>3. Explain the mode of action of Alosetron &amp; Lubiprostone.</li> <li>4. List the pharmacokinetics of these drugs.</li> <li>5. List the common adverse effects of these drugs.</li> <li>6. List the contraindications of these drugs.</li> <li>7. Describe the pharmacological role of Anticholinergic and anti-diarrheal in the treatment of IBS.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Anti-diarrheal agents</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the pathophysiology of “Diarrhea”.</li> <li>2. Classify anti-diarrheal drugs with examples.</li> <li>3. Explain the mechanism of action of Loperamide and Diphenoxylate,</li> <li>4. List the pharmacokinetics of these drugs.</li> <li>5. List their clinical uses, common adverse effects, and contraindications.</li> <li>6. Discuss the role of anti-microbial drugs used in treatment of infectious diarrhea.</li> </ol>
<b>Laxatives</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the pathophysiology of “Constipation”.</li> <li>2. Classify Laxatives.</li> <li>3. Explain the Mechanism of Action of senna, lactulose, and Psyllium.</li> <li>4. List the pharmacokinetics of senna, lactulose, and Psyllium.</li> <li>5. List the common adverse effects and contraindications of senna, lactulose, and Psyllium.</li> </ol>
<b>Pancreatic enzyme supplements</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the role of the exocrine pancreas in digestion.</li> <li>2. List the signs and symptoms of exocrine pancreatic insufficiency.</li> <li>3. Discuss the role of Pancreatin &amp; Pancrelipase supplements in Pancreatic enzyme replacement therapy.</li> <li>4. List the pharmacokinetics of these supplements.</li> <li>5. List the common adverse effects of these supplements.</li> </ol>

## Pharmacology

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Bile acid agents (for gallstones &amp; primary biliary cirrhosis)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the role of bile acids in digestion.</li> <li>2. Outline the pathophysiology of Gallstones and Primary Biliary Cirrhosis.</li> <li>3. Explain the mechanism of action of Ursodiol and obeticholic acid.</li> <li>4. List the pharmacokinetics of Ursodiol and obeticholic acid.</li> <li>5. List the clinical uses and common adverse effects of Ursodiol and Obeticholic acid.</li> </ol>
<b>Drugs used to treat variceal hemorrhage</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Outline the pathophysiology of Variceal Hemorrhage.</li> <li>2. List the Signs and Symptoms of upper GI bleeding.</li> <li>3. Explain the causes of Variceal Hemorrhage.</li> <li>4. Discuss the role of Octreotide, Somatostatin, Vasopressin, and Terlipressin in the management of Variceal Hemorrhage.</li> <li>5. List the pharmacokinetics of these drugs.</li> <li>6. List the clinical uses and common adverse effects of these drugs.</li> </ol>

## Pharmacology

At the end of these 1 ½ hour practical sessions, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to intravenous and oral solutions along with different types</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define the solution.</li> <li>2. List the components of a solution.</li> <li>3. List various types of solution according to composition</li> <li>4. List various types of solution according to tonicity</li> <li>5. Give examples of the various types of intravenous and oral solutions</li> </ol>
<b>Preparation and dispensing of homemade ORS</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. List the ingredients of ORS.</li> <li>2. List the uses of ORS.</li> <li>3. Demonstrate the steps of dispensing and preparation of ORS.</li> </ol>
<b>Preparation and dispensing of gel used in case of aphthous ulcer.</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ul style="list-style-type: none"> <li>• Define Gel.</li> <li>• Write down the composition of the gel used in Aphthous ulcer.</li> <li>• List the uses of the gel used in Aphthous Ulcers.</li> <li>• Draw the label of the gel used in Aphthous Ulcer</li> </ul>
<b>Role of Milk Thistle (Silybum Marianum) in the management of Liver diseases</b>	<b>Practical</b> <b>(Task-based learning)</b>	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define Phytotherapy</li> <li>2. Discuss the importance of Phytotherapy.</li> <li>3. List the active constituents of Milk Thistle</li> <li>4. List the uses of Milk Thistle.</li> <li>5. Discuss the pharmacological role of Milk Thistle in the management of liver disease.</li> <li>6. List the adverse effects of Milk Thistle.</li> <li>7. List the drug interactions and precautions for the use of Milk Thistle.</li> </ol>

## Pharmacology

At the end of these 1 ½ tutorials, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Prescription writing of Anti-emetics</b>	<b>Tutorial</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define Emesis.</li> <li>2. List the factors that cause emesis.</li> <li>3. Discuss the pharmacokinetics and pharmacodynamics of Cyclizine, Chlorpromazine.</li> <li>4. Write down the prescription of emesis.</li> </ol>
<b>Prescription writing of Acute Gastroenteritis</b>	<b>Tutorial</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define Acute Gastroenteritis.</li> <li>2. Describe the role of I/V fluids in the management of acute Gastroenteritis.</li> <li>3. Write down the pharmacological management of acute Gastroenteritis.</li> <li>4. Write down the prescription of the given case of acute Gastroenteritis.</li> </ol>
<b>Prescription writing of Peptic ulcer</b>	<b>Tutorial</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define peptic ulcer.</li> <li>2. List the signs and symptoms of peptic ulcer.</li> <li>3. Discuss the pharmacokinetics and pharmacodynamics of Esomeprazole, Ranitidine, and Sucralfate.</li> <li>4. Write down the prescription of the given case.</li> </ol>
<b>Prescription writing of constipation</b>	<b>Tutorial</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define constipation.</li> <li>2. Discuss the role of stool softeners (docusate sodium), lubricants (mineral oils), and prokinetic agents (Metoclopramide) in the treatment of Constipation.</li> <li>3. Write down the prescription of the given case of Constipation.</li> </ol>

## Pharmacology

At the end of these 1 ½ tutorials, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Prescription writing of Inflammatory bowel disease (IBD)</b>	<b>Tutorial</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define Inflammatory bowel disease.</li> <li>2. Discuss the pharmacological management of IBD.</li> <li>3. Discuss the rationale for prescribing the drugs for the pharmacological management of the given case of IBD.</li> <li>4. Write down the prescription of the given case.</li> </ol>
<b>Prescription writing on Irritable bowel syndrome (IBS)</b>	<b>Tutorial</b> (Task-based learning)	1 ½ hour	<ol style="list-style-type: none"> <li>1. Define irritable bowel syndrome (IBS)</li> <li>2. Discuss the pharmacological management of the given case of irritable bowel syndrome (IBS)</li> <li>3. Discuss the rationale for prescribing the drugs for the pharmacological management of the given case of irritable bowel syndrome (IBS)</li> <li>4. Write down the prescription of the given case.</li> </ol>



## Community Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Introduction to the Nutrition &amp; Macro Nutrients (Proteins/ Carbohydrates)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Nutrition, Nutrients, Food &amp; Diet</li> <li>2. Enumerate the classification of nutrients.</li> <li>3. Discuss the classification and functions of protein.</li> <li>4. Describe Carbohydrates and their functions.</li> </ol>
<b>Macro-Nutrients (Lipids &amp; Fats)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Lipids (Fats)</li> <li>2. Discuss the classification of lipids.</li> <li>3. Enumerate the functions of lipids.</li> </ol>
<b>Micro- Nutrients (Vitamins – A, D, E, K, B-complex, and C)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Vitamins</li> <li>2. Explain the classification of Vitamins.</li> <li>3. List the sources of vitamins and the important functions of vitamins.</li> <li>4. Discuss the prevention of vitamin deficiencies.</li> </ol>
<b>Micro- Nutrients (Minerals)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define minerals.</li> <li>2. Explain the classification of minerals.</li> </ol> <p>Discuss the sources and important functions of minerals</p>
<b>Balanced Diet / Malnutrition</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define a balanced diet.</li> <li>2. Discuss the nutritional requirements of macronutrients.</li> <li>3. Describe Malnutrition and its risk factors.</li> </ol> <p>List the types of malnutrition and explain the prevention of malnutrition.</p>

## Community Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Macronutrients Deficiencies (LBW, Marasmus, Kwashiorkor)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Enlist the risk factors of low birth weight and explain the prevention of it.</li> <li>2. Describe Protein Energy malnutrition and its types.</li> <li>3. Discuss the prevention of Protein Energy Malnutrition.</li> </ol>
<b>Micro – Nutrient Deficiencies (Fluorosis and Iodine Deficiencies)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss Iodine deficiency disorder and its etiology.</li> <li>2. Explain the prevention and control of iodine deficiency disorder.</li> <li>3. Describe fluorosis and its prevention and control.</li> </ol>
<b>Micro – Nutrient Deficiencies (Nutritional Anemia)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define nutritional anemia.</li> <li>2. List the causes of nutritional anemia.</li> <li>3. Discuss the prevention of nutritional anemia.</li> </ol>
<b>Acid peptic disease and its prevention</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define acid peptic disease.</li> <li>2. List causes and symptoms of acid peptic disease</li> <li>3. Discuss the prevention of acid peptic disease.</li> </ol>
<b>Food Poisoning/ Prevention &amp; control</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define food poisoning.</li> <li>2. Discuss the types of food poisoning (Food infection and food toxemia)</li> <li>3. Enlist the diseases caused by food contamination.</li> </ol>
<b>Preservation of food and food Adulteration</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the preservation of food.</li> <li>2. Define food adulteration.</li> <li>3. Explain the causes of food adulteration.</li> <li>4. Discuss the prevention of food adulteration</li> </ol>

## Community Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Typhoid / Cholera</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss Typhoid Fever, its etiology, and clinical features.</li> <li>2. Describe the prevention of typhoid fever.</li> <li>3. Enumerate the risk factors and clinical features of Cholera.</li> <li>4. Explain the prevention and control of cholera.</li> <li>5. Distinguish between cholera and food poisoning</li> </ol>
<b>Dysentery</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Discuss the types of dysentery and its etiology.</li> <li>2. Enumerate the clinical features of dysentery.</li> <li>3. Describe the prevention of dysentery</li> </ol>
<b>Hepatitis A/D/E Prevention and Control</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Hepatitis</li> <li>2. Explain the etiology of Hepatitis and list the types of hepatitis.</li> <li>3. Enlist the clinical features of Hepatitis A/D/E</li> <li>4. Discuss the prevention of Hepatitis A/D/E.</li> </ol>
<b>Hepatitis B/C Prevention and Control</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Enlist the causes of Hepatitis B and C</li> <li>2. Describe the clinical features of Hepatitis B and C.</li> <li>3. Discuss the prevention of Hepatitis B and C.</li> </ol>

## Otorhinolaryngology (ENT)

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Anatomy &amp; diseases of External Ear</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>By the end of the lecture, the student should be able to understand and discuss the clinical anatomy and functions of the external ear and various basic pathologies of the external ear like foreign bodies and wax and Otitis externa, its various types, and their management.</li> </ol>
<b>Anatomy of Middle Ear Cleft</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>By the end of the lecture on the middle ear, the student should be able to understand and discuss various important clinical landmarks and normal anatomical features of the middle ear cavity.</li> </ol>
<b>Physiology of Hearing &amp; Deafness</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>By the end of the lecture, the student should be able to understand and discuss the normal physiology of hearing.</li> <li>Also, he should understand the causes of deafness and how to prevent it.</li> </ol>
<b>Diseases of Middle Ear &amp; its Classification (Otitis Media)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>By the end of the lecture, the student should be able to understand and discuss the causes, clinical features, and investigations of Otitis Media.</li> </ol>
<b>Treatment &amp; complications of Otitis Media</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>By the end of the lecture, the student should be able to understand and discuss the treatment options of different types of Otitis media and its complications.</li> </ol>

## Otorhinolaryngology (ENT)

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Otosclerosis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. By the end of the lecture on Otosclerosis and its management, the student should be able to understand and discuss the causes, clinical features, investigations, and treatment options of Otosclerosis.</li> <li>2. They should also be able to understand different types of graphs on tympanograms and their causes.</li> </ol>
<b>Meniere's Disease</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. By the end of the lecture on Meniere's disease and its management, the student should be able to understand the anatomy and physiology of the inner ear and discuss the causes, clinical features, investigations, and treatment options available for Meniere's disease.</li> </ol>
<b>Inner Ear (Anatomy &amp; Physiology)</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. By the end of the lecture on the inner ear, the student should be able to understand the normal anatomy and function of labyrinth and the disease labyrinthitis, its types and clinical features and various treatment options to control this disease.</li> <li>2. Also, he should be able to understand and discuss the Physiology of balance.</li> </ol>

## Ophthalmology (Eye)

At the end of the module, the student should be able to demonstrate his knowledge of the following, whichever suitable tool of assessment is employed.

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Eye Lid - I</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Blood supply, innervation, and lymphatic drainage of the eyelids.</li> <li>2. Tissue layers of the eyelids.</li> <li>3. Normal position of the eyelids. Lid margins, and the eyelashes.</li> <li>4. Muscles involved in opening and closing of the eyelids.</li> <li>5. Broad classification headings of the eyelid disorder according to the pathogenesis.</li> </ol>
<b>Eye Lid – II</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Definition of blepharitis.</li> <li>2. Types of blepharitis with signs and symptoms of each type.</li> <li>3. Principals of management of the two types of blepharitis.</li> <li>4. Etiology, basic pathology, signs and symptoms, and management of sty (Hordeolum Externum).</li> <li>5. Cause, basic pathology, and management of infected chalazion (Hordeolum Internum).</li> <li>6. Differences between sty and chalazion.</li> </ol>

## Ophthalmology (Eye)

At the end of the module, the student should be able to demonstrate his knowledge of the following, whichever suitable tool of assessment is employed.

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Eye Lid – III</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Clinical appearance, behavior, and management of Basal Cell Carcinoma.</li> <li>2. Knowledge that Squamous Cell Carcinoma and Adenocarcinomas are the second most common tumors.</li> <li>3. Knowledge that it is possible that <i>rarely</i> any type of tumor can arise from any tissue the eye lids are made of.</li> <li>4. Definition, common causes, complications, and principles of management of Entropion, Ectropion, and Trichiasis.</li> <li>5. Definition of ptosis, knowledge that it can be congenital and acquired, and that a unilateral congenital ptosis can produce amblyopia unless surgically corrected before 7 years of age.</li> </ol>
<b>Lacrimal Apparatus</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Composition of the tear film.</li> <li>2. Formation of different elements of tear film.</li> <li>3. Normal production of different elements of the tear film.</li> <li>4. Normal drainage of tears.</li> <li>5. Common causes and clinical features of dry eyes.</li> <li>6. Principles of management of dry eyes.</li> <li>7. Common systemic associations of dry eye.</li> <li>8. Difference between epiphora and lacrimation.</li> <li>9. Congenital and acquired blocked nasolacrimal blockage.</li> <li>10. Clinical features and management of acute &amp; chronic dacryocystitis.</li> <li>11. Basic principles of dacryo-cysto rhinotomy.</li> </ol>

## Ophthalmology (Eye)

At the end of the module, the student should be able to demonstrate his knowledge of the following, whichever suitable tool of assessment is employed.

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Sclera &amp; Episclera</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Gross and microscopic anatomy of sclera.</li> <li>2. Functions of sclera.</li> <li>3. General clinical features of episcleritis.</li> <li>4. General clinical features of different types of scleritis.</li> <li>5. Systemic disease associations of scleritis.</li> <li>6. Principles of management of scleritis.</li> </ol>
<b>Ocular Therapies</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Pharmacology, mode of administration, indication, and side effects of drugs used in the treatment of common ocular disorders i.e., antibiotics, antivirals, antifungals, antiglaucoma, local anesthetics, steroid, mydriatic, cycloplegic &amp; Fluorescein dyes.</li> </ol>
<b>Refractive Errors</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Normal optics of a healthy eye.</li> <li>2. How myopia, hypermetropia, astigmatism, aphakia, and presbyopia occur.</li> <li>3. How to manage myopia, hypermetropia, astigmatism, and presbyopia, (general principals).</li> <li>4. Advantages and disadvantages of spectacles, contact lenses, and refractive surgery.</li> <li>5. Basic principles of refractive surgery.</li> </ol>
<b>Cornea - I</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Functions of cornea.</li> <li>2. Name the different layers of cornea (from anterior to posterior).</li> <li>3. Main histological characteristics of each layer.</li> <li>4. Functions of each layer.</li> <li>5. How each layer responds to injury.</li> <li>6. How the cornea is kept clear.</li> </ol>

## Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Esophagitis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Esophagitis and its types.</li> <li>2. Enlist the clinical features with which the patient presents.</li> <li>3. Formulate a proper plan for the diagnosis.</li> <li>4. How to prevent them.</li> <li>5. Briefly describe the management plan.</li> </ol>
<b>Malabsorption Syndrome</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define acute and chronic diarrhea and its classification.</li> <li>2. Define Celiac disease and its types.</li> <li>3. Describe its clinical features &amp; diagnosis.</li> <li>4. Outline the management plan &amp; its complications.</li> </ol>
<b>Acute Viral Hepatitis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define Hepatitis and differentiate between Acute and Chronic Viral Hepatitis.</li> <li>2. Define etiologic factor of AVH.</li> <li>3. Discuss the pathophysiology of Hepatitis.</li> <li>4. Enlist the clinical features with which the patient presents.</li> <li>5. Formulate a proper plan for the diagnosis of viral hepatitis as well as specific investigations to explore the etiology as well as tests to determine possible complication.</li> <li>6. Prescribe symptomatic as well as curative treatment.</li> </ol>

## Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Acute Pancreatitis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"><li>1. Define Acute Pancreatitis &amp; what the risk factors are.</li><li>2. Enlist the clinical presentation &amp; how to diagnose it.</li><li>3. What are the criteria for assessing its severity?</li><li>4. Outline the management plan &amp; its complications.</li></ol>



## Surgery

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Esophagus, its surgical anatomy, and common motility disorder</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the applied surgical anatomy of the Esophagus.</li> <li>2. Identify some potential aetiologies of Esophageal motility disorder.</li> <li>3. List the management options available.</li> </ol>
<b>Intestinal obstruction</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Explain the etiology and pathology of common large intestinal conditions causing an obstruction.</li> <li>2. Discuss the principles of investigations in intestinal obstruction.</li> <li>3. Explain the importance of nonsurgical management of intestinal obstruction.</li> </ol>
<b>Liver trauma and various imaging techniques used in liver disorder</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Comprehend the various aspects of Liver trauma, diagnosis, and management of Liver trauma.</li> <li>2. Discuss the various investigation used in liver disease.</li> </ol>
<b>Surgical anatomy &amp; physiology of Gall bladder and Congenital abnormality of gall bladder &amp; bile duct</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the applied physiology and anatomy of Gall bladder.</li> <li>2. Summarize the common congenital abnormalities of Gall bladder and Bile duct with their diagnosis and outcome.</li> </ol>

## Evidence-based Medicine

At the end of these 1-hour interactive lectures, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>How to do an Effective Literature Search</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Use MEDLINE: Medical Subject Headings (MeSH), Boolean operators, limits, textword searching, links to full text, reformulation of strategies for another database, and modification.</li> <li>2. Implement the strategies for future patient encounters.</li> </ol>
<b>How to search Evidence on Prevention</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Identify and develop a well-articulated question about either patient care issues or research issues using the PICO Worksheet.</li> <li>2. Determine the study question category as prevention.</li> </ol>
<b>How to search Evidence on Diagnosis</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Identify and develop a well-articulated question about patient disorder issues or research issues using the PICO Worksheet.</li> <li>2. Determine the study question category as diagnosis.</li> </ol>

## Obstetrics & Gynecology

At the end of this 1-hour interactive lecture, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>Pregnancy-related hepatic disorders</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Describe the physiological changes of the Liver during pregnancy.</li> <li>2. Classify pregnancy-related Liver disorders.</li> <li>3. Explain HELLP Syndrome.</li> </ol>

## Pediatrics

At the end of this 1-hour interactive lecture, the students of 4th year MBBS will be able to:

Topic	Teaching Strategy	Duration	Learning Objectives
<b>PCM Diarrhea</b>	<b>Interactive Lecture</b>	1 hour	<ol style="list-style-type: none"> <li>1. Define diarrhea and its types.</li> <li>2. Recognize clinical signs of dehydration.</li> <li>3. Assess diarrhea in sick children.</li> <li>4. Assess dehydration in young infants and sick children.</li> <li>5. Classify diarrhea and severity of dehydration.</li> <li>6. Provide management plans A, B and C for dehydration.</li> <li>7. Counsel the caregiver about home treatment for diarrhea and dehydration.</li> </ol>

## ASSESSMENT METHODS

### 1. Formative Assessment

- Assignment
- Quiz (face-to-face or online)
- Student Presentation
- Class participation in small group discussions and case-based learning sessions
- Project / Poster

\* 4<sup>th</sup> Year MBBS Students are directed to maintain their practical journals and logbooks for formative assessment.

### 2. Summative Assessment

- Modular Exam:

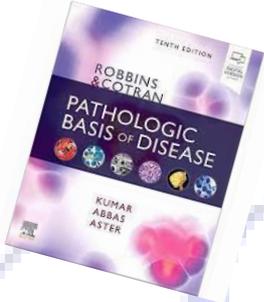
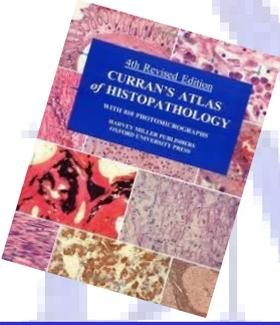
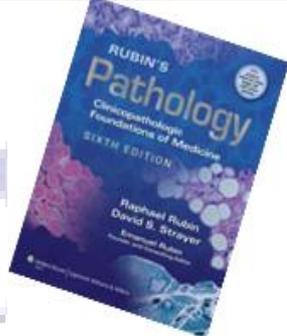
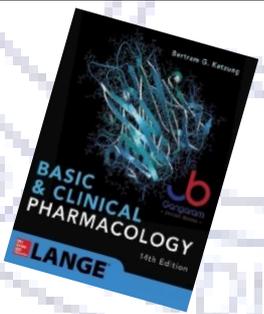
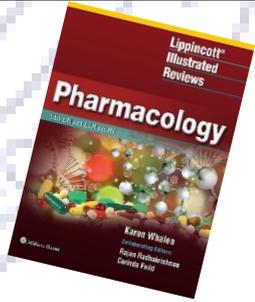
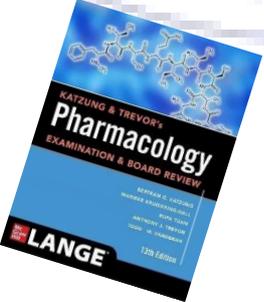
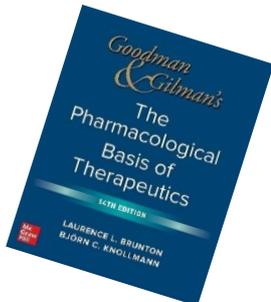
With reference to the Assessment Policy of BMC, dated 14-06-21) (Point 5: Process; Summative assessment points a, b & d); a single modular exam will be conducted at the end of each module which will include all the subjects of basic medical sciences.

\*Module exam will be assessed by any of the following assessment methods:

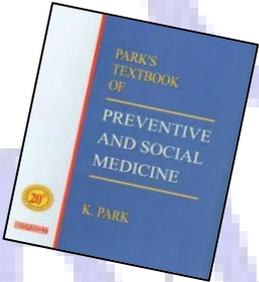
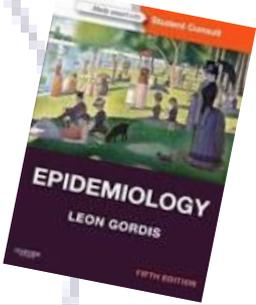
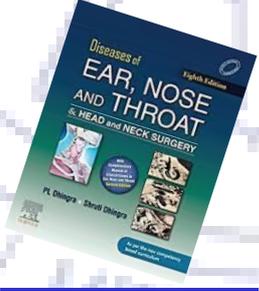
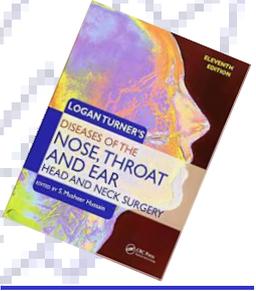
- BCQ
- SEQ
- OSPE
- Annual Exam:
  - Internal Evaluation = 20%
  - Final Exam= 80%Theory: MCQs, EMQs & SAQs  
Practical: Viva & OSPE



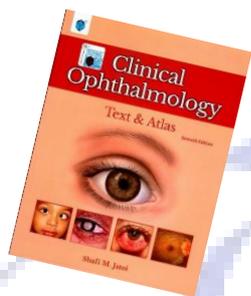
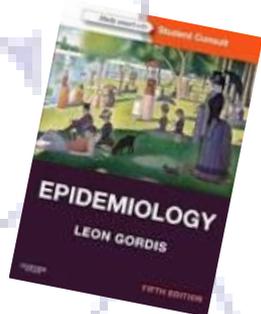
## SUGGESTED READING BOOKS

PATHOLOGY			
<p><b>Robbins &amp; Cotran Pathologic Basis of Disease</b> 10<sup>th</sup> Edition Kumar, Abbas &amp; Aster</p>		<p><b>Pathology Illustrated</b> 8<sup>th</sup> Edition Alasdair D. T. Govan</p>	
<p><b>Curran's Atlas of Histopathology</b> 4<sup>th</sup> Edited Edition Robert Curran</p>		<p><b>Rubin's Pathology: Clinicopathologic Foundations of Medicine</b> 6<sup>th</sup> Edition Raphael Rubin &amp; David S. Strayer</p>	
PHARMACOLOGY & THERAPEUTICS			
<p><b>Basic and Clinical Pharmacology</b> 14<sup>th</sup> Edition Bertram Katzung</p>		<p><b>Lippincott's illustrated review of Pharmacology</b> 7<sup>th</sup> Edition Karen Whalen</p>	
<p><b>Katzung and Trevor's Pharmacology Examination and Board Review</b> 14<sup>th</sup> Edition Katzung and Trevor</p>		<p><b>Goodman &amp; Gilman The Pharmacological Basis of Therapeutics</b> 14<sup>th</sup> Edition Laurence L Brunton &amp; Bjorn C. Knollmann</p>	

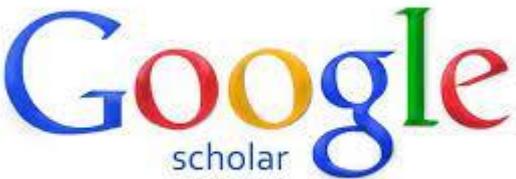
## SUGGESTED READING BOOKS

COMMUNITY MEDICINE			
<p><b>Public Health &amp; Community Medicine</b></p> <p>8<sup>th</sup> Edition</p> <p>M. Ilyas</p>		<p><b>Public Health &amp; Preventive Medicine</b></p> <p>13<sup>th</sup> Edition</p> <p>Maxcy- Rosenau-Last</p>	
<p><b>Park's Textbook of Preventive &amp; Social Medicine</b></p> <p>20<sup>th</sup> Edition</p> <p>K. Parks</p>		<p><b>Epidemiology</b></p> <p>5<sup>th</sup> Edition</p> <p>Leon Gordis</p>	
ENT			
<p><b>Diseases of Ear, Nose and Throat</b></p> <p>8<sup>th</sup> Edition</p> <p>P.L. Dhingra &amp; Shruti Dhingra</p>		<p><b>Logan Turner's Diseases of the Nose, Throat and Ear, Head and Neck Surgery</b></p> <p>11<sup>th</sup> Edition</p> <p>Musheer Hussain</p>	

## SUGGESTED READING BOOKS

OPHTHALMOLOGY			
<p><b>Clinical Ophthalmology</b> 4<sup>th</sup> Edition Shafi M. Jatoi</p>		<p><b>ABC of Eyes</b> 4<sup>th</sup> Edition P. Shah, P.T. Khaw &amp; A.R. Elkington</p>	
RESEARCH METHODOLOGY			
<p><b>Introduction to Research in Health Sciences-</b> Stephen Polgar, Shane A. Thomas</p>		<p><b>Epidemiology</b> 5<sup>th</sup> Edition Leon Gordis</p>	

## SUGGESTED WEBSITES & SEARCH ENGINES

	
<p><a href="https://www.medscape.com">https://www.medscape.com</a></p>	<p><a href="https://www.PathologyOutlines.com">https://www.PathologyOutlines.com</a></p>
	
<p><a href="https://pubmed.ncbi.nlm.nih.gov">https://pubmed.ncbi.nlm.nih.gov</a></p>	<p><a href="https://scholar.google.com">https://scholar.google.com</a></p>
	
<p><a href="https://medlineplus.gov">https://medlineplus.gov</a></p>	<p><a href="https://medicine.nus.edu.sg/pathweb">https://medicine.nus.edu.sg/pathweb</a></p>



**Baqai Medical College**  
**Baqai Medical University**

51-Deh Tor, Gadap Road, Superhighway. P.O Box: 2407, Karachi-75340, Pakistan.

(092-21)34410-293 to 298, 34410-427 to 430

Fax: (092-21)34410-317, 34410-431

Email: [info@baqai.edu.pk](mailto:info@baqai.edu.pk), Web: [www.baqai.edu.pk/](http://www.baqai.edu.pk/)