Department of Medical Education (DME)

Gastrointestinal Tract Module

Study Guide
Second Year MBBS 2021 - 2022

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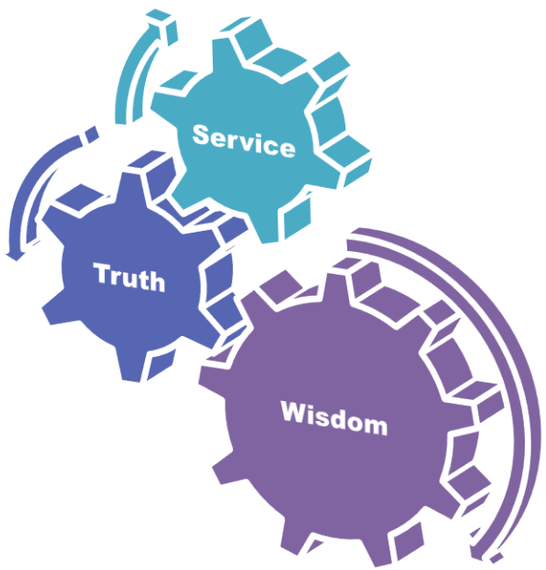
University Moto, Vision, Values & Goals

RMU Motto



Mission Statement

To impart evidence-based research-oriented health professional education in order to provide best possible patient care and inculcate the values of mutual respect, ethical practice of healthcare and social accountability.

Vision and Values

Highly recognized and accredited centre of excellence in Medical Education, using evidence-based training techniques for development of highly competent health professionals, who are lifelong experiential learner and are socially accountable.

Goals of the Undergraduate Integrated Modular Curriculum

The Undergraduate Integrated Learning Program is geared to provide you with quality medical education in an environment designed to:

- Provide thorough grounding in the basic theoretical concepts underpinning the practice of medicine.
- Develop and polish the skills required for providing medical services at all levels of the Health care delivery system.
- Help you attain and maintain the highest possible levels of ethical and professional conduct in your future life.
- Kindle a spirit of inquiry and acquisition of knowledge to help you attain personal and professional growth & excellence.

Second Year MBBS 2023

Study Guide

GIT Module

Discipline wise Details of Modular Content

Block	Module	General Anatomy	Embryology	Histology	Gross Anatomy
1	Anatomy	-	Tongue, Body Cavities, Gastrointestinal System	Digestive Tract & associated organs (Junqueira)	Oral Cavity, Abdomen and associated visceras
	Biochemistry	Carbohydrate metabolism, GIT digestive juices, Digestion and absorption, Nutrition			
	Physiology	General Principles of Gastrointestinal Function—Motility, Nervous Control, and Blood Circulation Propulsion and Mixing of Food in the Alimentary Tract Secretory Functions of the Alimentary Tract, Digestion and Absorption in the Gastrointestinal Tract Physiology of Gastrointestinal Disorders			
	Bioethics & Professionalism	• Pakistan Medical & dental council Code of Ethics			
	Research (IUGRC)	• Introduction to descriptive statistics • Classification of different types of Data • Scales of Data measurement • Measures of central Tendency • Compute & Interpret measures of central tendency • Measure of dispersion/ Secondary data Analysis			
	Radiology & Artificial Intelligence	• Medical imaging of abdomen- I • Medical imaging of abdomen-II			
	Family Medicine	• Common Abdominal diseases			
	Vertical components	• The Holy Quran Translation Component			
	Vertical Integration	Clinically content relevant to GIT module • Eating disorders (Psychiatry) • Concept of health & disease (Community medicine) • Epidemiology of infectious diseases & Basic Concepts (Community medicine) • Dysphagia (Medicine) • Pathologies of Salivary glands (Pathology) • Abdominal hernias (Surgery)			

		• Abdominal incisions (Surgery) • Peptic ulcer (Medicine) • Surgical complications of Peptic Ulcer Disease (Surgery) • Pakistan Medical & dental council Code of Ethics (Community Medicine) • Jaundice (Medicine) • Gall stones & Cholecystectomy (Surgery) • Acute & Chronic Diarrhea (Pediatrics) • Acute Abdominal Pain (Surgery) • Irritable Bowel Syndrome (Medicine) • Antidiarrheal drugs & drugs for Peptic Ulcer Disease (Pharmacology) • Common GIT problems in pregnancy (Hyperemesis gravidarum, GERD, Constipation, hemorrhoids) (Gynae and OBS) • Pathologies of gallbladder and pancreas (Pathology) • Anal fissure, Hemorrhoids, Fistula in ano (Surgery)

Table of Content

GIT Module Team

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Co-coordinator : Dr. Ali Raza
Reviewed by : Module Committee

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Module I -GIT Module

Rationale: GIT module has been designed to unravel the basic structure function of the alimentary system along with its embryological development and anomalies. The composition of the food is complex and little of it is water soluble. Therefore, it cannot enter body fluids. Hence it needs to be broken down into its chemical components before it can be absorbed. Four activities of the GIT tract can be identified for this process to occur. These are:

Motility: The term is used to describe the movements of the GIT tract. These movements are responsible for breaking down and pushing the food along the alimentary tract and to its destination as feces.

Secretion: Different secretion of the GIT are concerned with breakdown of food into its digestive particles

Digestion: Break down of food into small pieces. It is produced by the mechanical activity of the alimentary tract. The surface of the food is exposed to enzymatic activity.

Absorption: The transfer of nutrients or the digestive products from the lumen to blood or the lymph.

Disruption of any of its activities can lead to disease states such as pain, peptic ulceration, diarrhea & constipation.

Coordination of all these functions is brought about hormones of GIT and exocrine pancreas.

Module Outcomes

At the end of this module the student should be able to:

Knowledge

- Explain the structural & developmental organization of GIT.
- Explain the composition, functions, mechanism & control of following gastrointestinal secretions: salivary, gastric, pancreatic, biliary, small & large intestines.
- Explain the swallowing and motility patterns in the GIT & its role in mixing, propulsion & evacuation of feces.
- Describe the mechanism of absorption of various nutrients and their role in malabsorption syndrome.
- Explain the physiological anatomy, biochemistry functions and dysfunctions of Liver.
- Explain the formation, function & control of secretion of bile.
- Explain the GIT hormones (structure, function) & their role in secretion and motility.

- Apply the knowledge of the basic sciences to understand pathophysiology of common GIT diseases.
- Appreciate concepts & importance of
    - **Family Medicine**
    - **Biomedical Ethics**
    - **Artificial Intelligence**
    - **Research**

Skills

- Dissect various parts of GIT, and related structures including peritoneum, to demonstrate their gross Anatomy and relationship to each other.
- Identify different organs of GIT under microscope and on model.

Attitude

- Demonstrate a **professional attitude, team-building** spirit and **good communication skills.**

This module will run in 6 weeks duration. The content will be covered through introduction of topics. Instructional strategies are given in the timetable and learning objectives are given in the study guides. Study guides will be uploaded on the university website. Good luck!

SECTION - I

Terms & Abbreviations

Contents

Tables & Figures

Table1. Domains of Learning According to Blooms Taxonomy

Sr. #	Abbreviation	Domains of learning
1.	C	**Cognitive Domain:** knowledge and mental skills.
	• C1	Remembering
	• C2	Understanding
	• C3	Applying
	• C4	Analyzing
	• C5	Evaluating
	• C6	Creating
2.	P	**Psychomotor Domain:** motor skills.
	• P1	Imitation
	• P2	Manipulation
	• P3	Precision
	• P4	Articulation
	• P5	Naturalization
3.	A	**Affective Domain:** feelings, values, dispositions, attitudes, etc
	• A1	Receive
	• A2	Respond
	• A3	Value
	• A4	Organize
	• A5	Internalize

Teaching and Learning Methodologies / Strategies

Large Group Interactive Session (LGIS)

The large group interactive session is structured format of Prof Umar Model of Integrated lecture. It will the followed for delivery of all LGIS. The lecturer will introduce a topic or common clinical condition and explains the underlying phenomena through questions, pictures, videos of patients, interviews and exercises, etc. Students are actively involved in the learning process.

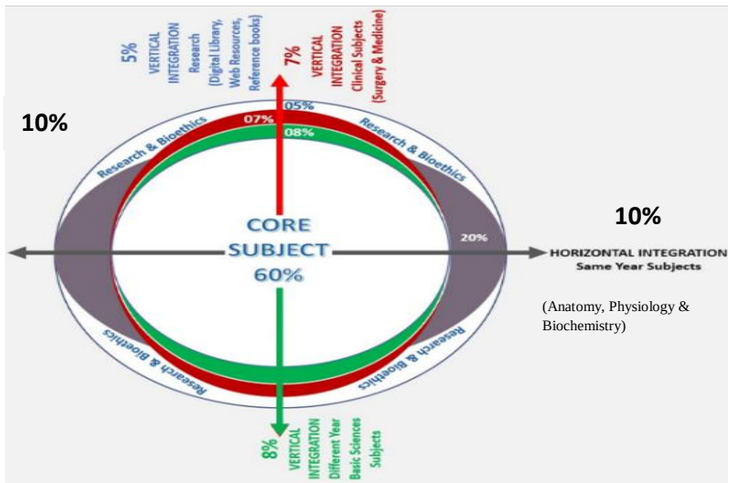


Figure 1. Prof Umar's Model of Integrated Lecture

Small Group Discussion (SGD)

This format helps students to clarify concepts acquire skills and attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics or power point presentations. Students exchange opinions and apply knowledge gained from lectures, SGDs and self study. The facilitator role is to ask probing questions, summarize and help to clarify the concepts.

Table 2. Standardization of teaching content in Small Group Discussions

S. No	Topics	Approximate %
1	Title Of SGD	
2	Learning Objectives from Study Guides	
3	Horizontal Integration	5%+5%=10%
4	Core Concepts of the topic	60%
5	Vertical Integration	20%
6	Related Advance Research points	3%
7	Related Ethical points	2%

Table 3. Steps of Implementation of Small Group Discussions

Step 1	Sharing of Learning objectives by using students Study guides	First 5 minutes
Step 2	Asking students pre-planned questions from previous teaching session to develop co-relation (these questions will be standardized)	5minutes
Step 3	Students divided into groups of three and allocation of learning objectives	5minutes
Step 4	ACTIVITY: Students will discuss the learning objectives among themselves	15 minutes
Step 5	Each group of students will present its learning objectives	20 min
Step 6	Discussion of learning content in the main group	30min
Step 7	Clarification of concept by the facilitator by asking structured questions from learning content	15 min
Step 8	Questions on core concepts	
Step 9	Questions on horizontal integration	
Step 10	Questions on vertical integration	
Step 11	Questions on related research article	
Step 12	Questions on related ethics content	
Step 13	Students Assessment on online MS teams (5 MCQs)	5 min
Step 14	Summarization of main points by the facilitator	5 min
Step 15	Students feedback on the SGD and entry into log book	5 min
Step 16	Ending remarks	

Self-Directed Learning (SDL)

- Self- directed learning is a process where students take primary charge of planning, continuing, and evaluating their learning experiences.
- Time Home assignment
- Learning objectives will be defined
- Learning resources will be given to students = Textbook (page no), web site
- Assessment:

  i Will be online on LMS (Mid module/ end of Module)

  ii.OSPE station

Case Based Learning (CBL)

- It's a learner centered model which engages students in discussion of specific scenarios that typically resemble real world examples.
- Case scenario will be given to the students
- Will engage students in discussion of specific scenarios that resemble or typically are real-world examples.
- Learning objectives will be given to the students and will be based on
  i. To provide students with a relevant opportunity to see theory in practice
  ii. Require students to analyze data in order to reach a conclusion.
  iii. Develop analytic, communicative, and collaborative skills along with content knowledge.

Problem Based Learning (PBL)

- Problem-based learning (PBL) is a student-centered approach in which students learn about a subject by working in groups to solve an open-ended problem.
- This problem is what drives the motivation and the learning.

The 7- Jump-Format of PBL (Masstricht Medical School)	
Step 7	Synthesize & Report
Step 6	Collect Information from outside
Step 5	Generate learning Issues
Step 4	Discuss and Organize Ideas
Step 3	Brainstorming to Identify Explanations
Step 2	Define the Problem
Step 1	Clarify the Terms and Concepts of the Problem Scenario
Problem- Scenario	

Figure 2. PBL 7 Jumps Model

Practical Sessions/Skill Lab (SKL)

Practical Session/ Skill Lab (SKL)	
Demonstration/ power point presentation 4-5 slide	10-15 minutes
Practical work	25-30 minutes
Write/ draw and get it checked by teacher	20-25 minutes
05 mcqs at the end of the practical	10 minutes
At the end of module practical copy will be signed by head of department	
At the end of block the practical copy will be signed by Head of Department Dean Medical education department QEC	

SECTION – II

Learning Objectives, Teaching Strategies & Assessments

Contents

- Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)
- Large Group Interactive Session:
  - Anatomy (LGIS)
  - Physiology (LGIS)
  - Biochemistry (LGIS)
- Small Group Discussions
  - Anatomy (SGD)
  - Physiology (SGD)
  - Biochemistry (SGD)
- Self-Directed Topic, Learning Objectives & References
  - Anatomy (SDL)
  - Physiology (SDL)
  - Biochemistry (SDL)
- Skill Laboratory
  - Anatomy
  - Physiology
  - Biochemistry

Horizontally Integrated Basic Sciences (Anatomy, Physiology & Biochemistry)

Anatomy Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Introduction to General Anatomy	• Define the term Anatomy and its various branches	C1	LGIS	SAQ MCQ VIVA
	• Define different terminologies related to Anatomy	C1		
	• Describe different Anatomical planes and directions in relation to anatomical position	C1		
	• Elaborate different phases in life span of man	C2		
	• Define basic tissues of human body	C1		
	• Discuss general outlines and functions of basic tissues	C2		
	• Describe formation of different systems of body	C1		
Embryology				
EMBRYOLOGY Development of Tongue	• Describe the development of pharyngeal apparatus	C1	LGIS	SAQ MCQ VIVA
	• Enlist the sources for development of different parts of tongue.	C2		
	• Explain the development of tongue along with its nerve supply.	C1		
	• Describe the congenital anomalies associated with tongue	C3		
	• Describe the developmental basis of physiological and biochemical mechanisms involved in perception and transmission of taste sensation	C2		
EMBRYOLOGY Development of Body cavities I & II	• Enumerate different body cavities	C1	LGIS	SAQ MCQ VIVA
	• Describe division of embryonic body cavity	C1		
	• Discuss formation and significance of pleuropericardial membranesand pleuroperitoneal membranes	C1		
	• Describe muscular ingrowth from Lateral body walls	C1		
	• Discuss positional changes and innervations of the Diaphragm	C1		
EMBRYOLOGY Development of Salivary glands	• Explain different stages of development of Salivary glands	C2	LGIS	SAQ MCQ VIVA
	• Enlist the sources for development of different types of Salivary glands.	C2		
	• Explain development of its nerve supply.	C2		
	• Describe the congenital anomalies associated with salivary glands	C3		

	• Describe the developmental basis of physiological and biochemical mechanisms associated with salivary glands	C2		
EMBRYOLOGY Development of Esophagus	• Discuss the formation of tracheoesophageal septum and its importance	C1	LGIS	SAQ MCQ VIVA
	• Describe salient features of esophageal development.	C1		
	• Describe congenital anomalies of esophagus.	C3		
	• Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of swallowing	C2		
EMBRYOLOGY Development of Stomach	• Explain the development of stomach	C1	LGIS	SAQ MCQ VIVA
	• Discuss rotations and positional shifts of stomach & their effect on nerve supply and peritoneal attachments	C1		
	• Explain formation of omental bursa.	C1		
	• Describe congenital anomalies of stomach	C3		
	• Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of digestion in the stomach	C2		
EMBRYOLOGY Liver	• Discuss pernicious anemia	C3	LGIS	SAQ MCQ VIVA
	• Describe formation of hepatic diverticulum	C1		
	• Describe histogenesis of liver during intrauterine life	C1		
	• Describe formation of various ligaments of liver.	C1		
	• Discuss congenital abnormalities of liver	C3		
	• Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of detoxification in the liver	C2		
EMBRYOLOGY Gall bladder, pancreas and Biliary apparatus	• Discuss development of Gall bladder	C1	LGIS	SAQ MCQ VIVA
	• Describe /congenital anomalies of gall bladder	C1		
	• Discuss development and congenital anomalies of pancreas	C1		
	• Describe development of extrahepatic biliary apparatus and its parts with abnormalities	C1		
	• Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of production of bile and pancreatic secretions	C2		
EMBRYOLOGY	• Describe development of mid gut, midgut loop and rotation of midgut loop.	C1	LGIS	SAQ

Development of small intestine	• Explain physiological umbilical hernia and return of mid gut to abdomen.	C1		MCQ VIVA
	• Describe fixation of intestines and transformations in peritoneal dispositions after mid gut loop return.	C1		
	• Describe congenital anomalies and clinical correlation of mid gut development.	C3		
	• Discuss clinical conditions related	C3		
EMBRYOLOGY Development of large intestine	• Enlist parts of large intestine.	C1	LGIS	SAQ MCQ VIVA
	• Describe partitioning of cloaca and cloacal membrane.	C1		
	• Describe development of anal canal.	C1		
	• Describe congenital anomalies of large intestine.	C3		
Histology				
HISTOLOGY: Tongue	• Discuss surfaces of tongue with their histological features	C1	LGIS	SAQ MCQ VIVA
	• Describe different papillae of tongue with their location & features	C1		
	• Explain histological features of taste buds	C1		
	• Discuss leukoplakia and oral thrush	C3		
HISTOLOGY Salivary glands	• Enlist major salivary glands	C1	LGIS	SAQ MCQ VIVA
	• Explain histological structure of salivary glands	C1		
	• Discuss different cells forming parenchyma of salivary glands	C1		
	• Discuss histology of duct system	C1		
	• Differentiate between major salivary glands on histological basis	C2		
	• Discuss effects of viral infections on salivary glands	C3		
HISTOLOGY General organization of G.I. T	• Describe the developmental basis of physiological and biochemical mechanisms involved in perception and transmission of taste sensation	C2	LGIS	SAQ MCQ VIVA
	• Describe the histological characteristics of each layer with functional significance	C1		
	• Discuss associated clinicals (megacolon, chagas disease)	C3		
HISTOLOGY Esophagus	• Describe the histological layers of esophagus.	C1	LGIS	SAQ MCQ
	• Compare between various portions of esophagus histologically.	C2		
	• Discuss GERD	C3		

				VIVA
HISTOLOGY Stomach	• Describe the histological layers of different parts of stomach	C1	LGIS	SAQ MCQ VIVA
	• Describe histological differences of different parts of the gastric glands	C1	LGIS	SAQ MCQ VIVA
	• Describe the structure and function of different cells of gastric glands	C1		
	• Explain clinical conditions associated with stomach histologically	C3		
	• Discuss pernicious anemia	C3		
HISTOLOGY Liver	• Discuss in detail the histological organization of liver	C1	LGIS	SAQ MCQ VIVA
	• Explain the structure of liver lobule, portal triads& hepatic acinus and its functional importance	C1		
	• Discuss histological features of hepatocytes.	C1		
	• Explain Hepatic cords, central vein, portal triad, hepatic venules, hepatic arterioles, bile duct & liver sinusoids.	C1		
	• Discuss the blood supply of the liver.	C1	LGIS	SAQ MCQ VIVA
	• Explain different cells of the liver tissue	C1		
	• Describe clinical aspects of liver on histological grounds	C1		
	• Discuss cirrhosis, fatty liver	C3		
	• Discuss jaundice	C3		

Physiology Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Learning Domain	Teaching Strategy	Assessment Tools
	• Explain the physiologic anatomy of GIT	C2		
	• Summarize the functions of GIT	C1		
	• Explain the electrical activity of GIT smooth muscle	C2		
	• Describe the concept of slow waves and spike potentials	C1		
	• Explain resting membrane potential and factors affecting RMP	C2		

Introduction to GIT, Electrical activity in GIT Movements of GIT	• Explain role of calcium ions in muscle contraction	C2	LGIS	SEQ MCQ VIVA
	• Describe tonic contraction in GIT smooth muscles	C1		
	• Enumerate different types of movements in GIT	C1		
	• Define propulsive movements	C1		
	• Define mixing movements	C1		
	• Describe sites of peristaltic movement in GIT	C1		
	• Describe stimulus, mechanism and direction of peristaltic movement	C1		
	• Discuss role of Myenteric plexus in peristaltic movement	C2		
	• Explain peristaltic reflex and Law of gut	C2		
	• Describe mechanism and function performed by mixing movements	C1		
Enteric nervous system and GIT reflexes	• Describe physiological anatomy of enteric nervous system	C1	LGIS	SEQ MCQ VIVA
	• Enlist functions of enteric nervous system	C1		
	• Compare and contrast Myenteric and Meissner‘s plexus	C2		
	• Enumerate neurotransmitters of enteric nervous system	C1		
	• Describe the autonomic regulation of enteric nervous system	C1		
	• Enumerate afferent sensory connections of enteric nervous system	C1		
	• Discuss the physiology of GIT reflexes	C2		
	• Explain GIT reflexes integrated at the level of gut wall, prevertebral sympathetic ganglia and spinal cord/brain stem	C2		
Control of GIT motility and factors affecting GIT blood flow	• Enumerate hormones of GIT	C2	LGIS	SEQ MCQ VIVA
	• Describe the hormonal control of GIT motility	C1		
	• Explain site of secretion, stimuli for secretion and actions of Gastrin, Cholecystokinin, Secretin, Gastric inhibitory peptide and Motilin	C2		
	• Discuss the factors affecting GIT blood flow	C2		
	• Recall anatomy of GIT blood supply	C1		
	• Explain splanchnic circulation and hepatic portal circulation	C2		
	• Describe the significance of blood flow to liver through portal vein	C1		
	• Describe special organization of blood flow through intestinal villus	C1		
	• Explain factors affecting gastrointestinal blood flow	C2		
	• Describe counter current blood flow in villi.	C1		
	• Explain nervous control of GIT blood supply	C2		
	• Discuss physiological importance of sympathetic vasoconstriction in GIT under special conditions	C2		

Swallowing1 and (Mastication and Saliva)	• Describe the secretion and composition of saliva and its physiologic roles	C1	LGIS	SEQ MCQ VIVA
	• Describe the nervous regulation of saliva	C1		
	• Describe mastication	C1		
	• Enumerate functions of mastication	C1		
	• Explain role of teeth and muscles of mastication	C2		
	• Describe the steps and nervous control center of chewing reflex	C1		
	• Introduce swallowing	C1		
	• Enumerate stages of swallowing (voluntary/involuntary)	C1		
	• Explain in detail each stage of swallowing ○ Voluntary stage Mechanism ○ Pharyngeal stage (reflex act) ▪ Stimulus, receptors, afferents, center, efferent, effectors, response ▪ Relate pharyngeal stage with process of respiration ▪ Esophageal stage	C2		
	• Primary peristalsis Secondary peristalsis (stimulus, afferent, center, efferent, response)	C2		
Swallowing -II	• Describe physiological anatomy and function of Lower esophageal sphincter	C1	LGIS	SEQ MCQ VIVA
	• Explain receptive relaxation of stomach with nervous pathway	C2		
	• Describe physiological anatomy and function of distal end of esophagus	C1		
Clinical disorders of swallowing (Achalasia cardia, vomiting & nausea)	• Define Achalasia cardia	C1	LGIS	SEQ MCQ VIVA
	• Describe causes, effects and treatment of achalasia cardia	C1		
	• Define vomiting	C1		
	• Describe stimuli & nervous pathway of vomiting	C1		
	• Discuss act of vomiting	C2		
	• Describe chemoreceptor trigger zone	C1		
	• Define nausea	C1		
	• Enlist causes of nausea	C2		
Regulation of Stomach emptying	• Discuss in detail gastric factors that promote emptying and duodenal factors that inhibit emptying	C2	LGIS	SEQ MCQ VIVA
	• Explain the role of enterogastric nervous reflexes and hormonal	C2		

	feedback			
Motor functions of stomach	• Recall physiological anatomy of stomach	C1	LGIS	SEQ MCQ VIVA
	• Describe motor functions of stomach in detail 1. Storage 2. Mixing and propulsion of food chyme and Hunger contractions 3. Stomach emptying 4. Role of pyloric pump	C1		
	• Discuss role of pyloric sphincter	C2		
Gastric juice-I and Digestion in stomach Physiological barrier protecting development of peptic ulcer	• Describe the secretion of gastric juice. a. Describe the basic mechanism of HCl secretion. b. Describe the secretion and activation of pepsinogen c. Describe the secretion of intrinsic factor d. Describe the secretion of mucous and gastrin e. Describe the regulation of gastric acid and pepsinogen secretion	C1	LGIS	SEQ MCQ VIVA
	• Summarize the digestive process occurring in stomach	C1		
	• Discuss the role of gastric juice, hormones and enzymes acting in stomach	C2		
	• Discuss sites, causes and physiological factors preventing peptic ulcer	C2		
Liver & gall bladder, liver and biliary secretions	• Recall physiological anatomy of liver & portal circulation	C1	LGIS	SEQ MCQ VIVA
	• Describe in detail metabolic and non metabolic functions of liver	C1		
	• Explain the mechanism of secretion of bile.	C2		
	• Explain the functions of biliary tree.	C2		
	• Describe the composition of bile.	C1		
	• Explain the role of bile in fat digestion.	C2		
	• Explain the formation of gall stones.	C2		
LFTs and jaundice	• Enlist liver functions test	C1	LGIS	SEQ MCQ VIVA
	• Describe liver function tests	C1		
	• Discuss in detail pathophysiology of jaundice	C2		
Cirrhosis & portal hypertension	• Describe causes and effects of cirrhosis	C1	LGIS	SEQ MCQ VIVA
	• Describe causes and effects of portal hypertension	C1		
Physiology of pancreas Pancreatic	• Discuss composition of pancreatic secretions	C2	LGIS	SEQ MCQ
	• Describe mechanism of secretion of bicarbonate ions	C1		

secretions	• Describe the regulation and phases of pancreatic secretion.	C1		VIVA

Digestion and Absorption –I (digestion and absorption of carbohydrates and proteins)	• Enumerate dietary sources of carbohydrates	C1	LGIS	SEQ MCQ VIVA
	• Describe the structure of villi.	C1		
	• Enumerate the features of small intestine which increase its surface area	C1		
	• Explain in detail mechanism of absorption of fluids, ions & carbohydrates	C2		
	• Enumerate dietary sources of proteins.	C1		
	• Describe the role of hydrolysis in digestion of food.	C1		
	• Explain in detail the digestion of proteins with emphasis on enzymes at relevant steps.	C2		
	• Describe the sites of absorption	C1		
Digestion and absorption-II (digestion and absorption of lipids)	• Enumerate dietary sources of fats	C1	LGIS	SEQ MCQ VIVA
	• Explain in detail the digestion of lipids in relation to bile	C2		
Movements & functions of large intestine (motor functions of large gut and defecation) Flatus & constipation	• Recall functions of large intestine	C1	LGIS	SEQ MCQ VIVA
	• Discuss in detail mixing and propulsive movements	C2		
	• Explain the role of Gastrocolic & Duodenocolic reflex in	C2		
	• large intestine motility	C2		
	• Enumerate causes of empty rectum	C1		
	• Explain defecation reflex, its importance and nervous control	C2		
	• Discuss composition of feces	C2		
	• Enlist causes of flatus	C1		
	• Discuss causes and effects of constipation	C2		
Hormones of GIT	• Explain the general principles of alimentary tract secretion	C2	LGIS	SEQ MCQ VIVA
	• Enlist the stimuli for alimentary tract secretion	C1		
	• Describe the basic mechanism of secretion by glandular cells	C1		
	• Elaborate the role of autonomic stimulation on glandular secretion	C2		
Small intestine	• Enlist types of movements of small intestine	C1		
	• Discuss in detail mixing contractions and propulsive movements	C2		

motility, Diarrhea, malabsorption & sprue, ulcerative colitis and paralytic ilius	• Describe peristaltic rush	C1	LGIS	SEQ MCQ VIVA
	• Explain functions of ileocecal valve and feedback control of ileocecal sphincter	C2		
	• Discuss causes, types and effects of diarrhea, malabsorption and sprue	C2		
	• Discuss causes and effects of Ulcerative colitis & paralytic ilius	C2		

Biochemistry Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Learning Domain	Teaching Strategy
Introduction to metabolism	• Introduction and stages of Metabolism	C2	LGIS
Introduction to carbohydrate metabolism	• Introduction to carbohydrate Metabolism	C2	LGIS
	• Transport of Glucose across the cell (Glucose transporters)	C2	
Glycolysis	• Steps of Glycolysis	C2	LGIS
	• Regulation of the committed steps	C2	
	• Energy calculation in anaerobic and aerobic conditions	C2	
	• Pyruvate Kinase deficiencies	C3	
	• Hyperglycemia & Sorbitol Metabolism	C3	
Fate of pyruvate	• Fate of pyruvate	C2	LGIS
	• Cori's lactic acid cycle & lactic acidosis	C2	
	• Describe steps regulation, energy calculation and significance of Citric acid cycle	C2	
	• Deficiencies of co-enzymes of pyruvate Dehydrogenate Complex (Thymine or Niacin)	C3	
Hexose monophosphate pathway	• Describe Hexose Monophosphate pathway	C2	LGIS
	• Explain functions of NADPH, G^PD deficiency	C2	
	• G6PDH Deficiency	C3	
Gluconeogenesis	• Explain steps and regulation of Gluconeogenesis	C2	LGIS
Glycogen metabolism	• Explain synthesis and breakdown of Glycogen	C2	LGIS
	• Discuss glycogen storage diseases	C2	
	• Explain metabolism of fructose, galactose, ethyl alcohol and related disease	C2	

Metabolism of fructose and galactose metabolism	• Fructose disorder's ➢ Essential Fructose Uria ➢ Hereditary Fructose intolerance • Galacto Kinase Deficiency Classic Galacto Semia	C3	LGIS
Saliva	• Explain composition, functions of saliva & related diseases	C2	LGIS
Gastric juice	• Explain composition, function, formation of Gastric juice and related disorders	C2	LGIS
	• Peptic Ulcer Disease	C3	
Pancreatic juice	• Explain composition, functions & related diseases of pancreatic juice	C2	LGIS
Bile	• Describe composition, function, formation of Bile and related disorders	C2	LGIS
	• Gall Stone	C3	
Digestion & Absorption of Proteins	• Cystine Uria • Hart Nup Disease	C3	LGIS
Digestion & Absorption of Lipids	• Steatorea	C3	LGIS
Nutritional Disorders	• Protein energy Malnutrition • Kwashiorkor • Marasmus	C3	LGIS

Anatomy Small Group Discussion (SGDs)

Topic	Learning Objectives Students Should Be Able To	C/P/A	Teaching Strategy	Assessment Tool
Topographical organization of Gastrointestinal tract	• Enlist components of gastrointestinal tract	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Mark the planes dividing the abdomen into nine quadrants	P		
	• Enumerate the parts of GIT lying in the various quadrants	C1		
Oral Cavity, tongue and salivary glands,	• Define the boundaries of oral cavity	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Tabulate the Extrinsic and Intrinsic muscles of the tongue, anatomical location and clinical importance of tongue	C2		
	• Brief Introduction of salivary glands with their anatomical location	C1		
Anterolateral abdominal wall	• Explain the layers of abdominal wall.	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Explain the fascia and muscles of abdominal wall.	C1		
	• Describe nerve supply of anterior and lateral abdominal wall.	C1		
	• Explain the segmental sympathetic supplies	C1		
	• Abdominal Hernias	C3		
Rectus sheath,	• Describe Formation of rectus sheath	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Enlist contents of rectus sheath	C1		
	• Discuss associated clinical anatomy	C3		
Inguinal Region & Inguinal Hernias	• Describe Walls of Inguinal Canal	C1		
	• Explain Deep & Superficial Inguinal Ring	C1		
	• Enumerate Structures passing through the inguinal canal	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Enlist Coverings of spermatic cord	C1		
	• Explain Mechanics of the inguinal Canal	C1		
	• Describe boundaries of Hassalbachs triangle	C1		
	• Define hernia	C1		
	• Differentiate indirect from direct inguinal hernia	C3		
	• Define Anatomy of Testes and Scrotum	C1		SAQ
	• Differentiate between Protective Coverings of Testes & scrotum	C1		

Testes, scrotum	• Enumerate Nerve & blood supply of these Structures	C1	Skill lab	MCQ VIVA OSPE
	• Discuss the parts of epididymis	C1		
	• Discuss Spermatocoele, Varicocoele, Hematocoele, hydrocoele, Testicular torsion	C3		
Peritoneum & Peritoneal Cavity	• Define peritoneum	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Explain the different folds of peritoneum.	C1		
	• Describe greater and lesser sacs	C1		
	• Enlist the intra and retroperitoneal viscera	C1		
	• Discuss vertical tracings of peritoneum	C1		
Subdivisons of Peritoneal Cavity	• Describe arrangement of peritoneum in transverse & Longitudinal section of abdomen	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Describe arrangement of peritoneum in transverse section of male pelvis	C1		
	• Explain arrangement of peritoneum in transverse section of female pelvis	C1		
	• Explain the layers, folds, recesses and compartments of peritoneum with their clinical importance	C1		
	• Describe peritonitis	C3		
	• Enumerate the signs and symptoms of peritonitis	C3		
	• Treat peritonitis by antibiotics and peritoneal dialysis	C3		
Esophagus	• Discuss gross features of abdominal part of esophagus	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Enumerate their peritoneal & visceral relations.	C1		
	• Explain blood supply, lymphatic drainage & nerve supply of esophagus	C1		
	• Discuss Esophageal varices	C3		
Stomach	• Explain gross features of stomach.	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Discuss blood supply, lymphatic drainage & nerve supply of stomach	C1		
	• Explain peritoneal & visceral relations of stomach	C2		
	• Discuss greater and lesser omentum	C2		
	• Describe formation and boundaries of epiploic foramen	C2		
	• Discuss hiatus hernia	C3		
Small Intestine	• Describe the different parts ofduodenum with their anatomical	C2		SAQ

(Duodenum)	differences		Skill lab	MCQ VIVA OSPE
	• Enumerate the relations of different parts of duodenum	C1		
	• Discuss its clinical importance	C3		
Small Intestine (Jejunum and Ileum)	• Describe jejunum and ileum with their anatomical features	C2	Skill lab	SAQ MCQ VIVA OSPE
	• Discuss mesentery and its attachment	C2		
	• Discuss its clinical importance	C2		
Large Intestine & Appendix	• Enlist various parts of large intestine	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Demonstrate gross anatomical features of different parts of large intestine	C2		
	• Enlist intra and retroperitoneal parts of large intestine	C1		
	• Discuss gross features of caecum	C1		
	• Describe gross anatomy of appendix	C1		
	• Enlist different anatomical positions of vermiform appendix.	C1		
	• Mark McBurney's point	C1		
	• Demonstrate McBurney's incision	P		
	• Discuss common features, differential diagnosis of acute appendicitis and appendicectomy	C3		
Liver, Portal hypertension, Portosystemic Anastomosis	• Describe the anatomical structure of liver.	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Describe the lobes, surfaces and segments of liver	C1		
	• Describe peritoneal reflections, ligaments and bare area of liver.	C1		
	• Enumerate visceral relations of liver.	C1		
	• Enlist the structures in porta hepatis.	C1		
	• Discuss Sub hepatic abscess & Live Biopsy	C3		
	• Discuss formation, course and parts of portal vein	C1		
	• Enumerate relations and tributaries of portal vein	C1		
	• Define portal hypertension	C1		
	• Describe sites of the portocaval anastomosis and their clinical significance	C3		
	• Explain role of portocaval shunts	C3		
Gallbladder and	• Describe location & size of gall bladder	C1	Skill lab	SAQ
	• Enumerate relations of gallbladder.	C1		

Biliary apparatus	• Describe clinical conditions related to gallbladder	C3		MCQ VIVA OSPE
	• Enlist different components of Extra-hepatic biliary System	C1		
	• Discuss the right & left hepatic ducts, common hepatic duct, cystic ducts, bile duct	C1		
	• Explain differences between Intra & Extra Hepatic Biliary Systems.	C2		
	• Discuss clinicals related with biliary apparatus	C3		
	• Discuss accessory hepatic ducts	C3		
Spleen	• Discuss anatomical location and features of spleen with its blood supply, and lymphatic drainage	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Explain Rupture of spleen & its effects	C3		
Pancreas	• Recall location, shape, dimensions and extent of pancreas	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Discuss parts, ducts and relations of pancreas	C1		
	• Describe arterial supply of pancreas	C1		
	• Explain applied aspects of pancreas	C3		
Vasculature of GIT	• Describe the position and the vertebral levels of aorta in the abdomen.	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Enlist the main branches of the aorta and its territories.	C1		
	• Explain the applied anatomy of the aorta	C1		
	• Explain origin, course, branches and distribution of celiac trunk	C1		
Nerve supply and Lymphatic drainage of GIT	• Discus enteric nervous system with formation of plexuses and its parasympathetic role	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Enlist the types of lymph nodes draining the abdomen	C1		
	• Describe lymphatic drainage of GIT with special reference to lymphatic trunks, cisterna chyli & the thoracic duct	C1		
Rectum	• Discuss the location and extent of rectum	C1	Skill lab	SCQ MCQ VIVA OSPE
	• Describe the internal and external features of rectum	C1		
	• Discuss peritoneal reflections rectouterine, rectovesical fossae and their clinical significance	C3		
	• Enumerate relations of rectum	C1		
	• Discuss blood supply, nerve supply, venous and lymphatic drainage	C1		
	• Describe the basis and features of rectal prolapsed	C3		

Anal canal	• Discuss location and extent of anal canal	C1	Skill lab	SAQ MCQ VIVA OSPE
	• Describe external and internal features of Anal Canal	C1		
	• Discuss features of anal sphincters	C1		
	• Tabulate relations of the anal canal with the surrounding structures	C2		
	• Describe the Blood supply, venous and lymphatic drainage & innervations of anal canal	C1		
	• Discuss anal continence	C1		
	• Differentiate between internal and external haemorrhoids	C3		

Physiology Small Group Discussion (SGDs)

Topic	Learning Objectives Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tools
Introduction to GIT	• Enlist general four functions performed by GIT	C1	SGD	SEQ MCQ VIVA
	• Recall physiological anatomy and blood flow through GIT	C1		
	• Briefly discuss electrical activity of GIT smooth muscle	C1		
Swallowing	• Discuss in detail the three stages of swallowing	C2	SGD	SEQ MCQ VIVA
	• Briefly discuss physiological anatomy of lower esophageal sphincter and distal end of esophagus and state their functional importance	C2		
Functions of stomach	• Recall physiological anatomy of stomach	C1	SGD	SEQ MCQ VIVA
	• Describe motor functions of stomach including storage, mixing, propulsion and stomach emptying.	C1		
	• Discuss in detail gastric factors that promote emptying	C2		
	• Explain the role of enterogastric nervous reflexes and hormonal feedback.	C2		
Liver functions	• Recall physiological anatomy of liver	C1	SGD	SEQ MCQ VIVA
	• Discuss formation and storage of bile	C2		
	• Enlist and describe all functions performed by liver	C1		
Digestion and absorption	• Describe in detail the process of digestion of carbohydrates, proteins and fats with special emphasis on enzymes involved at each step	C1	SGD	SEQ MCQ VIVA
	• Discuss special features of small and large intestine to promote	C2		

	absorptive process and mechanism of absorption in detail			
Large intestine	• Recall movements and functions of large intestine	C1	SGD	SEQ MCQ VIVA
	• Enumerate causes of empty rectum	C1		
	• Explain defecation reflex, its importance and nervous control	C2		
	• Explain GIT reflexes integrated at the level of gut wall, prevertebral sympathetic ganglia and spinal cord/brain stem.	C2		

Biochemistry Small Group Discussion (SGDs)

Topic	Learning Objectives Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Saliva and gastric juice	• Explain formation, composition & biochemical functions	C2	SGD	MCQs SAQs Viva
Pancreatic juice, bile & succus entericus	• Explain formation, composition & biochemical functions	C2	SGD	MCQs SAQs Viva
Digestion & absorption of Carbohydrates, Proteins & Fats and GIT hormones	• Describe mechanism of digestion & absorption of carbohydrates, protein & fats	C2	SGD	MCQs SAQs Viva
	• Explain biochemical functions of GIT hormones			
Balanced diet & individual food groups	• Describe balanced diet & individual food groups	C2	SGD	MCQs SAQs Viva
Nutritional disorders & LFTS and Jaundice	• Explain PEM, obesity, liver functions & its tests	C2	SGD	MCQs SAQs Viva
	• Describe types of jaundice,			
	• Understand and interpret LFTs			
Glycolysis, fates of pyruvate	• Explain steps, regulation of glycolysis and fates of pyruvate	C2	SGD	MCQs SAQs Viva
Functions of NADPH, G6PD deficiency	• Describe functions of NADPH, deficiency effects of NADPH	C2	SGD	MCQs SAQs Viva
Gluconeogenesis & Glycogen metabolism	• Explain main steps of gluconeogenesis & glycogen metabolism & their role in blood glucose regulation	C2	SGD	MCQs SAQs Viva

Anatomy Self Directed Learning (SDL)

Topics of SDL	Learning Objectives Students Should Be Able To	Learning Resources
Antero lateral abdominal wall,	• Explain the layers of abdominal wall. • Explain the fascia and muscles of abdominal wall. • Describe nerve supply of anterior and lateral abdominal wall. • Explain the segmental sympathetic supplies	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 183,184-216).
Rectus sheath	• Describe Formation of rectus sheath • Enlist contents of rectus sheath	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 188-201).
Inguinal region & Hernias	• Describe Walls & detailed anatomy of Inguinal Canal • Explain Deep & Superficial Inguinal Ring • Associated Clinicals	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 197, 202-203, 212-213).
Peritoneum & Peritoneal Cavity.	• Define peritoneum • Explain the different folds of peritoneum. • Describe greater and lesser sacs • Enlist the intra and retroperitoneal viscera • Discuss vertical tracings of peritoneum • Describe arrangement of peritoneum in transverse & Longitudinal section of abdomen • Describe arrangement of peritoneum in transverse section of male pelvis • Explain arrangement of peritoneum in transverse section of female pelvis • Explain the layers, folds, recesses and compartments of peritoneum with their clinical importance • Describe peritonitis • Enumerate the signs and symptoms of peritonitis • Treat peritonitis by antibiotics and peritoneal dialysis	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 219-221,).
	• Describe the different parts of duodenum with their anatomical differences	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 239,

Small Intestine	• Enumerate the relations of different parts of duodenum • Discuss its clinical importance • Anatomy of Jejunum & Ileum	241, 244, 245, 325, 436).
Large Intestine	• Enlist various parts of large intestine	
	• Demonstrate gross anatomical features of different parts of large intestine • Enlist intra and retroperitoneal parts of large intestine	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 227,246,248, 325).
Liver and pancreas	• Describe formation of hepatic diverticulum • Describe histogenesis of liver during intrauterine life • Describe formation of various ligaments of liver. • Discuss congenital abnormalities of liver • Differentiate between exocrine and endocrine pancreas. • Discuss the cellular structure and function of exocrine pancreatic acinus and ducts.	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 267-268, 272-278, 282,323, 395).
Vasculature of GIT (Blood Supply, Venous drainage, Lymphatic drainage)	• Explain the applied anatomy of the aorta • Explain origin, course, branches and distribution of celiac trunk • Discuss formation, course and parts of portal vein • Enumerate relations and tributaries of portal vein • Define portal hypertension • Discuss Major Lymphatic Channels	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 228-233, 249-250, 263-285).
Rectum & Anal Canal	• Discuss the location and extent of rectum • Describe the internal and external features of rectum • Discuss peritoneal reflections rectouterine, rectovesical fossae and their clinical significance • Enumerate relations of rectum • Discuss blood supply, nerve supply, venous and lymphatic drainage • Describe the basis and features of rectal prolapsed • Discuss location and extent of anal canal • Describe external and internal features of Anal Canal • Discuss features of anal sphincters • Tabulate relations of the anal canal with the surrounding	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 239, 248,253 368-371,436,438).

	structures	
	• Describe the Blood supply, venous and lymphatic drainage & innervations of anal canal	
	• Discuss anal continence	
	• Differentiate between internal and external hemorrhoids	
Innervation of Abdominal Viscera's	• Discuss cutaneous & Somatic innervation of GIT	❖ Clinical Oriented Anatomy by Keith L. Moore.7TH Edition. (Chapter 2, Page 301-305).
	• Describe Autonomic innervation of GIT	

Physiology Self Directed Learning (SDL)

Topics Of SDL	Learning Objectives Students Should Be Able To	Learning resources
Introduction to GIT, electrical activity in GIT, Enteric Nervous System and GIT reflexes	• Introduction • Role of GIT in control system • Concept of Enteric nervous system • GIT reflexes and its clinical correlation	❖ Ganong's Review of Medical Physiology.25TH Edition. Overview of gastrointestinal function andregulation (Chapter 25, Page 453,467,472). ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. The Digestive System (Chapter 21Page 691,700) ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology (Chapter 8. Page 339) ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 6.Gastrointestinal System. (Chapter 43, Page 681) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology. Section 12. (Chapter 63, Page 787)
Gastric secretion, digestion in stomach, peptic ulcer and gastritis	• Gastric secretion and role in digestion • Peptic ulcer disease • Type of gastritis and clinical importanceof gastritis • Investigations to diagnose gastritis	❖ Ganong's Review of Medical Physiology. Overview of gastrointestinal function and regulation(Chapter 25, Page 455). ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology (Chapter 8. Page356,360) ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 6.Gastrointestinal System. (Chapter 44, Page 706) (Chapter 45, Page 720,726) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology. Section 12. (Chapter 65, Page 809,811)

Small intestine motility and malabsorption (sprue, paralytic ileusand Crohn's disease)	❖ Factors affecting motility of smallintestine ❖ Concept of absorption of nutrients ❖ Importance of history in diagnosis ofvarious malabsorption diseases ❖ Inflammatory bowel disease	❖ Ganong's Review of Medical Physiology.25TH Edition, Gastrointestinal motility. (Chapter 27,Page 495) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. The Digestive System (Chapter 21,Page 697) ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology (Chapter 8. Page 348) ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 6.Gastrointestinal System. (Chapter 44,Page 690,710) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology.Section 12. (Chapter 64, Page 797,802)
Intestinal secretion and its functions, pancreatic juice, its composition and functions	• Intestinal secretions and action • Anatomy of pancreas and its blood supply • Composition of pancreatic juice and itsrole in absorption • Function of pancreas	❖ Ganong's Review of Medical Physiology.25TH Edition.Overview of gastrointestinal function andregulation (Chapter 25,Page 460). ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. The Digestive System (Chapter 21,Page 709) ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology (Chapter 8. Page366,371) ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 6.Gastrointestinal System. (Chapter 45,Page 738,739) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology.Section 12. (Chapter 65,Page 814,820)
Pancreatitis, overall mechanism of digestion and absorption of intestine (amino acids, fatty acids and glucose)	• Pancreatitis • Conclusion of digestion and absorption ofnutrients. • Clinical correlation with pancreaticenzymes. • Hormones secreted by pancreas	❖ Ganong's Review of Medical Physiology.25TH Edition. Digestion, Absorption and NutritionalPrinciples. (Chapter 2, Page 475) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. The Digestive System (Chapter 21,Page 703-710,715) ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology (Chapter 8. Page 374) ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 6.Gastrointestinal System. (Chapter 47,Page 770)(Chapter 48,Page 785) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology.Section 12. (Chapter 66, Page 823)

Motor function of large gut,defecation reflex	• Motor function of large gut • Inflammatory bowel disease • Defecation reflex • Concept of Hemorrhoids	❖ Ganong's Review of Medical Physiology.25TH Edition, Gastrointestinal motility. (Chapter 27,Page 495) ❖ Human Physiology by Dee Unglaub Silver thorn. 8TH Edition. The Digestive System (Chapter 21,Page 720) ❖ Physiological Basis of Medical Practice by Best & Taylor's.13th Edition. Section 6.Gastrointestinal System. (Chapter 44,Page 713) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology.Section 12. (Chapter 64,Page 804)
Pathophysiology (vomiting, diarrhea, constipation, ulcerative colitis, megacolon and carcinoma of colon)	• Symptomsrelated to GIT • Clinical role of various symptoms • Overview of Carcinoma of stomach, smalland large intestine	❖ Ganong's Review of Medical Physiology.25TH Edition, Gastrointestinal motility. (Chapter 27,Page495) ❖ Physiology by Linda S. Costanzo 6th Edition. Gastrointestinal Physiology (Chapter 8. Page 385) ❖ Textbook of Medical Physiology by Guyton & Hall.14th Edition. Gastrointestinal Physiology.Section 12. (Chapter 67, Page 833)

Biochemistry Self Directed Learning (SDL)

Topics of SDL	Learning Objective	References
Carbohydrate Metabolism & Glycolysis	• Understand stages of metabolism • Explain transport of glucose across cell memebrane • Describe steps of glycolysis • Discuss regulation of committed steps • Explain energy calculation in anaerobic and aerobic conditions • Understand pyruvate kinase deficiency	❖ Reference Book: Lippincott's Illustrated reviews of Biochemistry 8th Edition Chapter#8, Page 100.
TCA Cycle & Gluconeogenesis	• Describe steps of TCA cycle • Discuss substrates, steps and regulation of gluconeogenesis	❖ Reference Book: Lippincott's Illustrated reviews of Biochemistry 8th Edition Chapter#9, Page 120. ❖ Reference Book: Lippincott's Illustrated reviews of Biochemistry 8th Edition Chapter#10, Page 128.
Glycogen metabolism	• Explain synthesis and breakdown of glycogen • Discuss glycogen storage diseases	❖ Reference Book: Lippincott's Illustrated reviews of Biochemistry 8th Edition Chapter#11, Page 137.

LFT, s	• Explain liver function test • Interpret. Diagnostic role of LFTs	❖ Essentials of Medical Biochemistry Book By Mushtaq Ahmed Edition 9th Volume#1 ,Chapter#7 , Page 186 ❖ Reference Book: Lippincott's Illustrated reviews of Biochemistry 8th Edition Chapter#19, Page 276, 77.
Bile	• Describe composition and funcitonof bile • Discuss related disorders	❖ Essentials of Medical Biochemistry Book By Mushtaq Ahmed Edition 9th Volume#1 ,Chapter#7 , Page 186
Pancreatic juice	• Explain composition and function of pancreatic juice • Discuss related disorders	❖ Essentials of Medical Biochemistry Book By Mushtaq Ahmed Edition 9th Volume#1 ,Chapter#7 ,Page 181
Digestion and absorption of lipids	• Explain digestion and absorption of lipids • Discuss related disorders	❖ Reference Book: Lippincott's Illustrated reviews of Biochemistry 8th Edition Chapter#15, Page 91

Histology Practicals Skill Laboratory (SKL)

Topic	At the end of practical students should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Tongue & salivary glands	• Identify slidesof tongue & glands under microscope	P	Skill lab	OSPE
	• Illustrate histological structure of tongue & salivary glands	C2		
	• Write two points of identification	C1		
Esophagus	• Identify slide of Esophagus under microscope	P	Skill lab	OSPE
	• Illustrate histological structure of Esophagus	C2		
	• Write two points of identification	C1		
Stomach	• Identify slide of Stomach under microscope	P	Skill lab	OSPE
	• Illustrate histological structure of Stomach	C2		
	• Write two points of identification	C1		
	• Differentiate mucosa of cardiac, fundus, body and pyloric end of stomach	C2		
Liver, Gall bladder & Pancreas	• Identify slides of Liver, Gall bladder &Pancreas under microscope	P	Skill labs	OSPE
	• Illustrate histological structures of Liver, Gallbladder & Pancreas	C2		
	• Write two points of identification	C1		
Small Intestine	• Identify slide of small intestine under microscope	P	Skill lab	OSPE
	• Illustrate histological structure of small intestine	C2		
	• Write two points of identification	C1		
Large Intestine	• Identify slide of Large Intestine under microscope	P	Skill lab	OSPE
	• Illustrate histological structure of large intestine	C2		
	• Write two points of identification	C1		

Physiology Practicals Skill Laboratory (SKL)

Topic	At the end of this skill lab, student should be able to illustrate:	Learning Domain	Teaching Strategy	Assessment Tool
Sense of taste	• Apparatus identification	P	Skill lab	OSPE
	• Principle	C1		
	• Procedure	P		
	• Precautions	C1		
	• Recall taste modalities, taste pathway & abnormalities of taste	C1		
Examination of sense of smell	• Apparatus identification	P	Skill lab	OSPE
	• Principle	C1		
	• Procedure	P		
	• Precautions	C1		
	• Recall Olfactory pathways and abnormalities of olfaction	C1		
Examination of superficial reflexes	• Apparatus identification	C1	Skill lab	OSPE
	• Principle	C1		
	• Procedure	A,P		
	• Precautions	P		
	• Recall reflex arc	C1		
	• Recall effects of UMNL & LMNL on reflexes	C1		
Examination of deep reflexes	• Apparatus identification	C1	Skill lab	OSPE
	• Principle	C1		
	• Procedure	A,P		
	• Precautions	P		
	• Recall reflex arc	C1		
	• Recall effects of UMNL & LMNL on reflexes	C1		

Biochemistry Practicals Skill Laboratory (SKL)

Topic	At The End Of Practical Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Saliva	• Understand Normal constituents of saliva Discuss effects of saliva on digestion of starch	P	Skill Lab	OSPE
Bile	• Explain organic constituents of bile • Explain inorganic constituents of bile	P	Skill Lab	OSPE
Estimation of ALT	• Perform estimation of ALT	P	Skill Lab	OSPE
Estimation of ALP	• Perform estimation of ALP	P	Skill Lab	OSPE
Wheat analysis	• Demonstrate the organic and inorganic constituents of wheat	P	Skill Lab	OSPE
Milk analysis	• Demonstrate the organic and inorganic constituents of milk	P	Skill Lab	OSPE
Potato analysis	• Demonstrate the organic and inorganic constituents of potato	P	Skill Lab	OSPE

SECTION - III

Basic and Clinical Sciences (Vertical Integration)

Content

- **CBLs**
- **Vertical Integration LGIS**
- **Longitudinal Themes**
    - **Biomedical Ethics & Professionalism**
    - **Family Medicine**
    - **Artificial Intelligence (Innovation)**
    - **Integrated Undergraduate Research Curriculum (IUGRC)**

Basic and Clinical Sciences (Vertical Integration)

Case Based Learning (CBL)

Subject	Topic	At The End Of Lecture Students Should Be Able To	Learning Domain
Anatomy	• Acute Appendicitis	Apply basic knowledge of subject to study clinical case.	C3
	• Liver Cirrhosis	Apply basic knowledge of subject to study clinical case.	C3
Physiology	• Peptic Ulcer	Apply basic knowledge of subject to study clinical case.	C3
	• Food poisoning	Apply basic knowledge of subject to study clinical case.	C3
Biochemistry	• Glucose 6 Phosphate Dehydrogenase Deficiency	Apply basic knowledge of subject to study clinical case.	C3
	• Lactose Intolerance	Apply basic knowledge of subject to study clinical case.	C3

Large Group Interactive Sessions (LGIS)

Pathology

Topic	At the end of this LGIS students of should be able to:	Learning Domain	Teaching Strategy	Assessment Tool
Salivary Glands	• Define xerostomia	C1	LGIS	MCQs
	• Enlist causes and pathologenesis of sialadenitis	C2	LGIS	MCQs
	• Diagnosis of pleomorphic adenoma	C2	LGIS	MCQs
Gall Bladder & Pancreas	• Describe etiology and pathogenesis of cholelithiasis and cholecystitis	C2	LGIS	MCQs
	• Enlist the laboratory diagnosis and causes of acute and chronic pancreatitis	C2	LGIS	MCQs

Pharmacology

Topic	At The End Of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Anti diarrheal drugs	• Revise the physiology of gastrointestinal motility	C1	LGIS	MCQ
	• Outline the main causes of diarrhea	C1		
	• Enlist the major groups of anti- diarrheal drugs	C1		
	• Identify the role of anti-diarrheal drugs in different types of diarrheas based on their mechanism	C1		
	• Recall the physiology of production of gastric acid and natural protective barriers against it	C1		
	• Recognize different etiological factors responsible for peptic ulcer	C1		
	• Classify different drugs used in peptic ulcer disease based on their mechanism	C1		
	• Discuss briefly major pharmacokinetic and pharmacodynamics features of these drugs	C2		
	• Cite main regimens used against peptic ulcer due to H. pylori	C1		

Community Medicine

Topic	At The End Of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Concept of Health and Disease	By the end of the session students will be able to; • Define Health	C1	LGIS	MCQs
	• Identify different phases of Health	C1		
	• Elaborate concepts of Health	C2		
	• Acknowledge Dimensions of Health	C2		
	• Elucidate Dimensions of health	C2		
	• Appreciate Determinants of Health	C2		
	• Describe the types of determinants	C2		
Infectious Disease Epidemiology				
Definitions	• Define important terms related to infectious disease epidemiology.	C1	LGIS	MCQs
Epidemic, endemic and pandemic	• Differentiate between epidemic, endemic and pandemic	C2		
Dynamics of disease transmission	• Describe the dynamics of transmission of disease	C2		
Incubation period	• Explain the concept of incubation period and its importance.	C2		

Medicine

Topic	At the end of the lecture, students should be able to	Learning Domain	Learning Strategy	Assessment Tools
Dysphagia	• Define and discuss pathophysiology	C1	LGIS	MCQs
	• Discuss the causes	C2		
	• Describe clinical features	C2		
	• Describe the management	C2		
Peptic ulcer	• Describe Mechanism of digestion in stomach	C1	LGIS	MCQs
	• Describe Mechanism of APD and GERD	C2		
	• Discuss Peptic ulcer formation	C2		
	• Enlist Clinical features	C2		
	• Enlist Investigations	C1		
	• Describe management	C2		
Jaundice	• Enlist types of Jaundice	C1	LGIS	MCQs
	• Discuss changes in Liver	C2		
	• Describe clinical features	C2		
	• Enlist investigations	C1		
	• Discuss management	C2		
Inflammatory bowel disease	• Describe features of IBD	C2	LGIS	MCQs
	• Classify IBD	C2		
	• Describe pathogenesis of IBD	C2		
	• Describe histological diagnosis of IBD	C1		
	• Enlist complication of IBD	C1		

Surgery

Topic	At The End Of The Lecture, Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tools
Ventral wall hernias	• Enlist types of Ventral wall hernias	C1	LGIS	MCQs
	• Understand the symptomatology pathophysiology of the hernias	C2		
Abdominal incisions	• Enlist types of Abdominal incisions	C1		
	• Discuss different methods of Abdominal incisions	C2		
	• Describe possible symptoms and physical findings in a patient with carcinoma stomach.	C2		
	• Physiological changes because of Gastric Outlet Obstruction	C2		
Gall stones and Cholecystectomy	• Understand the symptomatology pathophysiology of the diseases.	C2		
	• Outline management plan	C1		
Anal fissure, Hammorhoids, Fistula in ano	• Enlist important causes of these problems	C1		
	• Discuss in detail management options	C2		

Obstetrics & Gynaecology

Topic	At The End Of The Lecture, Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tools
Common GIT problems in pregnancy (Hyperemesis gravidarum, GERD, Constipation, haemorrhoids)	• Understand the physiological changes in gastrointestinal tract during pregnancy	C1	LGIS	MCQs
	• Know the clinical manifestations of these changes	C2		
	• Outline their managements	C2		

Peadiatrics

Topic	At the end of the lecture, students should be able to	Learning Domain	Teaching strategy	Assessment Tools
Acute diarrhea and chronic diarrhea	• Define Acute diarrhea	C1	LGIS	MCQs
	• Describe epidemiology and disease burden	C2		
	• Discuss etiology and causative organisms' pathophysiology	C2		
	• Assess case	C2		
	• Enlist complications of Acute diarrhea	C2		
	• Describe prevention	C2		
	• Define chronic diarrhea	C1	LGIS	MCQs
	• Describe epidemiology and disease burden	C2		
	• Discuss etiology and causative organisms' pathophysiology	C2		
	• Assess case	C2		
	• Enlist complications of chronic diarrhea	C2		
	• Describe prevention	C2		

Radiology & Artificial Intelligence

Topic	At the end of lecture student should be able to	Learning Domain	Teaching Strategy	Assessment Tools
X-ray abdomen	• Identify normal and abnormal radiographs of abdomen (AP view)	C1	LGIS	MCQs
	• Identify filling defects (Barium meal and Barium enema)	C1		
	• Recognize the correct and incorrect positioning of feeding tubes	C1		
CT Scan MRI abdomen	• Identify normal and abnormal CT Scan MRI abdomen	C1	LGIS	MCQs
	• Discuss co-relation with Artificial Intelligence	C2		

Behavioral Sciences

Topic	At The End of Lecture Students Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Eating disorders	• To be able to define eating disorders	C1	LGIS	MCQs
	• To be able to describe the types of eating disorders • To make differential diagnosis • To be able to manage such conditions	C2 C2 C2		

Biomedical Ethics & Professionalism

Topic	At the End of The Session, Student Should Be Able To	Learning Domain	Teaching Strategy	Assessment Tool
Pakistan Medical & Dental Council Code of Ethics	At the end of the session students should be able to;	C2	LGIS	SAQ MCQ VIVA
	• Appreciate the value of oath and pledge taken by medical student at the time of graduation from medical school			
	• Appraise the importance of principles to be followed by the medical and dental practitioners to fulfil the social contract with the society in order to win the trust of the public in the profession	C2		
	• Cognizant with disciplinary proceedings in case of violation of rules laid down by regulatory body	C1		

Integrated Undergraduate Research Curriculum (IUGRC)

Topic	At the End of The Session, Student Should Be Able To	Teaching Strategy	Assessment Tool
Lecture 1: Introduction to Descriptive Statistics	At the end of the session students should be able to;	LGIS	SAQ MCQ VIVA
	• Define & enlist uses of statistical knowledge in research & healthcare profession.		
	• Differentiate descriptive statistics form inferential statistics		
	• Appreciate value of information & precision in scientific decision making		
Lecture 2: Classification of different types of Data	• Describe the concept of data, variable & sources of data with respect to descriptive statistics	LGIS	SAQ MCQ VIVA
	• Enlist data types with examples from medical background		
	• Classify types of data with examples (qualitative & quantitative)		
	• Exercise on the identification of different types of data		
Lecture 3: Scales of Data Measurement	• Enlist types of data measurement scales	LGIS	SAQ MCQ VIVA
	• Elaboration of different types of data measurement scales with example		
	• Enlist different method of data presentation (tables, graphs, diagrams, pie chart, Bar graph, histogram. line diagram scatter diagram, statistical maps, pictogram and ogive curve) according to type of data.		
	• Explain concept of Measures of central tendency with illustrations form medical	LGIS	SAQ MCQ

Lecture 4: Measure of central tendency	background • Calculate and interpret the different measures of central tendency		VIVA
Lecture 5: Measures of Dispersion	• Explain concept of Measures of dispersion with illustrations form medical background • Calculate and interpret the different measures of dispersion	LGIS	SAQ MCQ VIVA
Lecture 6: Practice Session	• Compute and Interpret results of different measures of dispersion form a given data file	LGIS	SAQ MCQ VIVA

Family Medicine

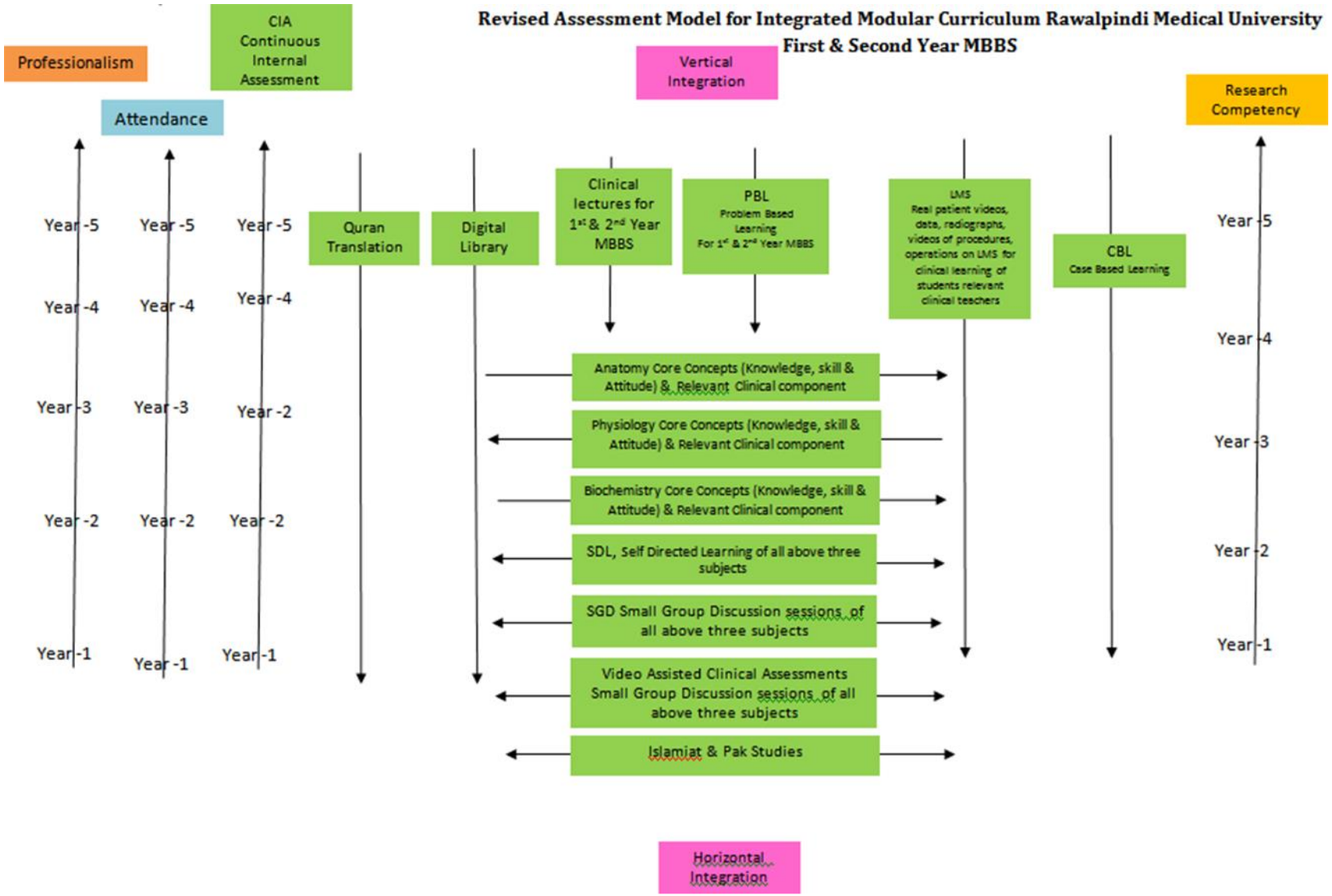
Topic	Learning Objectives At the end of the lecture the student should be able to	Learning Domain	Teaching Strategy	Assessment Tool
Approach to a Patient with abdominal pain	• Discuss what is abdominal pain • Discuss its causes • Disscus diagnosis & principle of management	C2	LGIS-1	MCQs

SECTION - IV

Assessment Policies

Contents

- **Assessment plan**
- **Types of Assessment:**
- **Modular Examinations**
- **Block Examination**
- **Table 4: Assessment Frequency & Time in GIT Module**



Gauge for Continuous Internal Assessment (CIA)

Red Zone	High Alert	Yellow Zone	Green Zone	Excellent	Extra Ordinary
0 - 25%	26 - *50%	51 - 60%	61 – 70%	71 – 80%	81 - 100%

*50% and above is Passing Marks.

Gauge for attendance percentage

Red Zone	High Alert	Yellow Zone-1	Yellow Zone-2	Green Zone	Excellent
0 - 25%	26 - 50%	51 - 60%	61 – 74%	*75 – 80%	81 - 100%

90% is eligibility criteria for appearing in professional examination.

Assessment plan

University has followed the guidelines of Pakistan Medical and Dental Council for assessment. Assessment is conducted at the mid modular,modular and block levels.

Types of Assessment:

The assessment is formative and summative.

Formative Assessment	Summative Assessment
Formative assessment is taken at modular (2/3rd of the module is complete) level through MS Teams. Tool for this assessment is best choice questions and all subjects are given theshare according to their hour percentage.	Summative assessment is taken at the mid modular (LMS Based),modular and block levels.

Modular Assessment

Theory Paper	Viva Voce
There is a module examination at the end of first module of each block. The content of the whole teaching of the module are tested in this examination. It consists of paper with objective type questions and structured essay questions. The distribution of the questions is based on the Table of Specifications of the module. (Annexure I attached)	Structured table viva voce is conducted including the practical content of the module.

Block Assessment

On completion of a block which consists of two modules, there is a block examination which consists of one theory paper and a structured viva with OSPE.

Theory Paper	Block OSPE
There is one written paper for each subject. The paper consists of objective type questions and structured essay questions. The distribution of the questions is based on the Table of Specifications of the module.	This covers the practical content of the whole block.

Table 4-Assessment Frequency & Time in GIT Module

Block	Sr #	Module – 1 GIT Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block-I	1	Mid Module Examinations LMS based (Anatomy, Physiology & Biochemistry)	Summative	30 Minutes	3 Hour 15 Minutes	45 Minutes	2 Formative	6 Summative
	2	Topics of SDL Examination on MS Team	Formative	30 Minutes				
	3	End Module Examinations (SEQ & MCQs Based)	Summative	2 Hours				
	4	Anatomy Structured and Clinically Oriented Viva	Summative	10 Minutes				
	5	Physiology Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	6	Assessment of Clinical Lectures	Formative	15 Minutes				
	7	Assessment of Bioethics Lectures	Summative	2 Minutes				
	8	Assessment of IUGRC,Family Medicine Lectures	Summative	10 Minutes				

No. of Assessments of Anatomy for Second Year MBBS
GIT Module

Block	Sr #	Module – 1 GIT Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block-I	1	Mid Module (when 2/3rd content is covered) Examinations LMS based combined with Anatomy & Biochemistry	Summative	25-02-2023 09:00PM - 09:30PM 30 Minutes	2 Hours & 40 minutes	30 Minutes	3 Formative	3 Summative
	2	Topics of SDL Examination on MS Team (After 15 days of teaching)	Formative	29-03-2023 12:00pm-12:30pm 10 Minutes				
	3	End Module Examinations (SEQ & MCQs Based)	Summative	08-03-2023 08:30am - 10:30am 2 Hours				
	4	Sub Regional Assessment (Viva voce)	Formative	10 Minutes				
	5	Structured & Clinically oriented Viva voce	Summative	06-03-2023 & 07-03-2023 09:00am - 01:00pm 10 Minutes/student				
	6	Assessment of Clinical Lectures	Formative	10-03-23 09:30am-10:00am 10 Minutes				

No. of Assessments of Physiology for Second Year MBBS
GIT Module

Block	Sr. #	Module – 1 GIT Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Date/Time/Duration	Summative Assessment Time	Formative Assessment Time		
Block - I	1	Mid Module (when 2/3rd content is covered) Examinations LMS based combined with Anatomy & Biochemistry	Summative	25-02-2023 09:00PM -09:30PM 30 Minutes	2 Hours & 40 minutes	20 minutes	2 Formative	3 Summative
	2	Topics of SDL Examination on MS Team (After 15 days of teaching)	Formative	18-03-2023 12:00pm - 12:30pm 10 Minutes				
	3	End Module Examinations (SEQ & MCQs Based)	Summative	09-03-2023 08:30am -10:30am 2 Hours				
	4	Structured & Clinically oriented Viva voce	Summative	06-03-2023 & 07-03-2023 09:00am -01:00pm 10 Minutes/student				
	5	Assessment of Clinical Lectures	Formative	10-03-23 09:30am-10:00am 10 Minutes				

No. of Assessments of Biochemistry for Second Year MBBS
GIT Module

Block	Sr. #	Module – 1 GIT Module Components	Type of Assessments	Total Assessments Time			No. of Assessments	
				Assessment Time	Summative Assessment Time	Formative Assessment Time		
Block-I	1	Mid Module (when 2/3rd content is covered) Examinations LMS based combined with Anatomy & Biochemistry	Summative	25-02-2023 09:00PM - 09:30PM 30 Minutes	2 Hours & 40 minutes	20 Minutes	2 Formative	3 Summative
	2	Topics of SDL Examination on MS Team (After 15 days of teaching)	Formative	18-03-2023 12:00pm - 12:30pm 10 Minutes				
	3	End Module Examinations (SEQ & MCQs Based)	Summative	10-03-2023 08:30am- 10:30am 2 Hours				
	4	Structured & Clinically oriented Viva voce	Summative	10 Minutes				
	5	Assessment of Clinical Lectures	Formative	10-03-2023 08:30am- 10:30am 10 Minutes				
	Total			**3 Hours**			**5 Assessments**	

Learning Resources

Subject	Resources
Anatomy	**A. Gross Anatomy** 1. Gray's Anatomy by Prof. Susan Standring 42th edition, Elsevier. 2. Clinical Anatomy for Medical Students by Richard S.Snell 10th edition. 3. Clinically Oriented Anatomy by Keith Moore 9th edition. 4. Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III **B. Histology** 1. B. Young J. W. Health Wheather's Functional Histology 6th edition. 2. Medical Histology by Prof. Laiq Hussain 7th edition. **C. Embryology** 1. Keith L. Moore. The Developing Human 11th edition. 2. Langman's Medical Embryology 14th edition.
Physiology	**A. Textbooks** 1. Textbook Of Medical Physiology by Guyton And Hall 14th edition. 2. Ganong ' S Review of Medical Physiology 26th edition. **B. Reference Books** 1. Human Physiology by Lauralee Sherwood 10th edition. 2. Berne & Levy Physiology 7th edition. 3. Best & Taylor Physiological Basis of Medical Practice 13th edition. 4. Guyton & Hall Physiological Review 3rd edition.
Biochemistry	**Textbooks** 1. Harper's Illustrated Biochemistry 32th edition. 2. Lehninger Principle of Biochemistry 8th edition. 3. Biochemistry by Devlin 7th edition.
Community Medicine	**Textbooks** 1. Community Medicine by Parikh 25th edition. 2. Community Medicine by M Illyas 8th edition. 3. Basic Statistics for the Health Sciences by Jan W Kuzma 5th edition.
Pathology/Microbiology	**Textbooks** 1. Robbins & Cotran, Pathologic Basis of Disease, 10th edition. 2. Rapid Review Pathology, 5th edition by Edward F. Goljan MD. 3. http://library.med.utah.edu/WebPath/webpath.html
Pharmacology	**Textbooks** 1. Lippincot Illustrated Pharmacology 9th edition. 2. Basic and Clinical Pharmacology by Katzung 5th edition.

SECTION - V

Time Table

Integrated Clinically Oriented Modular Curriculum for Second Year MBBS

GIT Module Time Table

Second Year MBBS

Session 2021 - 2022

Batch- 49

GIT Module Team

Module Name : GIT Module
Duration of module : 06 Weeks
Coordinator : Dr. Maryam Sohail
Co-coordinator : Dr. Ali Raza
Reviewed by : Module Committee

Module Committee	
Vice Chancellor RMU	Prof. Dr. Muhammad Umar
Director DME	Prof. Dr. Rai Muhammad Asghar
Convener Curriculum	Prof. Dr. Naeem Akhter
Chairperson Anatomy & Dean Basic Sciences	Prof. Dr. Ayesha Yousaf
Additional Director DME	Prof. Dr. Ifra Saeed
Chairperson Physiology	Prof. Dr. Samia Sarwar
Chairperson Biochemistry	Dr. Aneela Jamil
Focal Person Anatomy Second Year MBBS	Prof. Dr. Ifra Saeed
Focal Person Physiology	Dr. Sidra Hamid
Focal Person Biochemistry	Dr. Aneela Jamil
Focal Person Pharmacology	Dr. Zunera Hakim
Focal Person Pathology	Dr. Asiya Niazi
Focal Person Behavioral Sciences	Dr. Saadia Yasir
Focal Person Community Medicine	Dr. Afifa Kulsoom
Focal Person Quran Translation Lectures	Dr. Fahad Anwar

Module Task Force Team	
Coordinator	Dr. Maryam Sohail (Senior Demonstrator of Anatomy)
DME Focal Person	Dr. Sidra Hamid (DHPE)
Co-coordinator	Dr. Shazia Nosheen (Senior Demonstrator of Physiology
Co-Coordinator	Dr. Almas Ijaz (Senior Demonstrator of Biochemistry)
Co-coordinator	Dr. Ali Raza

DME Implementation Team	
Director DME	Prof. Dr. Rai Muhammad Asghar
Implementation Incharge 1st & 2nd Year MBBS & Add. Director DME	Prof. Dr. Ifra Saeed
Deputy Director DME	Dr Shazia Zaib
Module planner & Implementation coordinator	Dr. Sidra Hamid
Editor	Muhammad Arslan Aslam

Discipline wise Details of Modular Content

Block	Module	General Anatomy	Embryology	Histology	Gross Anatomy
1	Anatomy	-	Tongue, Body Cavities, Gastrointestinal System	Digestive Tract & associated organs (Junqueira)	Oral Cavity, Abdomen and associated visceras
	Biochemistry	Carbohydrate metabolism, GIT digestive juices, Digestion and absorption, Nutrition			
	Physiology	General Principles of Gastrointestinal Function—Motility, Nervous Control, and Blood Circulation Propulsion and Mixing of Food in the Alimentary Tract Secretory Functions of the Alimentary Tract, Digestion and Absorption in the Gastrointestinal Tract Physiology of Gastrointestinal Disorders			
	Bioethics & Professionalism	• Pakistan Medical & dental council Code of Ethics			
	Research (IUGRC)	• Introduction to descriptive statistics • Classification of different types of Data • Scales of Data measurement • Measures of central Tendency • Compute & Interpret measures of central tendency • Measure of dispersion/ Secondary data Analysis			
	Radiology & Artificial Intelligence	• Medical imaging of abdomen- I • Medical imaging of abdomen-II			
	Family Medicine	• Common Abdominal diseases			
	Vertical components	• The Holy Quran Translation Component			
	Vertical Integration	Clinically content relevant to GIT module • Eating disorders (Psychiatry) • Concept of health & disease (Community medicine) • Epidemiology of infectious diseases & Basic Concepts (Community medicine) • Dysphagia (Medicine)			

		• Pathologies of Salivary glands (Pathology) • Abdominal hernias (Surgery) • Abdominal incisions (Surgery) • Peptic ulcer (Medicine) • Surgical complications of Peptic Ulcer Disease (Surgery) • Pakistan Medical & dental council Code of Ethics (Community Medicine) • Jaundice (Medicine) • Gall stones & Cholecystectomy (Surgery) • Acute & Chronic Diarrhea (Pediatrics) • Acute Abdominal Pain (Surgery) • Irritable Bowel Syndrome (Medicine) • Antidiarrheal drugs & drugs for Peptic Ulcer Disease (Pharmacology) • Common GIT problems in pregnancy (Hyperemesis gravidarum, GERD, Constipation, hemorrhoids) (Gynae and OBS) • Pathologies of gallbladder and pancreas (Pathology) • Anal fissure, Hemorrhoids, Fistula in ano (Surgery)

Categorization of Modular Content

Anatomy:

CATEGORY A	CATEGORY B	CATEGORY C		
Special Embryology	**Special Histology**	**Demonstrations**	**Practical's**	**CBL**
Development Of -Tongue, - Salivary Glands - Esophagus & Stomach - Liver - Gallbladder & Pancreas - Small Intestine - Large Intestine	Histological Features Of - Tongue, - Salivary Glands -General Structure of GIT - Esophagus & Stomach - Liver - Gallbladder & Pancreas - Small Intestine - Large Intestine	**Gross Anatomy:** -Topographical Organization Of GIT -Oral Cavity -Tongue - Salivary Glands -Anterolateral Abdominal Wall -Rectus Sheath -Inguinal Region & Hernias - Testes -Scrotum -Peritoneum & Peritoneal Cavity -Subdivisions of Peritoneal Cavity -Esophagus -Stomach -Small & Large Intestines -Liver -Gallbladder -Biliary Apparatus -Spleen -Pancreas -Vasculature of GIT -Portosystemic Anastomosis -Rectum -Anal Canal -Innervation of Abdominal Viscera	• Histology of Tongue & Salivary glands • Esophagus & Stomach • Liver & Gallbladder • Small Intestine • Large Intestine	• Acute Appendicitis • Liver & Portal Hypertension
	Development of Body Cavities Histology Of Liver			

Category A: By Professors

Category B: By Associate & Assistant Professors

Category C: By Senior Demonstrators

Teaching Staff / Human Resource of Department of Anatomy

Sr. #	Designation Of Teaching Staff / Human Resource	Total number of teaching staff
1.	Professor of Anatomy department	01
3.	Assistant professor of Anatomy department (AP)	01
4.	Demonstrators of Anatomy department	04

Contact Hours (Faculty)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	19 hours
2.	Small Group Discussions (SGD)	46 hours
4.	Practical / Skill Lab	38 hours

Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours
1.	Large Group Interactive Session (LGIS)	10 hours
2.	Small Group Discussions (SGD)	46 hours
4.	Practical / Skill Lab	7.5 hours
5.	Self-Directed Learning (SDL)	20 hours

Physiology:

Category A	Category B	Category C
Introduction to GIT, electrical activity in GIT, Enteric Nervous System and GIT reflexes **(Dr. Samia Sarwar)**	Saliva and mastication, stages of swallowing, clinical disorders of esophagus and swallowing, achalasia and vomiting (Dr. Shazia)	PBL:
Small intestine motility and malabsorption (sprue, paralytic ileus and Crohn's disease) **(Dr. Samia Sarwar)**	Movements of GIT, control of GIT motility and factors affecting GIT blood flow, hormones of GIT (Dr. Aneela)	CBL: Peptic Ulcer Food poisoning
	Motor functions of stomach, physiology of regulation of gastric emptying (Dr. Shazia)	Practical: Sense of taste Sense of smell Examination of superficial reflexes (CNS) Examination of deep reflexes Performance of axon reflex (triple response of skin)
	Physiology of liver and gall bladder, liver and biliary secretion(Dr. Aneela)	SGD: Saliva and mastication, stages of swallowing, clinical disorders of esophagus and swallowing, achalasia and vomiting Motor functions of stomach, physiology of regulation of gastric emptying Physiology of liver and gall bladder, liver and biliary secretion
	Gastric secretion, digestion in stomach, peptic ulcer and gastritis (Dr. Shazia)	SDL: Introduction to GIT, electrical activity in GIT, Enteric Nervous System and GIT reflexes Gastric secretion, digestion in stomach, peptic ulcer and gastritis Small intestine motility and malabsorption (sprue, paralytic ileus and Crohn's disease) Intestinal secretion and its functions, pancreatic juice, its composition and functions Pancreatitis, overall mechanism of digestion and absorption of intestine (amino acids, fatty acids and glucose) Motor function of large gut, defecation reflex Pathophysiology (diarrhea, constipation , ulcerative colitis, mega colon and carcinoma of colon)
	Liver function tests, types of jaundice, pathophysiology of cirrhosis and portal hypertension (Dr. Aneela)	
	Intestinal secretion and its functions, pancreatic juice, its composition and functions, pancreatitis, overall mechanism of digestion and absorption of intestine (amino acids, fatty acids and glucose) (Dr. Aneela)	
	Motor function of large gut, defecation reflex and pathophysiology (diarrhea, constipation , ulcerative colitis, mega colon and carcinoma of colon) (Dr. Shazia)	

Category A: By HOD and Associate Professor

Category B: By All (HOD, Associate, Assistant, Senior Demonstrators)

Category C: By Demonstrators and Residents

Teaching Staff / Human Resource of Department of Physiology

Sr. #	Designation Of Teaching Staff / HumanResource	Total number of teaching staff
1.	Professor of physiology department	01
2.	Associate professor of physiology department	01
3.	Assistant professor of physiology department (AP)	01 (DME)
4.	Demonstrators of physiology department	07
5.	Residents of physiology department (PGTs)	08

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of TeachingStrategies	Total Hours
1.	Large Group Interactive Session (Lectures)	22 hours
2.	Small Group Discussions (SGD)/CBL	38.5 hours
3.	Problem Based Learning (PBL)	2.5 hours
4.	Practical / Skill Lab	38.5 hours
5.	Self-Directed Learning (SDL)	17 hours

Biochemistry:

CATEGORY A	CATEGORY B	CATEGORY C
Carbohydrate metabolism (Dr Tehmina /Dr Uzma)	Saliva (Dr Almas)	PBL: GERD (Gastroesophageal Reflux Disease)
Glycolysis (Dr Tehmina /Dr Uzma)	Individual Sugars (Dr Aneela)	CBL: G6PDH Deficiency Lactose Intolerance
Gluconeogenesis (Dr Aneela)	Fate Of Pyruvate (Dr Tehmina /Dr Uzma)	Practical: Saliva Bile Analysis Of Food Components (Potato, Wheat)
TCA cycle (Dr Tehmina /Dr Uzma)	Function Of NADPH And G6PD Deficiency (Dr Aneela)	SGD: Gluconeogenesis and Its Regulation Jaundice And LFTs
Glycogen metabolism (Dr Aneela)	Gastric Juice (Dr Almas)	
LFTS Jaundice (Dr Anoosh)	Bile & Pancreatic Juice (Dr Uzma)	
Digestion And Absorption of Carbohydrates, Proteins and Lipids (Dr Anoosh)	Nutrition (Dr Rahat)	
	GIT Hormones & Succus Entericus (Dr Uzma)	

Category A: By HOD And Assistant Professor

Category B: By All HOD, Assistant Professors, Senior Demonstrators

Category C: By All Demonstrator

Teaching Staff / Human Resource of Department of Biochemistry

Sr. #	Designation Of Teaching Staff / Human Resource	Total number of teaching staff
1	Assistant professor of biochemistry department (AP)	02
2	Demonstrators of biochemistry department	08

Contact Hours (Faculty) & Contact Hours (Students)

Sr. #	Hours Calculation for Various Type of Teaching Strategies	Total Hours (Faculty)	Total Hours (student)
1.	Large Group Interactive Session (LECTURES)	20 hours	10 hours
2.	Small Group Discussions (SGD)	38 hours	7.5 hours
4.	Practical / Skill Lab	38 hours	7.5 hours
5.	Self-Directed Learning (SDL)	4 hours	04

Time Table For GIT Module (First Week)
(30-01- 2023 to 04-02- 2023)

DATE/DAY	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm		12:00pm – 2:00pm	Home Assignments(2HRS)
30-01-2023 MONDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Physiology Enteric Nervous System
		Introduction to GIT Electrical Activity in GIT, Enteric Nervous System & GIT Reflexes	Saliva &Mastication,Stages ofSwallowing,Clinical DisordersofEsophagus &Swallowing,Achalasia & Vomiting	Development Of Tongue	Histology of Tongue	Introduction to Carbohydrate Metabolism	Saliva	Topographical Organization of GIT	
		Prof. Dr. Samia Sarwar / Dr. Aneela (Even)	Dr Shazia (Odd)	Prof. Dr Ifra (Even)	Ass. Prof. Dr Maria (Odd)	Dr. Tehmina / Dr Uzma (Even)	Dr. Almas (Odd)		
31-01-2023 TUESDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**BEHAVIORAL SCIENCES LGIS**		**COMMUNITY MEDICINE LGIS**		**DISSECTION/SGD**	SDL Physiology GIT Reflexes
		Saliva & Mastication,Stages of Swallowing, Clinical Disorders of Esophagus & Swallowing,Achalasia &Vomiting	Introduction to GIT Electrical Activity in GIT, Enteric Nervous System & GIT Reflexes	Eating Disorders		Concept Of Health & Disease	Epidemiology Of Infectious Diseases& Basic Concepts	Oral Cavity, Tongue and Salivary Glands	
		Dr Shazia (Even)	Prof. Dr. Samia Sarwar / Dr. Aneela (Odd)	Dr. Sadia Yasir (Even)	Dr. Zona Tahir (Odd)	Dr. Rizwana Shahid (Even)	Dr. Uzma Hayat (Odd)		
01-02-2023 WEDNESDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**COMMUNITY MEDICINE LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Biochemistry Carbohydrate Metabolism Glycolysis
		Epidemiology Of Infectious Diseases Basic Concepts	Concept Of Health & Disease	Histology of Tongue	Development of Tongue	Saliva	Carbohydrate Metabolism	Anterolateral Abdominal Wall	
		Dr. Uzma Hayat (Even)	Dr. Rizwana Shahid (Odd)	Ass. Prof. Dr Maria (Even)	Prof. Dr Ifra (Odd)	Dr. Almas (Even)	Dr. Tehmina /Dr Uzma (Odd)		
02-02-2023 THURSDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**MEDICINE LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Anatomy Anterolateral Abdominal Wall
		Dysphagia		Development Of Salivary Glands	Histology Salivary Glands	Metabolism of Monosaccharide & Disaccharide(Fructose, Lactose, Galactose)	Glycolysis	Rectus Sheath	
		Dr. Sadia Ahmed (Even)	Dr. Aqsa Naseer (Odd)	Prof. Dr Ifra (Even)	Ass. Prof. Dr Maria (Odd)	Dr. Aneela (Even)	Dr. Tehmina / Dr Uzma (Odd)		
03-02-2023 FRIDAY	**8:00-9:00AM**	**9:00-10:00AM**		**10:00-11:00AM**		**11:00-12:00PM**			
	ANATOMY LGIS	**BIOCHEMISTRY LGIS**		**QURAN TRANSLATION - I**		**QURAN TRANSLATION - I**			
	Histology Salivary Glands / Development Of Salivary Glands	Glycolysis	Metabolism of Monosaccharide & Disaccharide(Fructose, Lactose, Galactose)	Imaniaat-1	Ibadaat-1	Ibadaat-1	Imaniaat-1		
	Ass. Prof. Dr Maria (Even) / Prof. Dr Ifra (Odd)	Dr. Tehmina / Dr Uzma (Even)	Dr. Aneela (Odd)	Mufti Naeem Sherazi (Even)	Dr. Fahd Anwar (Odd)	Dr. Fahd Anwar (Even)	Mufti Naeem Sherazi (Odd)		
04-02-2023 SATURDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**BIOETHICS LGIS**	**RESEARCH-I LGIS**	**PATHOLOGY LGIS**		**BIOCHEMISTRY LGIS**		PBL SESSION – I	SDL Anatomy Rectus Sheath
		Pakistan Medical & Dental Council Code of Ethics	Introduction to Descriptive Statistics	Pathologies of Salivary Glands		Fate Of Pyruvate	Gluconeogenesis	PBL SESSION – I	
		Dr. Sidra Hamid (Even)	Dr. Rizwana Shahid (Odd)	Dr.Rabbiyah Khalid(Even)	Dr. Sara Rafi (Odd)	Dr. Tehmina / Dr Uzma(Even)	Dr. Aneela (Odd)	Physiology Batch Teachers Of 2nd Year	

Topics For Practical with Venue
• Histology Of Tongue and Salivary Glands (Anatomy Histology Practical) Venue-Histology Lab- Dr Gaiti Ara • Saliva I (Biochemistry Practical) Venue- Biochemistry Laboratory • Sense Of Taste (Physiology Practical) Venue – Physiology Lab

Topics for Small Group Discussion& CBLs With Venue
• Physiology SGD: Saliva and mastication, stages of swallowing, clinical disorders of esophagus and swallowing, achalasia and vomiting Saliva Venue - Lecture Hall No 5 • Biochemistry SGD: Saliva Venue - Lecture Hall No 2

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For Second Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-120	Dr. Gaiti Ara	Lecture Hall No.04 Anatomy Lecture Hall
B	121-240	Dr. Maryam Sohail	Lecture Hall No. 03 Anatomy Lecture Hall
C	241-Onwards	Dr. Sadia Baqir	Dissection Hall

Venue For Second Year Batches For PBL & SGD Team-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	Lecture Hall no.05 Physiology	Dr. Aneela Yasmeen
Batch-A2	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Shazia Nosheen
Batch-B1	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Kamil
Batch-B2	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-C1	(141-175)	Lecture Hall no.05 (Basement)	Dr. Nayab (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.04 (Basement)	Dr. Maryam (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.02 (Basement)	Dr. Ali Raza (PBL) Dr. Ismail (SGD)
Batch-D2	(246-280)	Conference Room (Basement)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	New Lecture Hall no.01	Dr. Muhammad Usman
Batch-E2	(315 onwards)	Lecture Hall no.04	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Faiza Zafar	Dr. Aneela / Dr. Najam us Sehar
2.	Batch – B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Shahrukh Khan	Dr. Nayab Zonish / Dr. Muhammad Usman
4.	Batch – D	211-280	Dr. Rahat Afzal	Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir / Dr. Ismail

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

Topic Details Of SDL Biochemistry

- Glycogen Storage Diseases
- Regulation of Glycogen Metabolism
- Diseases of Galactose Metabolism
- Diseases of Fructose Metabolism
- Glucose Transporters
- Regulation of Glycolysis
- Pyruvate Dehydrogenase Complex

Topic Details Of SDL Anatomy

- Anterior Abdominal Wall
- Rectus Sheath

Time Table For GIT Module (Second Week)
(06-02-2023 to 11-02-2023)

DATE/DAY	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm		12:00pm – 2:00pm	Home Assignments(2HRS)
06-02-2023 MONDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**BIOCHEMISTRY LGIS**		**SURGERY LGIS**		**DISSECTION/SGD**	SDL Physiology Control Of GI Motility & Factors Affecting GIT Blood Flow
		Movements of GIT, control of GIT motility and factors affecting GIT blood flow, hormones of GIT	Motor functions of stomach, physiology of regulation of gastric emptying	Gluconeogenesis	Fate Of Pyruvate	Abdominal Hernias		Inguinal Region And Hernias	
		Dr. Aneela (Even)	Dr. Shazia (Odd)	Dr. Aneela (Even)	Dr. Tehmina / Dr Uzma (Odd)	Dr. Hira (Even)	Dr. Ruqaiya (Odd)		
07-02-2023 TUESDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Physiology Swallowing
		Motor functions of stomach, physiology of regulation of gastric emptying	Movements of GIT, control of GIT motility and factors affecting GIT blood flow, hormones of GIT	Development Of Esophagus & Stomach-1	Histology General Structure of GIT & Esophagus	Function Of NADPH & Deficiency of G6PD	Citric Acid Cycle	Testes & Scrotum	
		Dr. Shazia (Even)	Dr. Aneela (Odd)	Prof. Dr Ifra (Even)	Ass. Prof. Dr Maria (Odd)	Dr. Aneela (Even)	Dr. Tehmina / Dr Uzma (Odd)		
08-02-2023 WEDNESDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**SURGERY LGIS**		**DISSECTION/SGD**	SDL Biochemistry TCA Cycle Gluconeogenesis Regulation
		Physiology of liver and gall bladder, liver and biliary secretion	Gastric secretion, digestion in stomach, peptic ulcer and gastritis	Histology General Structure of GIT & Esophagus	Development Of Esophagus & Stomach-1	Abdominal Incisions		Peritoneum & Peritoneal Cavity	
		Dr. Aneela (Even)	Dr. Shazia (Odd)	Ass. Prof. Dr Maria (Even)	Prof. Dr Ifra (Odd)	Dr. Omer Qasiser (Even)	Dr. Samra Riaz (Odd)		
09-02-2023 THURSDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**PHYSIOLOGY SGD**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Anatomy Inguinal Region Canal and Hernias
		Gastric secretion, digestion in stomach, peptic ulcer and gastritis	Physiology of liver and gall bladder, liver and biliary secretion	Movements of GIT, control of GIT motility and factors affecting GIT blood flow, hormones of GIT		Citric Acid Cycle	Function of NADPH & Deficiency of G6PD	Sub divisions of Peritoneal Cavity	
		Dr. Shazia (Even)	Dr. Aneela (Odd)	SGD Team of Second Year MBBS		Dr. Tehmina / Dr Uzma(Even)	Dr. Aneela (Odd)		
10-02-2023 FRIDAY	**8:00-9:00am**	**9:00-10:00am**		**10:00-11:00am**		**11:00-12:00pm**			
	MEDICINE LGIS	**ANATOMY LGIS**		**Quran Translation - II**		**Quran Translation - II**			
	Peptic Ulcer	Development of Stomach-2	Histology Of Stomach	Ibadaat-2	Imaniyaat-2	Ibadaat-2	Imaniyaat-2		
	Dr. Javeria (Even) / Dr. Anam (Odd)	Prof. Dr. Ifra (Even)	Ass. Prof. Dr Maria (Odd)	Dr Fahd (Even)	Mufti Naeem Sherazi (Odd)	Dr Fahd (Odd)	Mufti Naeem Sherazi (Even)		
11-02-2023 SATURDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**SURGERY LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Anatomy Peritoneum & Peritoneal Cavity
		Surgical complications of Peptic Ulcer Disease		Histology Of Stomach	Development of Stomach-2	Glycogen Metabolism	Gastric Juice	Esophagus and stomach	
		Dr. Ali Kamran (Even)	Dr. Sidra (Odd)	Ass. Prof. Dr Maria (Even)	Prof. Dr. Ifra (Odd)	Dr. Aneela (Even)	Dr. Almas (Odd)		

Topics For Practical with Venue
• Histology of Esophagus & Stomach (Anatomy Histology Practical) Venue-Histology lab-Dr Maryam Sohail • Saliva I (Biochemistry Practical) Venue- Biochemistry laboratory • Sense of Smell (Physiology Practical) Venue – Physiology Lab

Topics For Small Group Discussion& CBLs With Venue
• Physiology SGD: Motor functions of stomach, physiology of regulation of gastric emptying Venue: Lecture Hall No 5) • Biochemistry CBL: Glucose 6 Phosphate Dehydrogenase Deficiency (Venue: Lecture Hall No 2)

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For Second Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-120	Dr. Gaiti Ara	Lecture Hall No.04 Anatomy Lecture Hall
B	121-240	Dr. Maryam Sohail	Lecture Hall No. 03 Anatomy Lecture Hall
C	241-Onwards	Dr. Sadia Baqir	Dissection Hall

Venue For Second Year Batches For PBL & SGD Team-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	Lecture Hall no.05 Physiology	Dr. Aneela Yasmeen
Batch-A2	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Shazia Nosheen
Batch-B1	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Kamil
Batch-B2	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-C1	(141-175)	Lecture Hall no.05 (Basement)	Dr. Nayab (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.04 (Basement)	Dr. Maryam (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.02 (Basement)	Dr. Ali Raza (PBL) Dr. Ismail (SGD)
Batch-D2	(246-280)	Conference Room (Basement)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	New Lecture Hall no.01	Dr. Muhammad Usman
Batch-E2	(315 onwards)	Lecture Hall no.04	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Faiza Zafar	Dr. Aneela / Dr. Najam us Sehar
2.	Batch –B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Shahrukh Khan	Dr. Nayab Zonish / Dr. Muhammad Usman
4.	Batch –D	211-280	Dr. Rahat Afzal	Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir / Dr. Ismail

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

Topic Details Of SDL Biochemistry

- Glycolysis and gluconeogenesis regulation
- Fates of pyruvate
- TCA cycle
- Glucose 6 Phosphate Dehydrogenase Deficiency

Topic Details Of SDL Anatomy

- Inguinal Canal and Hernia
- Peritoneum

Time Table For GIT Module (Third Week)
(13-02-2023 to 18-02-2023)

DATE/DAY	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm		12:00pm – 2:00pm	Home Assignments (2HRS)	
13-02-2023 MONDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**PHYSIOLOGY LGIS**		**PHYSIOLOGY SDL-I**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**	SDL Physiology Clinical disorders of Esophagus & Swallowing., Achalasia/ vomiting	
		Liver function tests, types of jaundice,pathophysiology of cirrhosisandportalhypertension	Small intestine motilityand malabsorption (sprue,paralytic ileus and Crohn's disease)	Introduction to GIT, electrical activity in GIT, Enteric Nervous System and GIT reflexes		Gastric Juice	Glycogen Metabolism	Small intestine (Duodenum)		
		Dr. Aneela (Even)	Prof. Dr. Samia Sarwar / Dr. Shazia(Odd)	Dr. Uzma (Even)	Dr. Fareed (Even)	Dr. Almas (Even)	Dr. Aneela (Odd)			
14-02-2023 TUESDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**RESEARCH -I**		**DISSECTION/SGD**	SDL Physiology Motor function of stomach	
		Small intestine motility and malabsorption (sprue, paralytic ileus and Crohn's disease)	Liver function tests, types of jaundice, pathophysiology of cirrhosis and portal hypertension	Development of Liver & Biliary Apparatus	Histology of Liver	Introduction to descriptive statistics	Pakistan Medical & dental council Code of Ethics	Small intestine (Jejunum & ileum)		
		Prof. Dr. SamiaSarwar / Dr. Shazia(Even)	Dr. Aneela (Odd)	Prof. Dr Ifra (even)	Ass. Prof. Dr Maria (Odd)	Dr. Uzma Hayat(Even)	Dr. Sidra Hamid (Odd)			
15-02-2023 WEDNESDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**RESEARCH-II LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/CBL**	SDL Biochemistry Glycogen Metabolism	
		Classification of different types of data		Histology of Liver	Development of Liver & Biliary Apparatus	LFT's Jaundice	Bile & pancreatic juice	Liver-I CBL- Liver & portal Hypertension		
		Dr. Rizwana Shahid(Even)	Dr. Uzma Hayat (Odd)	Ass. Prof. Dr Maria (even)	Prof. Dr Ifra (Odd)	Dr. Anoosh (Even)	Dr. Uzma (Odd)			
16-02-2023 THURSDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**MEDICINE LGIS**		**ANATOMY LGIS**		**SURGERY LGIS**		**DISSECTION/ CBL**	SDL Anatomy Small Intestine	
		Jaundice		Development of Gallbladder & Pancreas	Histology of Gallbladder & Pancreas	Gall Stones & cholecystectomy		Liver II		
		Worthy Vice Chancellor Prof. Dr. Muhammad Umar		Prof Dr Ifra (Even).	Ass. Prof. Dr Maria (Odd)	Dr. Asifa (Even)	Dr. Yasmin (Odd)			
17-02-2023 FRIDAY	**8:00-9:00AM**	**9:00-10:00AM**		**10:00-11:00AM**		**11:00-12:00PM**				
	DISSECTION	**ANATOMY LGIS**		**QURAN TRANSLATION-III**		**QURAN TRANSLATION-III**				
	DISSECTION / SPOTTING	Histology Of Gallbladder & Pancreas	Development Of Gallbladder &Pancreas	Ibadaat-3	Imaniat-3	Imaniat-3	Ibadaat-3			
		Ass. Prof. Dr Maria (Even)	Prof Dr Ifra (Odd)	Dr. Fahd Anwar (Even)	Mufti Naeem Sherazi(Odd)	Mufti Naeem Sherazi(Even)	Dr. Fahd Anwar(Odd)			
18-02-2023 SATURDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**PEDIATRICS**		**SDL EVALUATION 12AM-12:30PM**	**DISSECTION/SGD 12:30PM-2:00PM**	SDL Anatomy Large Intestine Online SDL Evaluation
		Intestinal secretion and its functions, pancreatic juice, its composition and functions, pancreatitis, overall mechanism of digestion and absorption of intestine (amino acids, fatty acids and glucose	Motor function of large gut, defecation reflex and pathophysiology (diarrhea,constipation, ulcerative colitis, mega colon and carcinoma of colon)	Development Of Small Intestine	Histology Of Small Intestine	Acute & Chronic Diarrhea		**SDL EVALUATION**	Gallbladder & Biliary Apparatus	
		Dr Aneela (Even)	Dr Shazia (Odd)	Prof Dr Ifra (Even)	Ass. Prof. Dr Maria (Odd)	Dr. Samra Javed(Even)	Dr. Javeria Zain (Odd)			

Topics For Practical with Venue
• Histology Of Liver & Gall Bladder (Anatomy Histology Practical) Venue-Histology Laboratory-Dr Sadia Baqir • Analysis Of Food Components (Wheat) (Biochemistry Practical) Venue- Biochemistry Laboratory • Examination Of Superficial Reflexes (Physiology Practical) Venue – Physiology Lab

Topics For Small Group Discussion& CBLs With Venue
• Physiology CBL: Peptic Ulcer (Venue: Lecture Hall No 5) • Biochemistry SGD: Gluconeogenesis and Its Regulation (Venue: Lecture Hall No 2)

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For Second Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-120	Dr. Gaiti Ara	Lecture Hall No.04 Anatomy Lecture Hall
B	121-240	Dr. Maryam Sohail	Lecture Hall No. 03 Anatomy Lecture Hall
C	241-Onwards	Dr. Sadia Baqir	Dissection Hall

Venue For Second Year Batches For PBL & SGD Team-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	Lecture Hall no.05 Physiology	Dr. Aneela Yasmeen
Batch-A2	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Shazia Nosheen
Batch-B1	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Kamil
Batch-B2	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-C1	(141-175)	Lecture Hall no.05 (Basement)	Dr. Nayab (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.04 (Basement)	Dr. Maryam (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.02 (Basement)	Dr. Ali Raza (PBL) Dr. Ismail (SGD)
Batch-D2	(246-280)	Conference Room (Basement)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	New Lecture Hall no.01	Dr. Muhammad Usman
Batch-E2	(315 onwards)	Lecture Hall no.04	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Faiza Zafar	Dr. Aneela / Dr. Najam us Sehar
2.	Batch –B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Shahrukh Khan	Dr. Nayab Zonish / Dr. Muhammad Usman
4.	Batch –D	211-280	Dr. Rahat Afzal	Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir / Dr. Ismail

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

Topic Details Of SDL Biochemistry

- Types of Jaundice with Lab Investigations (Tabulated Form)
- Digestion of Lipids by Pancreatic Enzymes
- Protein Degradation by Enzyme Systems
- Types of Jaundice with Lab Investigations (Tabulate

Topic Details Of SDL Anatomy

- Small Intestine
- Large Intestine

Time Table For GIT Module (Fourth Week)
(20-02-2023 to 25-02-2023)

DATE/DAY	8:00am-9:30am	9:30am – 10:20am		10:20am-11:10am		11:10am-12:00pm		12:00pm – 2:00pm			Home Assignments(2HRS)
20-02-2023 MONDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY LGIS**		**ANATOMY LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**			SDL Physiology Physiology Of Liver / Gall Bladder, Liver And Biliary Secretion
		Motor function of large gut, defecation reflex and pathophysiology (diarrhea, constipation, ulcerative colitis, mega colon and carcinoma of colon)	Intestinal secretion and its functions, pancreatic juice, its composition and functions, pancreatitis, overall mechanism of digestion and absorption of intestine (amino acids, fatty acids and glucose)	Histology Of Small Intestine	Development Of Small Intestine	Bile & Pancreatic Juice	LFT's Jaundice	Spleen			
		Dr Shazia (Even)	Dr Aneela (Odd)	Ass. Prof. Dr. Maria (Even)	Prof. Dr. Ifra(Odd)	Dr. Uzma (Even)	Dr. Anoosh (Odd)				
21-02-2023 TUESDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY SDL-II**		**RESEARCH-III LGIS**		**BIOCHEMISTRY LGIS**		**DISSECTION/SGD**			SDL Physiology LFTs, Jaundice
		Gastric secretion, digestion in stomach, peptic ulcer and gastritis		Scales of Data Measurement		Nutrition-I	GIT Hormones & Succusentericus	Pancreas			
		Dr. Shazia (Even)	Dr. Sheena (Even)	Dr. Rizwana Shahid (Even)	Dr. Uzma Hayat(Odd)	Dr. Rahat (Even)	Dr. Uzma (Odd)				
22-02-2023 WEDNESDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PBL SESSION-II**		**SURGERY LGIS**		**ANATOMY LGIS**		**DISSECTION/SGD**			SDL Biochemistry Individual Sugars
		PBL SESSION-II		Acute Abdominal Pain		DevelopmentOf Large Intestine	Histology Of Large IntestineI	Large intestine CBL- Acute Appendicitis			
		PBL Team Of Second Year MBBS		Dr. Amjad (Even)	Dr. Kiran (Odd)	Prof. Dr. Ifra (Even)	Ass. Prof. Dr. Maria(Odd)				
23-02-2023 THURSDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**PHYSIOLOGY SDL-III**		**ANATOMY LGIS**		**MEDICINE**		**DISSECTION/SGD**			SDL Anatomy Liver And Pancreas
		Small intestine motility and malabsorption (sprue, paralytic ileus and Crohn's disease)		Histology of Large Intestine-I	Development of Large Intestine	Irritable Bowel Syndrome		Vasculature of GIT (Blood Supply, Venous drainage, Lymphatic drainage)			
		Dr Uzma (Even)	Dr. Fareed (Odd)	Ass. Prof. Dr. Maria (Even)	Prof. Dr. Ifra (Odd)	Dr. Aqsa (Even)	Dr. Sadia (Odd)				
24-02-2023 FRIDAY	**8:00-9: 00AM**	**9:00-10:00am**		**10:00-11:00am**		**11:00-12:00pm**					
	RESEARCH-IV	**PHYSIOLOGY SDL-IV**		**PAK STUDIES/ISLAMIYAT-I**		**PAK STUDIES/ISLAMIYAT-I**					
	Measures of central tendency	Intestinal secretion and its functions, pancreatic juice, its composition and functions		Toheed	Qayam e Pakistan, Aghraaz o Maqasid	Qayam e Pakistan, Aghraaz o Maqasid	Toheed				
	Dr. Rizwana Shahid (Even) / Dr. Uzma Hayat(Odd)	Dr. Shazia (Even)	Dr. Sheena (Odd)	Mufti Naeem Sherazi (Even)	Qari Aman Ullah(Odd)	Qari Aman Ullah(Even)	Mufti Naeem Sherazi (Odd)				
25-02-2023 SATURDAY	**Practical &CBL/SGD** Topic & Venue Mentioned at The End	**BIOCHEMISTRY LGIS**		**ANATOMY LGIS**		**PHARMACOLOGY LGIS**		**PAK STUDIES/ISLAMIYAT**			SDL Anatomy (Blood Supply, Venous drainage, Lymphatic drainage)
		GIT Hormones & Succusentericus	Nutrition-I	Development Of Body Cavities-I	Histology Of Large Intestine-II	Anti-Diarrheal Drugs & drugs for Peptic Ulcer Disease		Tehreek-E-Pakistan Islaahi Tehreekain	Akhi rat-I / Akhrt -I	TehreekE-Pakistan Islaahi Tehreekn	
		Dr. Uzma (Even)	Dr. Rahat (Odd)	Ass. Prof. Dr. Arsalan (Even)	Ass. Prof Dr Maria (Odd)	Dr. Uzma Omer		Qari Aman Ullah (Even)	Mufi Naeem Sherazi (Odd) (Even)	Qari Aman Ullah (Odd)	

Topics For Practical with Venue
• Histology of Small Intestine (Anatomy Histology Practical) Venue-Histology laboratory-Dr Gaiti Ara • Analysis of food components (wheat) (Biochemistry Practical) Venue- Biochemistry laboratory • Examination of Deep reflexes (Physiology Practical) Venue – Physiology Lab

Topics For Small Group Discussion& CBLs With Venue
• Physiology SGD: Physiology of liver and gall bladder, liver and biliary secretion (Venue: Lecture Hall No 5) • Biochemistry SGD: Jaundice & LFTs (Venue: Lecture Hall No 2)

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For Second Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
A	01-120	Dr. Gaiti Ara	Lecture Hall No.04 Anatomy Lecture Hall
B	121-240	Dr. Maryam Sohail	Lecture Hall No. 03 Anatomy Lecture Hall
C	241-Onwards	Dr. Sadia Baqir	Dissection Hall

Venue For Second Year Batches For PBL & SGD Team-II

Batches	Roll No	Venue	
Batch-A1	(01-35)	Lecture Hall no.05 Physiology	Dr. Aneela Yasmeen
Batch-A2	(36-70)	Lecture Hall #.04 (1st Floor Anatomy)	Dr. Shazia Nosheen
Batch-B1	(71-105)	Anatomy Museum (First Floor Anatomy)	Dr. Kamil
Batch-B2	(106-140)	Lecture Hall no.03 (First Floor)	Dr. Iqra Ayub (PGT Physiology)
Batch-C1	(141-175)	Lecture Hall no.05 (Basement)	Dr. Nayab (PGT Physiology)
Batch-C2	(176-210)	Lecture Hall no.04 (Basement)	Dr. Maryam (PGT Physiology)
Batch-D1	(210-245)	Lecture Hall no.02 (Basement)	Dr. Ali Raza (PBL) Dr. Ismail (SGD)
Batch-D2	(246-280)	Conference Room (Basement)	Dr. Almas (PBL) Dr. Najam-us-Sehar (SGD)
Batch-E1	(281-315)	New Lecture Hall no.01	Dr. Muhammad Usman
Batch-E2	(315 onwards)	Lecture Hall no.04	Dr. Rahat (PBL) Dr. Fareed Ullah (SGD)

Sr. No	Batch	Roll no	Names of Teachers	
			Biochemistry	Physiology
1.	Batch – A	01-70	Dr. Faiza Zafar	Dr. Aneela / Dr. Najam us Sehar
2.	Batch –B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Shahrukh Khan	Dr. Nayab Zonish / Dr. Muhammad Usman
4.	Batch –D	211-280	Dr. Rahat Afzal	Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir / Dr. Ismail

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

Topic Details of SDL Biochemistry

- Balanced diet
- Types & effects of Dietary Proteins
- Kwashiorkor & Marasmus (Differentiate)

Topic Details of SDL Anatomy

- Blood Supply Of GIT
- Liver And Pancreas

Time Table For GIT Module (Fifth Week)
(27-02-2023 to 04-03-2023)

DATE/DAY	8:00am-9:30am	9:30am – 10:20am	10:20am-11:10am	11:10am-12:00pm	12:00pm – 2:00pm	Home Assignments(2HRS)
27-02-2023 MONDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**PHYSIOLOGY SDL-V** Pancreatitis, overall mechanism of digestion and absorption of intestine (amino acids, fatty acids and glucose) Dr. Uzma (Even) / Dr. Fareed (Odd)	**GYNAE & OBS LGIS** Common GIT problems in pregnancy (Hyperemesis gravidarum, GERD, Constipation, haemorrhoids) Dr. Ammara Arooj (Even) / Dr. Shama Bashir (Odd)	**PATHOLOGY (LGIS)** Pathologies of Liver, gallbladder and pancreas Dr. Rabbiyah Khalid (Even) / Dr. Iqbal Haider (Odd)	**SDL EVALUATION 12AM-12:30PM** **DISSECTION/SGD 12:30PM-02:00PM** Surface Marking & Radiographs	SDL Physiology Hormones of GIT
28-02-2023 TUESDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**PHYSIOLOGY SDL-VI** Motor function of large gut, defecation reflex Dr. Shazia (Even) / Dr. Sheena (Odd)	**SURGERY LGIS** Anal fissure, Haemorrhoids, Fistula in Ano Dr. Asif (Even) / Dr. Asad (Odd)	**BIOCHEMISTRY LGIS** Digestion & Absorption-I / Nutrition-II Dr. Anoosh (Even) / Dr. Rahat (Odd)	**DISSECTION/SGD** Rectum	SDL Physiology Digestion & Absorption
01-03-2023 WEDNESDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**ANATOMY LGIS** Histology of Large Intestine-II / Development of body Cavities-I Ass. Prof. Dr. Maria / Ass. Prof. Dr. Arsalan	**RADIOLOGY LGIS** Medical Imaging of abdomen-I Dr. Qurat ul Ain (Even) / Dr. Aniqua Saleem (Odd)	**BIOCHEMISTRY LGIS** Digestion and absorption-I / Nutrition-II Dr. Anoosh (Even) / Dr. Rahat (Odd)	**DISSECTION/SGD** Anal canal	SDL Biochemistry Food groups Digestion of Lipids by Pancreatic Enzymes **Online Clinical Evaluation**
02-03-2023 THURSDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**ANATOMY LGIS** Development of body Cavities-II Ass. Prof. Dr. Arsalan	**RESEARCH-V** Compute and Interpret measures of central tendency Dr. Uzma Hayat (Even) / Dr. Rizwana Shahid (Odd)	**BIOCHEMISTRY LGIS** Digestion & Absorption-II / Nutrition-III Dr. Anoosh (Even) / Dr. Rahat (Odd)	**DISSECTION/SGD** Innervation of abdominal Viscera	SDL Anatomy Rectum & Anal canal
03-03-2023 FRIDAY	**8:00-9:00AM** **PHYSIOLOGY SDL-VII** Pathophysiology (diarrhea, constipation, ulcerative colitis, mega colon and carcinoma of colon) Dr. Uzma (Even) / Dr. Fareed (Odd)	**9:00-10:00AM** **BIOCHEMISTRY LGIS** Nutrition-III / Digestion & Absorption-II Dr. Rahat (Even) / Dr. Anoosh (Odd)	**10:00-12:00PM** **DISSECTION/SGD** Dissection & Spotting			
04-03-2023 SATURDAY	**Practical &CBL/SGD** Topic & venue mentioned at the end	**RESEARCH-VI** Measures of dispersion/Secondary Data Analysis Dr. Uzma Hayat (Even) / Dr. Rizwana Shahid (Odd)	**RADIOLOGY LGIS** Medical Imaging of abdomen-II Dr. Sana Yaqoob (Even) / Dr. Saba Bint e Kashmir (Odd)	**FAMILY MEDICINE LGIS** Common Abdominal diseases Dr. Sadia (Even) / Dr. Ishtiaq (Odd)	**PAK STUDIES/ISLAMIYAT-II** Tehreek-e-Aligarh, Sir Syed Ahmad Khan / Akhirat -II Qari Aman Ullah (Even) / Mufti Naeem Sherazi (Odd)	**PAK STUDIES/ISLAMIYAT-II** Akhirat -II / Tehreek-e-Aligarh , Sir Syed Ahmad Khan Mufti Naeem Sherazi (Even) / Qari Aman Ullah (Odd)	SDL Anatomy Innervation of abdominal Visceras

Topics For Practical with Venue
• Histology of Large Intestine (Anatomy Histology Practical) Venue-Histology laboratory-Dr Sadia Baqir • Analysis of food components (wheat) (Biochemistry Practical) Venue- Biochemistry laboratory • Performance of Axon reflexes (Triple Response of Skin) (Physiology Practical) Venue – Physiology Lab

Topics For Small Group Discussion& CBLs With Venue
• Physiology CBL: Food Poisoning (Venue: Lecture Hall No 5) • Biochemistry CBL: Lactose Intolerance (Venue: Lecture Hall No 2)

Schedule For Practical / Small Group Discussion

Day	Histology Practical	Biochemistry Practical	Physiology Practical	Physiology SGD	Biochemistry SGD
Monday	**C**	**B**	**E**	**A**	**D**
Tuesday	**D**	**C**	**A**	**B**	**E**
Wednesday	**E**	**D**	**B**	**C**	**A**
Thursday	**B**	**A**	**D**	**E**	**C**
Saturday	**A**	**E**	**C**	**D**	**B**

Venue For Second Year Batches for Anatomy Dissection / Small Group Discussion

Batches	Roll No	Anatomy Teacher	Venue
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B	121-240	Dr. Maryam Sohail	Lecture Hall No. 03 Anatomy Lecture Hall
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Venue For Second Year Batches For PBL & SGD Team-II

Batches	Roll No	Venue	
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2.	Batch –B	71-140	Dr. Uzma Zafar	Dr. Shazia Nosheen
3.	Batch – C	141-210	Dr. Shahrukh Khan	Dr. Nayab Zonish / Dr. Muhammad Usman
4.	Batch –D	211-280	Dr. Rahat Afzal	Dr. Iqra Ayub
5.	Batch -E	281-onwards	Dr. Almas Ijaz	Dr. Kamil Tahir / Dr. Ismail

Venues for Large Group Interactive Session (LGIS) and SDL

Odd Roll Numbers	New Lecture Hall Complex Lecture Theater # 01
Even Roll Number	New Lecture Hall Complex Lecture Theater # 04

Topic Details Of SDL Biochemistry

- Food groups
- Digestion of Lipids by Pancreatic Enzymes
- Protein Degradation by Enzyme Systems
- Types & effects of Dietary Fats and carbohydrates
- Obesity and BMI

Topic Details Of SDL Anatomy

- Biliary apparatus & Portosystemic Anastomosis
- Rectum & Anal canal

Time Table For GIT Module (Sixth Week)
(06-03-2023 TO 10-03-2023)

DATE / DAY	8:00 AM – 9:00 AM	2:00 PM – 03:00 PM
06-03-2023 Monday	Anatomy Regional Assessment /Physiology Viva Voce	
07-03-2023 Tuesday	Anatomy Regional Assessment /Physiology Viva Voce	
08-03-2023 Wednesday	Anatomy Theory Paper	
09-03-2023 Thursday	Physiology Theory Paper	
10-03-2023 Friday	Biochemistry Theory Paper	

Note: Detailed notice regarding content, time and venue will be issued accordingly

Note**:** Timetable Subject to change according to the current circumstances.

SECTION-VI

Table of Specification (TOS) For GIT Module Examination for Second MBBS

Sr. #	Discipline	No. of MCQs (%)	No. of MCQs according to cognitive domain			No. of SEQs (%)		No. of SEQs according to cognitive domain			Viva voce	Total Marks
						No. of items	Marks					
			C1	C2	C3			C1	C2	C3		
1.	Anatomy	25	12	5	5	5	25	1	2	2	50	100
2.	Physiology	20	12	6	2	4	20	1	2	1	40	90
3.	Biochemistry	18	09	8	1	2	10	5	1.5			35
4.	Peadiatrics	5										5
5.	Bioethics Professionalism	1										1
6.	Research, Artificial Intelligence & Innovation	9										9
7.	Pharmacology	2										2
8.	Pathology	3										3
9.	Medicine	2										2
10.	Surgery	1										1
11.	Family Medicine	1										1
12.	Obs & Gynaecology	1										1
										Grand Total	250	

Annexure-I

(Sample MCQ & SEQ Papers)

RAWALPINDI MEDICAL UNIVERSITY, RWP
ANATOMY DEPARTMENT
2nd Year MBBS Module Exam (GIT)

1. Omental bursa develops due to:
    a. Gut rotation.
    b. Rotation of stomach.
    c. Rotation of dorsal mesogastrium.
    d. Rotation &cavitations in dorsal mesogastrium.
    e. Formation of synovial membrane behind stomach.
3. Primarily retro peritoneal organs include:
    a. Pancreas.
    b. Ascending & descending colon.
    c. Kidneys &suprarenals.
    d. Kidneys, suprarenals& rectum.
    e. Duodenum & pancreas.
5. Which of the following is not a derivative of hind gut:
    a. Left 1/3 of transverse colon.
    b. Descending colon.
    c. Rectum & upper part of anal canal.
    d. ileum
    e. Sigmoid colon

2. Rotation of stomach takes place around:
    a. Longitudinal &antero posterior axes.
    b. Axis formed by celiac trunk.
    c. Dorsal mesogastrium.
    d. Ventral mesogastrium.
    e. Longitudenal axis only
4. Regarding spleen:
    a. It is derived from foregut endoderm.
    b. It develops from a mass of mesenchymal cells located between the layers of the dorsal mesogastrium.
    c. Develops in ventral mesogastrium.
    d. Is solely ectodermal.
    e. Never functions as hematopoietic organ

RAWALPINDI MEDICAL UNIVERSITY
GIT MODULE EXAM 2ND YEAR MBBS
ANATOMY SEQS

1. a. Describe formation and enlist contents of rectus sheath. 2.5

   b. Give various sites of portosystemic anastomosis with its clinical significance. 2.5

2. a. Draw and label posterior relations of right kidney. 02

   b. Give course and relations of abdomino pelvic part of left ureter. 03

RAWALPINDI MEDICAL UNIVERSITY
DEPARTMENT OF PHYSIOLOGY
GIT MODULE EXAMINATION MCQ PAPER FOR SECOND YEAR MBBS

1. Mass Movements are initiated by following reflex:
   a. Vomimting
   b. Entrogastric
   c. Gastro colic
   d. Vasovagal
   e. Chewing
2. Intrinsic factor is secreted by the following cells:
   a. Chief
   b. Peptic
   c. Mucus Neck
   d. Enterochromaffin-like
   e. Parietal
3. The center for control of parasymphatetic defecation reflex is located in:
   a. Brainstem
   b. Meissner's plexus
   c. Cerenbral cortex
   d. Sacral segments of spinal cord
   e. Myenteric plexus
4. Spike potentials in intestinal smooth miscle are caused by influx of:
   a. Sodium ions
   b. Chloride ions
   c. Potassium ions
   d. Both sodium ions & calcium ions
   e. Calcium ions
5. The cephalic phase of gastric secretion accounts for the following percentage of total gastric secretion:
   a. 10%
   b. 60%
   c. 20%
   d. 70%

e. 30%

RAWALPINDI MEDICAL UNIVERSITY
GIT MODULE EXAM 2ND YEAR MBBS
PHYSIOLOGY SEQS

1. A 5-year -old child went to the amusemet park. While taking rotatory rides he developed nausea, vomiting & vertigo.
   a) Name the center located in medulla for initiation of vomiting by motion sickness. 1
   b) Give a brief account of vomiting reflex leading to the vomiting act. 4

2. Briefly write the physiological importance of:
   a) Countercurrent blood flow in the villi 2
   b) Mastication (Chewing) 3

Rawalpindi Medical University Department of Biochemistry
2nd Year MBBS
GIT Module

1. Glycogen:

a. Stores are increased in fed state
b. Structure is abnormal shaped in von Gierke's disease
c. Less branchedstructure than starch
d. Stores in liver decrease if phosphofructokinase enzyme is deficient
e. Muscle glycogen provides glucose to brain during fasting

2. End product of carbohydrate digestion is:

a. Glucose
b. Lactose
c. Starch
d. Glycogen
e. Maltose Synthase

3. Regulatory enzyme of Glycogenolysis is:

a. Synthase
b. Phosphorylase
c. Branching enzyme
d. Debranching enzyme
e. Phosphoglucomutase mutase

4. End product of anaerobic glycolysis is:

a. Pyruvate
b. Acetyl CoA
c. Citrate
a. Lactate
d. Oxaloacetate

SEQ

Q. a. Explain composition and role of gastric juice. 03

b. Discuss fate of pyruvate. 02

RAWALPINDI MEDICAL UNIVERSITY
DEPARTMENT OF BIOMEDICAL ETHICS
2ND YEAR MBBS
GIT MODULE

1. ----Includes rules of conduct that may be used to regulate our activities concerning the biological world.
   a. Bio-piracy
   b. Biosafety
   c. Bioethics
   d. Bio-patents
   e. Bio-logistic

2. The right of patients having self-decision is called.
   a. Justice
   b. Autonomy
   c. Beneficence
   d. Veracity
   e. Fidelity

3. Following is not code of ethics.
   a. Integrity
   b. Objectivity
   c. Confidentiality
   d. Behaviour
   e. Autonomy

4. -------in the context of medical ethics, if it's fair and balanced
   a. Justice
   b. Autonomy
   c. Beneficence
   d. Veracity
   e. Fidelity

5. ------Principle requiring that physicians provide, positive benefits
   a. Justice
   b. Autonomy
   c. Beneficence
   d. Veracity
   e. Fidelity