

SWAT MEDICAL COLLEGE SWAT

DEPARTMENT OF MEDICAL EDUCATION

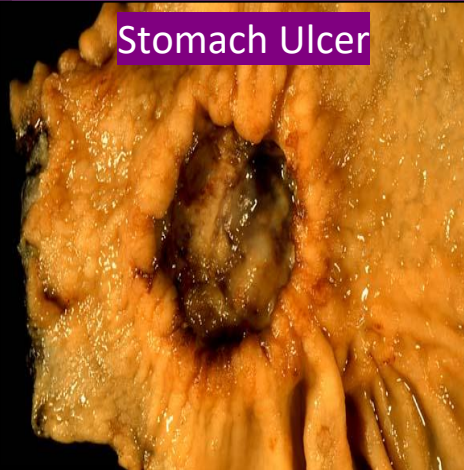


GASTROINTESTINAL TRACT & HEPATO BILIARY SYSTEM-II MODULE

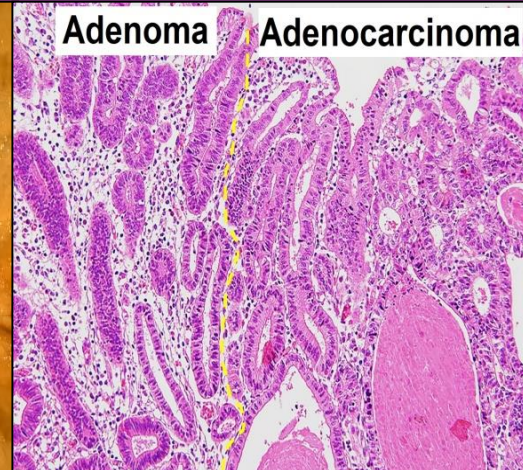
Gastrointestinal tract



Stomach Ulcer



Adenoma Adenocarcinoma



4TH YEAR MBBS

BLOCK: K

CLASS OF 2024

DURATION: 12 WEEKS

FROM: 27/03/2024 TO 19/06/2024

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1 Academic Calendar

Tentative Annual Calendar MBBS – 2023-24 Swat Medical College, Swat							
Activity/ Events	Week	Date	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Orientation Week	1	12 th to 16 th Feb	Foundation-I (6 weeks) 22 nd March, Module Exam	Neurosciences-IA (6 weeks) 22 nd March, Module Exam	Foundation II (3 weeks) 22 nd March, Module Exam	Neurosciences – II (6 weeks) 25 th and 26 th March Block J Exam	Previous 5 th Year Preparatory leaves and annual exam
Regular Classes	2	19 th to 23 rd Feb					
Regular Classes	3	26 th Feb to 1 st March					
Regular Classes	4	4 th to 8 th March					
Regular Classes	5	11 th to 15 th March					
Regular Classes	6	18 th to 22 nd March	Blood & Immunology (3 weeks) 6 th & 7 th May Block A exam	Neurosciences-IB (5 weeks) 13 th & 14 th May Block D	Infection & Inflammation (6 weeks) 6 th May to 7 th May Block G exam	GIT and Hepatobiliary – II (9 weeks) 10 th and 11 th June Block K Exam	Foundation-III (2 weeks) 22 nd March Module Exam Blood & Immunology-III (2 weeks) 5 th April Module Exam
Regular Classes	7	25 th to 29 th March					
Regular Classes	8	1 st to 5 th April					
Spring Break/Eid-ul-Fitr	9	8 th to 12 th April					
Sports Week	10	15 th to 19 th April					
Regular Classes	11	22 nd to 26 th April	MSK-I (8 weeks) 1 st & 2 nd July Block B Exam	GIT, Hepatobiliary & Metabolism- (8 weeks) 1 st & 2 nd July	Multisystem (5 weeks) Module Exam 31 st May	Renal – II Module (4 weeks) 1 st and 2 nd July Module Exam	MSK-III (2 weeks) 06 th & 07 th May Block N exam
Regular Classes	12	29 th to 3 rd May					
Regular Classes	13	6 th to 10 th May					
Regular Classes	14	13 th to 17 th May					
Regular Classes	15	20 th to 24 th May					
Regular Classes	16	27 th May to 31 st May	CVS-I (3 weeks) 23 rd August Module Exam	Renal (3 weeks) 12 th to 13 th August Block E	MSK-II (3 weeks) 2 nd Sep 3 rd Sep Block H exam	Endocrine and Reproduction – II (8 weeks) 16 th and 17 th September Block-L exam	Cardiorespiratory-III (3 weeks) 3 rd & 4 th June Block O Exam
Regular Classes	17	3 rd to 7 th June					
Regular Classes	18	10 th to 14 th June					
Eid-ul-Adha Holidays	19	17 th to 21 st June					
Regular Classes	20	24 th to 28 th June					
Summer Vacations	21-23	3 rd to 21 st July	Respiratory-I (4 weeks) 23 rd -24 th SEP Block-C Exam	Endocrine-I (4 weeks) 6 th Sep	CVS-II (3 weeks) 20 th September Module exam	EYE and ENT (5 weeks) 14 th to 15 th OCT BLOCK M1 & M2 Exam	Renal-III Module (2 weeks) 14 th June Module Exam Endocrine & Reproduction-III (3 weeks) 29 th & 30 th July Block P Exam
Regular Classes	24	22 nd to 26 th July					
Regular Classes	25	29 th July to 2 nd Aug					
Regular Classes	26	5 th to 9 th Aug					
Regular Classes	27	12 th to 16 th Aug					
Regular Classes	28	19 th 23 rd Aug	PREPARATORY LEAVES	PREPARATORY LEAVES	PREPARATORY LEAVES	PREPARATORY LEAVES	Neurosciences – III (3 weeks) 16 th August Module Exam
Regular Classes	29	26 th to 30 th Aug					
Regular Classes	30	2 nd to 6 th Sep					
Regular Classes	31	9 th to 13 th Sep					
Regular Classes	32	16 th to 20 th Sep					
Regular Classes/ Preparatory Leaves	33	23 rd to 27 th Sep	Annual Exam as per KMU schedule.	Annual Exam as per KMU	Annual Exam as per KMU schedule.	Annual Exam as per KMU schedule.	GIT & Hepatobiliary (2 weeks) 6 th Sep Module Exam
Regular Classes/ Preparatory Leaves	34	30 th Sep to 4 th Oct					
Regular Classes/ Preparatory Leaves	35	7 th to 11 th Oct					
Regular Classes/ Preparatory Leaves	36	14 th to 18 th Oct					
Regular Classes/ Preparatory Leaves	37	21 st to 25 th Oct					
Regular Classes/ Preparatory Leaves	38	28 th Oct to 1 st Nov	Winter vacation	Winter vacation	Winter vacation	Winter vacation	PREPARATORY LEAVES
Regular Classes/ Preparatory Leaves	39	4 th to 8 th Nov					
Regular Classes/ Preparatory Leaves	40	11 th to 15 th Nov					
Regular Classes/ Preparatory Leaves	41	18 th to 22 nd Nov					
Regular Classes/ Preparatory Leaves	42	25 th to 29 th Nov					
Regular Classes/ Preparatory Leaves	42	2 nd to 6 th Dec	Winter vacation	Winter vacation	Winter vacation	Winter vacation	PREPARATORY LEAVES
Regular Classes/ Preparatory Leaves	43	9 th to 13 th Dec					
Regular Classes/ Preparatory Leaves	44	16 th to 20 th Dec					
Regular Classes/ Preparatory Leaves	45	23 rd to 27 th Dec					
Regular Classes/ Preparatory Leaves	46-49	November 2024					
Regular Classes/ Preparatory Leaves	50-53	December 2024	Winter vacation	Winter vacation	Winter vacation	Winter vacation	PREPARATORY LEAVES
Regular Classes/ Preparatory Leaves	54-57	January 2025					
Start of new academic session 2025-26			February 2025	February 2025	February 2025	February 2025	March 2025

Note: The given dates are tentative and may be subject to change as needed/demanded. The KMU will share the annual exam schedule at the end of the current session.

Dear Student

The Department of Medical Education (DME) has successfully conducted faculty training for the curation of study guides. In accordance with the guidelines set by Khyber Medical University, Peshawar, this study guide has been meticulously developed by the respective block coordinator. For any queries or concerns, kindly refer to the "Query and Troubleshooting" section for contact information.

Please be advised that the timetables provided in the study guides are tentative, and the final versions will always be accessible on the official website, notice boards, and social media platforms.

It is crucial to acknowledge that this guide is subject to continuous improvement, aligning with updates to module learning objectives and blueprints by KMU Peshawar. It is noteworthy that the learning objectives and blueprints outlined in this guide represent an enhanced and revised version of those originally provided by KMU.

For more information on modules and examination blueprints, please visit

<https://kmu.edu.pk/examination/guidelines>.

Your login link of official website: https://mis.swatmedicalcollege.edu.pk/login/student_login

2 List Of Abbrevation

<u>KEY:</u>	Abbrevation	<u>KEY:</u>	Abbrevation
Anat-L	Anatomy Lecture	MCQ:	Multiple Choice Questions
Anat-SGD	Small Group Discussion in Anatomy	EMQ:	Extended Matching Question
Bio-L	Biochemistry Lecture	IL:	Interactive Lectures
Bio-P	Biochemistry Practical	CBL:	Case Based Learning
CMed	Community Medicine	SBL:	Scenario Based Learning
DSL	Directed Self Learning	OSPE:	Objective structured Practical Evaluation
FDT	Film/Demonstration/Tutorial	OSCE:	Objective structured Clinical Evaluation
FMed	Forensic Medicine	HEC:	Higher Education Commission
Histo-P	Histology Practical	MIT:	Mode of transfer of informations
IPS	Islamiyat/Pak Studies	QEC:	Quality Enhancement Cell
SDL	Self-Directed learning	SAQs	Short Answer Questions

3 Module Committee

s.no	Name	Department	Role
1.	Prof. Dr. Aziz Ahmad	Dean / principal	
2.	Dr. M Junaid Khan	DME	Director
Module Team			
3.	Prof. Dr Imran Ud Din	Pathology department	MPC Chairman – II
4.	Assist. Prof. Dr. Siyab Ahmad	Pathology department	Module Co-ordinater
5.	Asso. Prof. Dr Humaira Ali	Anatomy	Member
6.	Prof. Dr. Fiza Iqbal	Physiology	Member
7.	Asso. Prof. Dr Obaid Ur Rahman	Biochemistry	Member
8.	Assit. Prof. Dr. Muhammad Younas	Forensic Medicine	Member
9.	Assist. Prof. Dr. Moneeb khan	Community medicine	Member
10.	Asso. Prof. Dr Rahman Shah	Pharmacology	Member
11.	Prof. Dr. Saif ur Rahman	Surgery	Member
12.	Assist. Prof. Dr. Sardar Ali	Medicine	Member
13.	Asso. Prof. Dr. Ibrahim Khan	Peadiatrics	Member
14.	Asso. Prof. Dr. Tabassum Nahid Kausar	Obstetrics and Gynecology	Member
15.	Prof. Dr. Gulshan Hussain	Otorhinolayrangealogy	Member
16.	Prof. Dr. Haroon Ur Rashid	Opthalmology	Member
17.	Miss Afroz	PRIME	Member
18.	Mr. Nadeem Badshah	Medical eduction	Member
19.	Mr. Abdul Mateen	Examination Cell	Member



4 Recommended List Of Icons



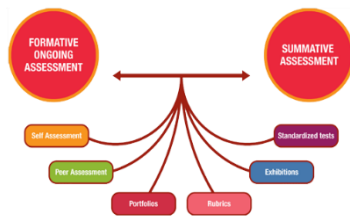
Introduction To Case



For Objectives



Critical Questions



Assessment



Resource Material

5 Mission/ Vision of the College

5.1 Mission Statement of the Institution:

To train medical students as per international standards, thereby producing doctors who exhibit excellence as professionals, academicians, researchers and adeptly fulfil community healthcare needs through the application of ethical and evidence-based practices

5.2 Vision Statement of the Institution:

To be a center of excellence in medical education, patient care and research globally.

6 Preface

Welcome to the gastrointestinal and hepatobiliary system module study guide, where the overarching goal is to provide students with a profound understanding of medical science and practice of gastrointestinal and hepatobiliary system. This module covers the topics which are inflammatory and neoplastic diseases of oral cavity, salivary gland, non-neoplastic and tumor of esophagus, gastritis and peptic ulcer, malignancies of stomach, diarrheal diseases, malabsorption syndromes and inflammatory bowel diseases, benign and malignant lesions of small and large intestine. Pathological conditions of liver like jaundice and cholestasis, autoimmune liver diseases & cholangiopathies, metabolic liver diseases-1, drug and toxin induced liver injury & fatty liver disease, cirrhosis of liver, tumors of liver, inflammatory diseases and tumors of gall bladder.

All these diseases are very common in clinical practice and will be helpful in understanding the GIT and Liver pathology. Real life scenarios have been added in the module which will be discussed in small groups to help students to develop their clinical approach to understand and solve the clinical problem by correlating their basic knowledge of anatomy, physiology, biochemistry and pathology with findings of a clinical case.

7 Introduction/ Organization of Module

7.1 Introduction:

In this module, medical students will learn in detail the normal structure, function and diseases of GI Tract and hepatobiliary system. Children and adults present to general practice, or hospitals with signs and symptoms of some of very common illnesses related to GIT & Liver including vomiting, chronic diarrhea, constipation, peptic ulcers, enteric fever, malnutrition, jaundice etc. This module will provide students opportunities to understand the basis of these illnesses including the mechanism involved in the development of these pathologies and integrate basic medical science knowledge to clinical problem-solving.

Students will identify how gastrointestinal and hepatobiliary system (Embryology, Microscopic Anatomy and Gross Anatomy) integrates with function (physiologic mechanisms of GI motility, digestion and absorption, and liver and pancreatic function). During the module, students will acquire a wider, more generally applicable knowledge of immunology, metabolism, infectious disease and pathology related to the GI system. Therefore, the overall objective of this course is to provide an integrative understanding of the structure and functions of the gastrointestinal tract.

7.2 Rationale:

Diseases of the GIT are common all over our country. It is essential to make early diagnosis and treat the disease in order to reduce morbidity and mortality. This module provides an integrative understanding and detailed and clinically relevant information of pathology related to the digestive and biliary system.

7.3 Organization of the Study guide:

The modules include sessions on important pathological diseases of gastrointestinal system and hepatobiliary system. The relevant clinical subjects are also taught under the shared themes with pathological explanation. The medical and surgical management and preventive aspect of the diseases is also addressed.

Teaching Hours Allocation

Table : Total hours distribution of each subject

S. No	Subject	Hours
1	Pathology	49
2	Pharmacology	20
3	Forensic medicine	22
4	Community medicine	23
5	Medicine	13
6	Surgery	14

7	Pediatrics	4
8	Family medicine	3
9	Anatomy	1
10	PRIME	1
11	Research*	16**

Table 2: Themes

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

7.4 Teaching Strategies:

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

- Interactive Lectures
- Small Group Discussion
- Case- Based Learning
- Practicals
- Skills session
- Hospital / Clinic visits
- Self-study

INTERACTIVE LECTURES (IL) : In large group, the Interactive Lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients' interviews, exercises, etc. Students are actively involved in the learning process.

SMALL GROUP DISCUSSION (SGD): This format helps students to clarify concepts acquire skills or attitudes. Sessions are structured with the help of specific exercises such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from Interactive Lectures, tutorials and self study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE-BASED LEARNING (CBL): A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained in clinical and basic health sciences during the module.

PRACTICAL: Basic science practicals related to anatomy, biochemistry, pathology, pharmacology and physiology are scheduled for student learning.

SKILLS SESSION: Skills relevant to respective module are observed and practiced where applicable in skills laboratory or Department of Physiotherapy.

HOSPITAL VISITS: In small groups, students observe patients with signs and symptoms in hospital or clinical settings. This helps students to relate knowledge of basic and clinical sciences of the relevant module,

SELF STUDY: Students' assume responsibilities of their own learning through individual study, sharing and discussing with peers, seeking information from Learning Resource Center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self-study.

7.5 Assessment strategies

Theory:

- **MCQs (Multiple Choice Questions)** are used to assess objectives covered in each module.
- A MCQ has a statement or clinical scenario followed by four options (likely answer).
- Students after reading the statement/scenario select ONE, the most appropriate response from the given list of options.
- Correct answer carries one mark, and incorrect 'zero mark'. There is no negative marking.

OSPE/OSCE: Objective Structured Practical/Clinical Examination:

- Each student will be assessed on the same content and have same time to complete the task.
- Comprise of 12-25 stations.
- Each station may assess a variety of clinical tasks, these tasks may include history taking, physical examination, skills and application of skills and knowledge
- Stations are observed, unobserved, interactive and rest stations.
- Observed and interactive stations will be assessed by internal or external examiners.
- Unobserved will be static stations in which there may be an X-ray, Labs reports, pictures, clinical scenarios with related questions for students to answer.
- Rest station is a station where there is no task given and in this time student can organize his/her thoughts.

Internal Evaluation

- Students will be assessed to determine achievement of module objectives through the following:
 - **Module Examination:** will be scheduled on completion of each module. The method of examination comprises theory exam which includes MCQs and OSPE (Objective Structured Practical Examination).
 - **Graded Assessment of students by Individual Department:** Quiz, viva, practical, assignment, small group activities such as CBL, online assessment, ward activities,

examination, and log book.

7.6 Feedback mechanism and summary

1. Students' feedback on assessment strategies will be taken in a preformed proforma for feedback twice a year i.e., pre-prof and prof exams.
2. Feedback of theory as well as OSPE/OSCE & Viva will be taken.
3. Department of Medical Education & Quality Enhancement Cell in collaboration with Exam Cell of STMC is responsible to conduct this exercise.

8 Table Of Specification

Subject	No. of Hours Allocated in Time table				Total	Weightage	Percent Distribution	Assessment		OSPE
	Large Group Format		Small Group Format					MCQs	VIVA	
	Lectures	DSLs	Practicals	SGDs						
Pathology	36	03	06	04	49	29.1 %	29.5%	35	02	02
Pharmacology	10	03	05	02	20	11.6 %	12.04 %	14	02	02
Forensic medicine	10	03	05	04	22	13.3 %	13.25 %	16	02	02
Community medicine	14	00	09	00	23	14.1 %	13.85 %	17	02	04
Medicine	13	00	00	00	13	8.3%	7.8%	10	00	01
Surgery	14	00	00	00	14	8.3%	8.4%	10	02	01
Pediatrics	04	00	00	00	04	2.5%	2.4%	03	00	00
Family Medicine	03	00	00	00	03	1.6%	1.8%	02	00	00
Anatomy	01	00	00	00	01	0.8%	0.6%	01	00	00
PRIME	01	00	00	00	01	0.8%	0.6%	00	00	00
Research	00	00	00	16	16	10%	9.6%	12	00	00
Total	106	09	25	26	166	100	100%	120	20	



9 Learning Objectives

9.1 General Learning Outcomes

Knowledge

By the end of GIT-II Module, 4th year MBBS students will be able to:

1. Describe the development of foregut, mid gut and hind gut.
2. Discuss the anomalies of the gut.
3. Describe gross and microscopic anatomy of various parts of GIT.
4. Describe gross and microscopic features of liver and biliary system.
5. Explain the physiology of GIT.
6. Describe biochemistry of digestive juices
7. Describe biochemistry of digestion and absorption of carbohydrates, proteins and lipids
8. Understand and explain the mechanism of the metabolism of the liver
9. Explain pathological findings identified in GIT pathology
10. Enlist pathologies involving gastrointestinal tract
11. Identify role of pharmaceutical agents used for diseases involving GIT like vomiting and diarrhea.

Skills

1. Interpret the liver function tests in different hepatic diseases.
2. Write prescriptions for common GIT & hepatobiliary disorders.
3. Describe medico legal aspects of abdominal trauma.
4. Describe medico legal aspects of vegetable acid, corrosive and irritants poisoning.
5. Describe the epidemiology and prevention of malnutrition and viral hepatitis.
6. Interpret radiological investigations in relation to GIT

Attitude

The students must show positive attitude to:

1. Develop good manners and should be honest to their studies
2. Work hard and be regular and punctual in the class
3. Participate in class and practical work efficiently
4. Follow the basic laboratory protocols.
5. Develop communication skills with sense of responsibility
6. Demonstrate the effective attitude towards the teachers and colleagues
7. Maintain ethical values in dealing with patients.
8. Demonstrate a professional attitude, team building spirit and good communication skills

9.2 Specific Learning Outcomes

Theme-1 (Difficulty in swallowing)				
Subject	Topic	Hours	S#	Learning objective
Pathology	Salivary Gland (Inflammation and tumors)	1	1	Classify the inflammatory and neoplastic diseases of salivary gland.
			2	Describe the etiology, morphology and clinical presentation of inflammatory and neoplastic diseases of salivary gland.
	Esophagus	2	3	Classify esophagitis.
			4	Describe the etiology, pathophysiology, morphology, clinical presentation and complications of esophagitis
			5	Classify esophageal tumors.
			6	Describe the etiology, pathogenesis, morphology, clinical presentation, diagnosis and complications of esophageal tumors
Medicine	Oral Cavity Diseases	1	7	Discuss the etiology of stomatitis and Aphthous ulcers

			8	Discuss the clinical features of stomatitis and Aphthous ulcers
			9	Discuss the investigations of stomatitis
			10	Devise a management plan for stomatitis and Aphthous ulcers
	Esophagus: 1) Esophageal motility disorders	1	11	Discuss the causes of esophageal motility Disorders
			12	Discuss the clinical features of esophageal motility disorders

MIT:mode of information transfer. E.g. lecture, SGD, DSL, Practical, skill lab etc etc

			13	Discuss the relevant investigations of esophageal motility disorders
			14	Devise a management plan of esophageal motility Disorders
	2) Esophagitis	1	15	Discuss the etiology of esophagitis
			16	Discuss the clinical features of esophagitis
			17	Discuss the appropriate diagnostic testing for Esophagitis
			18	Devise a management plan for esophagitis
	3) Cardia achalasia	1	19	Discuss the etiology, clinical features, investigations and management of Cardia Achalasia
	4) Gastro Esophageal reflux disease (GERD)		20	Discuss the risk factors, etiology, clinical features, investigations, complications and management of GERD
ENT	Cleft lip and palate	1	21	Discuss the etiology, clinical features, investigations, complications and management of cleft lip and palate
	Pharyngitis and Tonsillitis	1	22	Discuss the etiology, clinical features, investigations, complications and management of Pharyngitis and acute Tonsillitis
			23	Explain the clinical features, and management of peritonsillar abscess
			24	Discuss the classification, etiology, clinical features, investigations, and management of Chronic Tonsillitis
	Oropharyngeal cancer	1	25	Discuss the classification, etiology, clinical features, investigations, and management of oropharyngeal cancers
	Salivary glands	1	26	Classify diseases of the salivary glands

			27	Explain the etiology, clinical features, investigations and management of Mumps, and Sialadenitis
			28	Explain the etiology, clinical features, investigations and management of salivary ducts stones
	Dysphagia	1	29	Explain the types, etiology, clinical features, investigations and management of a patient with dysphagia
Surgery	Tumors of the esophagus	1	30	Discuss the classification, etiology, clinical features, investigations, staging and management of Esophageal cancers
	Para esophageal		31	Explain the etiology, clinical features, investigations and management of Para-esophageal hiatus hernia
PRIME/ Medical Education	Social accountability	1	32	Explain the concept of social accountability
			33	Differentiate between different social accountability issues

Theme-2 (Epigastric pain)

Pathology	Gastritis	1	34	Explain the types, etiology, microscopic morphology and clinical features of Gastritis
	Peptic ulcers	2	35	Discuss the etiology, pathophysiology, morphology, complications and lab. diagnosis of peptic ulcer disease
			36	Discuss the role of H.Pylori & campylobacter in the causation of Peptic ulcer disease

			37	Discuss the morphology, virulence factors and lab diagnosis of H. Pylori & campylobacter
	Gastric polyps and tumors	1	38	Classify gastric polyps and tumors
			39	Describe the pathogenesis, morphology, lab diagnosis and complications of gastric polyps and tumors.
Medicine	Gastritis	1	40	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis
	Peptic ulcer disease	2	41	Explain the types, etiology, clinical features, investigations, management and complications of Gastritis

			42	Describe H.pylori eradication therapy protocols in the treatment of peptic ulcer disease
	Upper GI Bleeding	1	43	Explain the etiology, clinical features, investigations and management of a patient with upper GI bleeding
			44	Describe the indications and procedures of pharmacological and endoscopic treatment of variceal bleeding
Pharmacology	Anti-emetics	2	45	Classify anti-emetic drugs
			46	Describe the mechanism of serotonin antagonists as anti-emetic agents.
			47	Enlist the clinical uses (anti-emetic) and adverse effects of serotonin antagonists.
			48	Describe the pharmacological basis of serotonin antagonists in chemotherapy induced vomiting
			49	Describe the mechanism of H1-antagonists as anti-emetic agents.

			50	Enlist the clinical uses (anti-emetic) of H1- antagonists.
			51	Describe the mechanism of anticholinergic drugs as anti-emetic agents.

			52	Enlist the clinical uses (anti-emetic) anticholinergic drugs.
			53	Describe the pharmacological basis scopolamine in motion sickness
			54	Describe the anti-emetic mechanism of Domperidone).
			55	Enlist the clinical uses (anti-emetic) and adverse effects of D2-receptor blockers.
			56	Compare the pharmacological features metoclopramide & Domperidone.
			57	Describe the drug interaction of metoclopramide with levodopa.
			58	Describe the mechanism of neuroleptics as anti-emetic agent.
			59	Enumerate the clinical uses (anti-emetic) of neuroleptic drugs.
			60	Describe the antiemetic mechanism benzodiazepines.
			61	Describe the antiemetic mechanism glucocorticoids.

			62	Enumerate the indications (anti-emetic)
			63	List anti-emetic drugs used in morning sickness.
			64	List anti-emetic drugs used in chemotherapy induced vomiting.

	Drugs used in the treatment of variceal bleeding		65	Enlist the drugs used in variceal hemorrhage
			66	Describe the mechanism of somatostatin and octreotide in variceal hemorrhage
			67	Describe the mechanism of Vasopressin & Terlipressin in variceal hemorrhage
			68	Describe the mechanism of beta-blockers in variceal hemorrhage
	Drugs used in the treatment of Peptic ulcer disease and Gastritis	2	69	Classify the drugs used in Peptic ulcer disease
			70	Describe the mechanism of action, indications and adverse effects of proton pump inhibitors (PPIs).
			71	Describe the pharmacokinetics of PPIs special emphasis on time of administration
			72	Describe the drug interaction of Omeprazole & H2 blockers with Sucralfate
			73	Describe the drug interaction of Omeprazole with Clopidogrel

			74	Describe the mechanism of action, indications and adverse effects of H-2 blockers.
			75	Compare/differentiate H2-blockers In terms of bioavailability and interactions
			76	Describe the mechanism of action, indications and adverse effects of Antacids.
			77	Enumerate the properties of an ideal antacid.
			78	Describe the pharmacokinetics of antacids with special emphasis on time of administration
			79	Describe the drug interactions of antacids with tetracyclines, iron and fluoroquinolones.
			80	Describe the mechanism of sucralfate in the treatment of peptic ulcer
			81	List the indications of sucralfate.

			82	Discuss the drug interaction of sucralfate with digoxin, ketoconazole and tetracyclines.
			83	Describe the pharmacokinetics of sucralfate with special emphasis on time of administration.
			84	Describe the mechanism, indications and adverse effects of bismuth compounds.

			85	Describe the role of anticholinergic drugs in peptic ulcer.
			86	List the indications (anti-peptic anticholinergic drugs).
			87	Discuss the pharmacological basis for the use of prostaglandin analogues treatment of peptic ulcer.
			88	List the contraindications of misoprostol.
			89	Describe triple therapy for the eradication of H.pylori infection.
			90	Describe quadruple therapy for the eradication of H.pylori infection
Forensic medicine	Common house-hold poisons	1	91	Enlist, domestic, medicinal and garden poisons commonly used
	Corrosives/ Mineral acids		92	Enlist different commonly used mineral acids
			93	Enumerate physical appearance and uses of Sulphuric acid
			94	Describe mechanism of action, fatal dose & period of Sulphuric acid
			95	Describe clinical features and treatment of Sulphuric acid burns

			96	Describe postmortem appearance and forensic importance of Sulphuric acid burns
			97	Enumerate physical appearance and uses of nitric acid
			98	Describe mechanism of action and fatal dose & period of nitric acid
			99	Describe clinical features and postmortem appearance of nitric acid burns
			100	Enumerate physical appearance and uses of hydrochloric acid
			101	Describe clinical features and postmortem appearance of hydrochloric acid burns
	Corrosives/ Alkali	1	102	Enlist different commonly used alkali
			103	Enumerate physical appearance and uses of alkali
			104	Describe mechanism of action, clinical features and treatment of alkali burns
			105	Describe postmortem appearance and forensic importance of alkali burns
	Corrosive/ organic acid	1	106	Enlist different commonly used organic acids
			107	Enumerate physical appearance and uses of carbolic acid

			108	Describe mechanism of action, fatal dose & period of carbolic acid
			109	Describe clinical features and treatment carbolic acid poisoning
			110	Describe postmortem appearance and forensic importance of carbolic acid poisoning
			111	Enumerate physical appearance and uses of oxalic Acid

			112	Describe mechanism of action, fatal dose & period of oxalic acid
			113	Describe clinical features and treatment of oxalic acid poisoning
			114	Describe postmortem appearance and forensic importance of oxalic acid poisoning
	Corrosive/	1	115	Enumerate physical appearance, sources and uses of cyanides
			116	Describe mechanism of action, fatal dose & period of cyanides
			117	Describe clinical features and treatment cyanide poisoning
			118	Describe postmortem appearance and forensic importance of cyanide acid poisoning

Surgery	Gastric cancer	1	119	Describe the types, etiology, risk factors, lab diagnosis and management of a patient with gastric cancer
	Gastric outlet obstruction	1	120	Describe the etiology, diagnosis and management of a patient with gastric outlet obstruction
Community medicine and public health	Health system of Pakistan: Introduction	2	121	Describe health care system of Pakistan using WHO Health system frame work
	Primary health care (PHC)		122	Define PHC
			123	Describe the history of development of PHC
			124	Describe the concepts and components of PHC
			125	Describe comprehensive & selective PHC
			126	Describe reasons for failure of PHC
			127	Describe Health Systems before & after PHC
			128	Describe district health care system
			129	Enumerate indicators for assessing PHC

	Health education	3	130	Define health education
			131	Describe objectives and functions of Health Education
			132	Describe the components of health education
			133	Describe the methods of health education

			134	Describe the communication channel in health Education
			135	Describe the constraints in health education
			136	Describe classification of theories of health Education
			137	Describe the stages in health education
			138	Describe the principles of health education
			139	Describe the strategies for an effective health education program
			140	Explain the methods of evaluation effectiveness of a health education project
	Health		141	Define concept of HMIS
			142	Enumerate the components of HMIS
			143	Describe its importance in health care delivery System
			144	Enumerate the principles of HMIS
			145	Give the causes of failure of HMIS
	Hospital administration	1	146	Define health care delivery system
			147	Describe the need of a specialized hospital administration
			148	Describe the attributes of a good hospital Administrator

			149	Describe functions involved in hospital administration
			150	Describe the levels of hospitals and management levels in a hospital
	Health plans	- 1	151	Describe different health plans

Longitudinal, horizontal, integrated, 5 year, ADP, SAP, Short term, long term		152	Describe characteristics of health plans
Health plans – MDGs	1	153	Enumerate MDGS
		154	Describe targets & indicators of various health related MDGs
		155	Describe reasons for failure to achieve MDGS
Health plans – SDGs	1	156	Enumerate SDGs related to health
		157	Describe targets & indicators of various health related SDGs
		158	Describe Pakistan progress on set targets
Health planning	1	159	Define health planning
		160	Describe importance & use of planning in health
		161	Explain the reasons for ineffective health planning in Pakistan
		162	Describe health planning cycle
		163	Describe the types of health planning

	Health economics	1	164	Define Health economics
			165	Explain the importance of economic studies in health
			166	Describe different tools used in economic Evaluations
	Health policy	1	167	Define health policy
			168	Describe its role in health system
			169	Describe different stages in policy making
			170	Describe the different types of policies
			171	Describe the constraints in policy making
			172	Describe health policy of Pakistan.
	Role of international health agencies in	1	173	Enumerate international health agencies working in health sector.
			174	Discuss structure and function of WHO & UNICEF
			175	Explain the roles of WHO & UNICEF in Pakistan.

	public health			
Theme-3 (Pain right upper abdomen)				
Anatomy	Gross anatomy	1	176	Explain the lobes and segments of the liver
			177	Discuss the gross structure of gall bladder and biliary channels
			178	Explain the gross and microscopic structure of the pancreas
	Liver histology		179	Explain the microscopic structure of the liver and gall bladder

Pathology	Liver Function Tests	1	180	Enumerate the functions of the liver. Explain the significance of different liver function tests. Interpret the Liver function tests in different diseases.
	Mechanisms of liver injury and repair	1	181	Describe the etiology and morphology of liver injury and repair
	Acute Liver failure		182	Describe the etiology, pathogenesis, clinical and biochemical and other features of acute liver failure
	Chronic Liver disease and liver cirrhosis	1	183	Describe the etiology, pathogenesis, clinical and biochemical and other features of chronic liver disease
			184	Explain the complications of liver cirrhosis
	Portal hypertension		185	Describe the etiology, pathogenesis, clinical features and complication of portal hypertension
	Viral hepatitis A and E	1	186	Explain the Etiology, pathogenesis, morphology and clinical features of Acute viral hepatitis A and E infection

	Viral hepatitis B	2	187	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of Acute viral hepatitis B infection
			188	Explain the pathogenesis, morphology and clinical features of Chronic viral hepatitis B infection
			189	Discuss the stages of viral hepatitis B infections
			190	Discuss the complications of chronic Hepatitis B virus infection
			191	Discuss the serological markers of hepatitis B Virus infection
			192	Explain the preventive strategies of Hepatitis B virus infection
	Viral Hepatitis C	1	193	Explain the Etiology, risk factors, pathogenesis, morphology and clinical features of viral hepatitis C infection
			194	Discuss the complications of chronic Hepatitis C virus infection
	Autoimmune hepatitis	1	195	Define autoimmune hepatitis
			196	Explain the serological and morphological features of autoimmune hepatitis
	Toxin and hepatitis		197	Explain the etiology and morphological features of toxins and drug induced hepatitis

	Alcoholic liver disease	1	198	Discuss the morphology, pathogenesis
	Metabolic liver diseases <ul style="list-style-type: none"> Non-Alcoholic Hemochromatosis Wilson`s disease Alpha-1 antitrypsin deficiency 	1	199	Describe the morphology, clinical features and complications of NAFLD, Hemochromatosis, Wilson`s disease and Alpha-1 Anti-Trypsin deficiency
			200	Describe the etiology, morphology, features and complications of Hemochromatosis

		201	Describe the etiology, morphology, features and complications of Wilson's disease
		202	Describe the etiology, morphology, clinical features and complication of Alpha-1 Anti-Trypsin deficiency
	Liver abscess	1 203	Describe the etiology, pathogenesis, morphology, clinical presentation, complications
	Tumors of the liver	1 204	Classify liver tumors
		205	Explain the benign tumors of the liver
		206	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of hepatocellular carcinoma

	Gall bladder <ul style="list-style-type: none">Gall stones	1	207	Discuss the types, risk factors, morphology, clinical features and complications of gall stones
	<ul style="list-style-type: none">Cholecystitis		208	Discuss the risk factors, etiology, morphology, clinical features and complications of acute cholecystitis
			209	Discuss the risk factors, etiology, morphology, clinical features and complications of Chronic Cholecystitis
	<ul style="list-style-type: none">Gall bladder cancer	1	210	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma gall bladder
	Pancreas	2	211	Enlist and define the congenital anomalies of Pancreas

			212	Discuss the risk factors, etiology, morphology, clinical features and complications of acute Pancreatitis
			213	Discuss the risk factors, etiology, morphology, clinical features and complications of chronic pancreatitis
			214	Describe the pathogenesis and complications of pancreatic pseudocyst

			215	Discuss the risk factors, etiology, morphology, clinical features, staging and complications of carcinoma of pancreas
Pediatrics	Hereditary hyperbilirubinemias	1	216	Classify hereditary hyperbilirubinemias
			217	Explain the types, clinical features, investigations and management of hyperbilirubinemias
	Acute hepatitis A	1	218	Explain the Etiology, pathogenesis, features, investigations and treatment of Acute viral hepatitis A infection
Medicine	Hepatitis B virus infection	1	219	Explain the Etiology, pathogenesis, viral hepatitis B infection
			220	Explain the Etiology, pathogenesis, features, investigations and treatment of chronic viral hepatitis B infection
	Hepatitis C virus infection	1	221	Explain the Etiology, pathogenesis, viral hepatitis C infection
			222	Explain the clinical features, investigations, management and complications of liver cirrhosis

			223	Explain the treatment of a patient with hepatic encephalopathy
	Metabolic liver diseases	1	224	Discuss the management of a patient
			225	Discuss the management of a patient
			226	Discuss the management of a patient with primary biliary cirrhosis
			227	Discuss the management of a patient
	Hepatic vein obstruction		228	Discuss the etiology, clinical features of hepatic vein obstruction
	Hepatocellular carcinoma	1	229	Explain the etiology, clinical features of hepatocellular carcinoma
	Carcinoma of the pancreas		230	Discuss the risk factors, etiology, of pancreas
Surgery	Gall bladder and pancreas	2	231	Explain the etiology, clinical features of gall stones

			232	Explain the etiology, clinical features, investigations, treatment and complications of acute and chronic cholecystitis
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			233	Explain the etiology, clinical features, investigations, treatment and complications of acute and chronic pancreatitis
	Carcinoma of the gall bladder		234	Discuss the risk factors, etiology, clinical features, staging and complications of carcinoma of gall bladder
	Liver abscess	1	235	Explain the etiology, clinical features, investigations, treatment and complications of liver abscesses
	Hydatid liver cysts		236	Explain the etiology, clinical features, investigations, treatment, and complications of Hydatid liver cysts.
Pharmacology	Hepatotoxic drugs	1	237	Describe first pass hepatic metabolism
			238	Enlist common hepatotoxic drugs

			239	Explain the drug treatment of paracetamol poisoning.
	Drugs used in the treatment of hepatitis B	1	240	Classify the drugs for hepatitis B virus infection.
			241	Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis B.
		1	242	Classify the drugs for hepatitis C virus infection.

	Drugs used in the treatment of hepatitis C		243	Describe the duration and adverse effects of drugs used in the treatment of chronic hepatitis C.
Community medicine	Viral Hepatitis	1	244	Describe the epidemiological determinants of Hepatitis B & C.
			245	Describe the prevalence and incidence with reference to local context.
			246	Describe the preventive & control measures for Hepatitis B & C.
Family Medicine	Acute and chronic hepatitis	1	247	Explain the etiology and clinical features of acute hepatitis.
			248	Explain the management strategies of acute hepatitis in family practice.
			249	Explain the etiology, clinical features
			250	Explain the management strategies of chronic hepatitis in family practice.
			251	Describe the red flags in a patient with acute and chronic hepatitis for referral to specialty care.

Theme-4: (Diarrhea and Constipation)

Pathology	Intestinal obstruction	1	252	Define hernia, adhesions, volvulus, and intussusception
	Ischemic bowel disease		253	Describe the etiology, pathogenesis, morphology, and complications of small bowel ischemia
	Diarrheas	1	254	Define malabsorption syndrome
			255	Classify diarrheas
			256	Explain the etiology, morphology, clinical features and complications of Celiac disease
	Bacterial enterocolitis	2	257	Explain the etiology, pathogenesis, and clinical features of bacterial enterocolitis
			258	Explain the etiology, pathogenesis, morphology and clinical features of Salmonellosis
	Parasitic enterocolitis	1	259	Classify the parasites invading the small gut
	Entamoeba histolytica	1	260	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Amebiasis
	Giardia lamblia	1	261	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Giardiasis
	Hymenolepis nana	4	262	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of H. nana Infestation

	Diphyllobothrium latum		263	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Diphyllobothrium latum
	Schistosoma hematobium, mansoni and japonicum		264	Enlist physical characteristics of Trematodes
			265	Classify Schistosoma on the basis of organ systems Affected

			266	Describe the routes of infection, pathophysiology life cycle, clinical features and lab diagnosis of Schistosoma hematobium, mansoni and japonicum
			267	Compare the morphological characteristics of eggs of different species of Schistosoma.
	Ascaris lumbricoides	4	268	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Ascaris Lumbricoides
	Strongyloides		269	Discuss the life cycle, morphology, pathogenesis, clinical features and Strongyloides
	Ankylostoma duodenale		270	Discuss the life cycle, morphology, pathogenesis, clinical features and Ankylostoma duodenale

	Enterobius vermicularis		271	Discuss the life cycle, morphology, pathogenesis, clinical features and complications of Enterobius vermicularis
Medicine	Intestinal tuberculosis	1	272	Discuss the etiology, pathogenesis, clinical features, investigations, treatment and complications of intestinal tuberculosis
Surgery	Acute appendicitis	1	273	Discuss the etiology, risk factors, pathogenesis, clinical features, differential diagnosis, investigations, treatment and complications of acute appendicitis
	Intestinal obstruction	1	274	Discuss the etiology, clinical features, investigations, management and complications of intestinal obstruction
Pharmacolog	Antidiarrheal	1	275	Define and classify antidiarrheal agents

y	Etc		276	Describe the mechanism of action of different antidiarrheal agents
	Laxatives (Bulk-forming, stool softners, osmotic laxatives, laxatives, etc.	1	277	Define and classify laxative drugs
			278	Describe the mechanism of action of different laxatives

	Lactulose		279	Describe the pharmacological basis of Lactulose in the treatment of hepatic encephalopathy
	Anti-amoebic drugs	1	280	Classify anti-amoebic drugs
			281	Describe mechanism of actions of Metronidazole & Dialoxanide Furoate
			282	Enlist indications and adverse effect Metronidazole & Dialoxanide Furoate.
			283	Describe the drug interaction of Metronidazole with Alcohol.
	Anthelmintics	1	284	Classify Anti-Helminthic drugs

			285	Enumerate clinical use(s), adverse effects and contraindications of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide
			286	Describe mechanism of action of Albendazole, Mebendazole, Pyrantal Pamoate, Ivermectin, Praziquantel & Niclosamide
	Anti-Salmonellosis drugs	1	287	List the drugs used in enteric fever
			288	Describe the basis for selection of antibiotics in enteric fever based on age, pregnancy and resistance

			289	Describe the clinical applications of fluoroquinolones in the treatment of gastrointestinal disorders
Forensic	Irritants	3	290	Classify irritant poisons
	Forensic		291	Enlist common metallic irritant poisons

medicine	medicine		292	Describe physical appearance, uses, mechanism, fatal dose, fatal period and signs and symptoms of Copper and Mercury poisons
			293	Describe the treatment, postmortem appearance and medicolegal importance of common Copper and Mercury poisons
			294	Describe the signs and symptoms, treatment, postmortem appearance and medicolegal importance of acute and chronic Arsenic poisoning
			295	Describe the signs and symptoms, treatment, postmortem appearance and medicolegal importance of acute and chronic Lead poisoning
	Irritants	1	296	Enlist commonly encountered mechanical poisons
			297	Enumerate symptoms and signs, treatment, postmortem appearance and forensic importance of powder glass

	Irritants/ nonmetallic poisons	4	298	Enlist commonly encountered inorganic elements poisoning
			299	Enumerate physical appearance and uses of phosphorus
			300	Describe mechanism of action, fatal dose & period of phosphorus
			301	Describe clinical features and treatment phosphorus poisoning
			302	Describe postmortem appearance and forensic importance of phosphorus poisoning
			303	Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of aluminum phosphide

		304	Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of chlorine
		305	Describe physical appearance, uses, mechanism of action, clinical features, treatment, postmortem appearance and forensic importance of iodine

	Irritants/ vegetable poisons	2	306	Enlist commonly encountered inorganic elements poisoning.
			307	Describe characteristics, active principles, and clinical features of vegetable poisons.
			308	Enumerate uses, fatal dose and fatal periods of vegetable poisons.
			309	Describe treatment, postmortem appearance, and forensic importance of vegetable poisons.
	Irritants/ animal poisons	2	310	Differentiate between poisonous and non-poisonous snakes
			311	Classify snakes on the basis of their venom.
			312	Describe the characteristics of snake venoms
			313	Classify different snakes venoms
			314	Describe steps of management of snake bite
			315	Describe post mortem appearance and medicolegal aspects of venomous snake bite
			316	Describe sign and symptoms of scorpion bite
	Community medicine	1	317	Describe the common intestinal worm infestation in our local context
			318	Describe the epidemiological determinants of common worm infestation with reference to local Context

			319	Describe the preventive & control measures for common worm infestation
	Control of dysentery	1	320	Describe the epidemiology of Dysentery.
			321	Describe the prevention & control measures of Dysentery.
	Food hygiene	1	322	Describe the term food Hygiene
			323	Describe the importance of food hygiene
			324	Describe the process of Food hygiene
Family medicine	Enteric infections	1	325	Classify enteric infections
			326	Describe the etiology, clinical features, investigations and management of Salmonellosis
			327	Describe the red flags in a patient with Salmonella infections for referral to specialty care.
		1	328	Explain the etiology, and management of acute gastroenteritis.
			329	Discuss the primary and secondary prevention of acute gastroenteritis in a primary healthcare setting.
			330	Describe the red-flags in a patient with acute gastroenteritis for referral to specialty care.

Pediatrics	Lactase deficiency	1	331	Describe the clinical features, investigations, complications, and management of Lactase deficiency.
	Infectious diarrhea		332	Describe the etiology, clinical investigations, complications, and management of infectious diarrheas in children.
	Celiac disease	1	333	Describe the etiology, clinical of Celiac disease.

Theme- 5 (Bleeding per Rectum)

Pathology	Inflammatory bowel disease (IBD)	2	334	Classify IBD
			335	Discuss the risk factors and etiology of IBDs
			336	Explain the pathogenesis clinical presentation of IBD
			337	Differentiate between Ulcerative colitis and Crohn`s disease
			338	Discuss the investigations and management of IBDs
			339	Explain the intestinal and extra-intestinal manifestations/complications of IBDs

			340	Explain the role of surveillance colonoscopy in patients with Ulcerative colitis
	Diverticular disease	1	341	Explain the etiology, pathogenesis, morphology and clinical features of Colonic diverticulosis
	Colonic polyps	1	342	Classify colonic polyps.
			343	Describe the pathogenesis, morphology, clinical presentation, complications and diagnosis of different types of colonic polyps
	Hemorrhoids		344	Define hemorrhoids

			345	Explain the morphology, pathogenesis and clinical features of Hemorrhoids
	Colorectal carcinoma	1	346	Describe the adenoma carcinoma sequence
			347	Describe the pathogenesis, morphology, clinical presentation, complications and staging of colorectal Carcinoma
Surgery	Ulcerative colitis	1	348	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Ulcerative colitis
	Crohn`s disease	1	349	Explain the etiology, pathogenesis, clinical features, complications and surgical management of Crohn`s disease

	Diverticular disease	1	350	Explain the etiology, pathogenesis, features, complications and management of Diverticulosis and Diverticulitis
	Anal diseases:	1	351	Define perianal fistula and anal fissure
	<ul style="list-style-type: none"> • fistula • fissures 		352	Explain the risk factors and management of anal fistula and anal fissures

	• hemorrhoids		353	Explain the risk factors and management of hemorrhoids
	Colorectal cancers	1	354	Classify colorectal cancers
			356	Describe the staging of colorectal cancers
			357	Explain the pathogenesis, risk factors and clinical features of colorectal cancers
			358	Explain the complications, management
	Ischemic Colitis	1	359	Explain the etiology, pathogenesis, Ischemic colitis
Medicine	Irritable bowel syndrome	1	360	Explain the risk factors, clinical features, and management of Irritable bowel syndrome
	Ulcerative colitis	1	361	Explain the etiology, pathogenesis, of Crohn`s disease
	Crohn`s disease	1	362	Explain the etiology, pathogenesis, features, complications and management of Crohn`s disease
	Ano-rectal infections	1	363	Classify anorectal infections
			364	Explain the risk factors, clinical features and management of anorectal infections including sexually transmitted infections
Pharmacology	Drugs used in the treatment of Irritable Bowel Syndrome (IBS)	1	365	Enlist the drugs used in IBS
			366	Describe the mechanism of antagonisms (Alosetron) in IBS
	Drugs used in the	2	367	Classify the drugs used in IBD

	treatment of IBD		360	Describe the mechanism of actions of aminosaliclates, glucocorticoids, purine analogues, methotrexate, monoclonal antibodies and anti-integrin in IBDs
			369	Explain the adverse effects of drugs used in the treatment of IBD
Forensic medicine	Abdominal injuries	1	370	Describe injuries to abdominal wall
			371	Describe injuries to esophagus, intestine and Stomach
			372	Describe injuries to liver and spleen

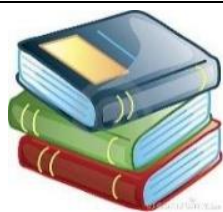
Practical work				
Pathology	Ascaris Lumbricoides	6	373	Identify the important morphological and staining characteristics of the ova
	Enterobius vermicularis		374	Identify the important morphological and staining characteristics of the ova
	Ankylostoma duodenale		375	Identify the important morphological and staining characteristics of the ova
	Liver Function Tests		376	To interpret normal and abnormal liver function tests in different clinical scenarios
Pharmacology	Peptic ulcer disease	5	377	construct prescription for (Quadruple therapy)
	Anti-emetics		378	construct prescriptions for motion sickness, morning sickness, post-operative patient
			379	construct prescriptions for cancer chemotherapy-

				induced vomiting
			380	construct a prescription for a patient suffering from amoebic dysentery
	Enteric fever		381	construct a prescription for a patient suffering from Enteric fever
			382	Write a prescription for a patient suffering from Ascariasis

Forensic medicine	Poisons	5	383	Identify corrosives
	Corosives		384	Case presentation of vitriolage
	Irritants		385	identify common irritant poisons
	Metallic poisons		386	identify common Metallic and poisons
	Vegetable and animal poisons		387	identify common Vegetable and animal poisons
Community medicine	Protein calorie malnutrition	1.5	388	Identify the model
			389	Differentiate between the clinical features of 2 models
			390	Justify its public health importance
			391	Signify the concept of food fortification and food adulteration

	My food plate/ The pyramid	1.5	392	Identify the model
			393	Describe different components of the model
	Health education	1.5	394	identify a health education message on the problem/scenario provided
			395	Formulate a health education message on the problem/scenario provided
	House fly /arthropods	1.5	396	Identify the model
			397	Explain the disease caused by this vector and its control

	Aedes Egypti	1.5	398	Identify the model
			399	Explain the disease caused by this vector and its control
	Autoclave	1.5	400	Identify the model
			401	Explain the types of items for which autoclaves are used
			402	Explain the steps of instruments sterilization



10 Learning Opportunities and Resources

a. Books:

S #	Subjects	Resources
1.	Anatomy	A. Gross Anatomy 1. K.L. Moore, Clinically Oriented Anatomy B. Embryology 1. Keith L. Moore. The Developing Human 2. Langman's Medical Embryology
2.	Community Medicine	1. Community Medicine by Parikh 2. Community Medicine by M Ilyas 3. Basic Statistics for the Health Sciences by Jan W Kuzma
3.	OBGYN	1. Obstetrics by Ten Teachers, Louise C. Kenny, Jenny E. Myers 2. Gynaecology by Ten Teachers, Louise Kenny, Helen Bickerstaff 3. Hacker & Moore's Essentials of Obstetrics and Gynecology 4. Textbook of Gynecology, Rashid Latif Khan 5. Fundamentals of Gynaecology, Dr Arshad Chohan
4.	Pathology	1. Robbins & Cotran, Pathologic Basis of Disease, 9th edition. 2. Rapid Review Pathology, 4th edition by Edward F. Goljan MD
5.	Physiology	1. Textbook Of Medical Physiology by Guyton And Hall 2. Ganong's Review of Medical Physiology 3. Human Physiology by Lauralee Sherwood 4. Berne & Levy Physiology 5. Best & Taylor Physiological Basis of Medical Practice
6.	Peads	Basis of Pediatrics (8th Edition Pervez Akbar)

b. Website:

	 PathologyOutlines.com find pathology information fast
https://www.medscape.com	https://www.PathologyOutlines.com

 	
https://pubmed.ncbi.nlm.nih.gov	https://scholar.google.com
	
https://medlineplus.gov	https://medicine.nus.edu.sg/pathweb

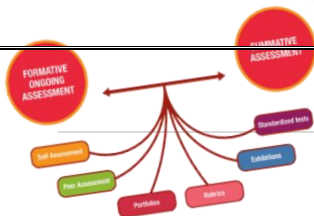
c. Others:

1. <https://www.youtube.com/user/washingtondeceit>
2. <https://www.webpathology.com/>
3. <https://webpath.med.utah.edu/>
4. <https://www.pathologyatlas.ro/>
5. <https://www.osmosis.org/blog/2015/02/16/four-key-resources-to-learn-histology>
6. <https://www.histopathology.guru/>
7. <https://www.pathologyatlas.ro/>
8. <https://histology.medicine.umich.edu/full-slide-list>

d. Articles:

1. Gullo I, Grillo F, Mastracci L, Vanoli A, Carneiro F, Saragoni L, Limarzi F, Ferro J, Parente P, Fassan M. Precancerous lesions of the stomach, gastric cancer and hereditary gastric cancer syndromes. *Pathologica*. 2020 Sep;112(3):166.
2. Kurebayashi Y, Kubota N, Sakamoto M. Immune microenvironment of hepatocellular carcinoma, intrahepatic cholangiocarcinoma and liver metastasis of colorectal adenocarcinoma: Relationship with histopathological and molecular classifications. *Hepatology Research*. 2021 Jan;51(1):5-18.
3. Pop OL, Vodnar DC, Diaconeasa Z, Istrati M, Bințințan A, Bințințan VV, Suharoschi R, Gabbianelli R. An overview of gut microbiota and colon diseases with a focus on adenomatous colon polyps. *International journal of molecular sciences*. 2020 Oct 5;21(19):7359.
4. D'amico F, Baumgart DC, Danese S, Peyrin-Biroulet L. Diarrhea during COVID-19 infection: pathogenesis, epidemiology, prevention, and management. *Clinical Gastroenterology and hepatology*. 2020 Jul 1;18(8):1663-72.
5. Vecchio AL, Conelli ML, Guarino A. Infections and chronic diarrhea in children. *The Pediatric infectious disease journal*. 2021 Jul 1;40(7):e255-8.

6. Zhou Y, Wang M, Yan C, Liu H, Yu DG. Advances in the application of electrospun drug-loaded nanofibers in the treatment of oral ulcers. *Biomolecules*. 2022 Sep 7;12(9):1254.
7. Morgan E, Soerjomataram I, Rungay H, Coleman HG, Thrift AP, Vignat J, Laversanne M, Ferlay J, Arnold M. The global landscape of esophageal squamous cell carcinoma and esophageal adenocarcinoma incidence and mortality in 2020 and projections to 2040: new estimates from GLOBOCAN 2020. *Gastroenterology*. 2022 Sep 1;163(3):649-58.
8. Tarazi M, Chidambaram S, Markar SR. Risk factors of esophageal squamous cell carcinoma beyond alcohol and smoking. *Cancers*. 2021 Feb 28;13(5):1009.
9. Poddar U, Yachha SK, Krishnani N, Kumari N, Srivastava A, Sarma MS. Solitary rectal ulcer syndrome in children: a report of 140 cases. *Journal of pediatric gastroenterology and nutrition*. 2020 Jul 1;71(1):29-33.



10.Examination and Methods of Assessment:

a. Instruction:

The year-4 will be assessed in 4 blocks

- 1) Block-1 (Neurosciences-2 module) will be assessed in paper-J
- 2) Block-2 (GIT and hepatobiliary module) will be assessed in paper-K
- 3) Block-3 (Renal-2, Endocrine & Reproduction-2 module) will be assessed in paper-L
- 4) Block-4 (ENT and EYE modules) will be assessed in paper-M
- 5) Each written paper consists of 120 MCQs.
- 6) Internal assessment will be added to final marks in KMU as shown in below table.
- 7) In OSPE, each station will be allotted 6 marks, and a total of 120 (+10% marks of internal assessment) marks are allocated for each OSPE/OSCE examination.

b. Internal:

Formative Assessment

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

4th Year MBBS Students are directed to maintain their practical journals and logbooks for formative assessment

c. KMU EXAM:

Summative Assessment

- Modular Exam:

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

- MCQ
- SEQ
- OSPE

Annual Exam:

- Internal Evaluation = 10%
- Final Exam= 90%

Theory: MCQs, SEQs Practical: Viva & OSPE

MCQS

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

OSPE

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

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

4th Year MBBS Modules Assessment Plan

Theory paper	Modules	Theory marks	Internal assessment theory (10%)	OSPE/OSPE	Internal assessment OSPE/OSPE (10%)	Total Marks
Paper J	Neurosciences-2	120	13	120	13	266
Paper K	GIT & Hepatobiliary-2	120	13	120	13	266
Paper L	Renal-2, Endocrine & Reproduction-2	120	14	120	13	267
Paper M	ENT and EYE	120	13	120	13	266
Research*				20	15	35
Total Marks		480	53	500	67	1100

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

11. Tentative Timetables

SWAT MEDICAL COLLEGE, SWAT

Department of Medical Education

Time Table **4thYear MBBS**

Class Session 2028

Week – 1

Theme-1: Difficulty in swallowing

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 11:00AM	11:00AM – 04:00 PM
Monday 27/03/2024	C. M – L1 Chi Square test	Med – L1 Oral Cavity Diseases	Surgery – L1 Tumors of the esophagus	HOSPITAL WORK
Tuesday 28/03/2024	EYE – L1 Optics & Eye	Pharma – L1 Anti-emetics	Patho – L1 Salivary Gland (Inflammation and tumors)	
Wednesday 29/03/2024	F. M – L1 Common house hold poisons	Med – L2 Esophageal motility Disorders	Patho – L2 Esophagus - I	
Thursday 30/03/2024	F. M – L2 Corrosives / Mineral acids	ENT – L1 Cleft lip and palate	Patho – L3 Esophagus - II	
Friday 31/03/2024	Pharma – L2 Drugs used in the treatment of variceal bleeding - I	Patho – L4 Peptic ulcers - I	C. M – L2 Correlation, Regression	

Week – 2
Theme-2: Pain epigastrium

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 11:00AM	11:00AM – 04:00 PM
Monday 03/04/2024	Patho – L5 Liver function test	Med – L3 Esophagitis	Pharma – L3 Antidiarrheal Drugs	HOSPITAL WORK
Tuesday 04/04/2024	F. M – L3 Corrosives/ Alkali	Patho – L6 Gastric polyps and tumors	C. M – L3 Primary health care (PHC)	
Wednesday 05/04/2024	ENT – L2 Pharyngitis and Tonsillitis	CPC	Surgery – L2 Gastric cancer	
Thursday 06/04/2024	EYE – L2 Refractive Errors	F. M – L4 Corrosive/ organic acid	Patho – L7 Gastritis, Peptic ulcers	
Friday 07/04/2024	C. M – L4 Health system of Pakistan Introduction	EYE – L3 Correction of Refractive Errors	Pharma – L4 Drugs used in the treatment of peptic ulcer disease and gastritis – I	

Week – 3
Theme-3: Pain right upper abdomen

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 11:00AM	11:00AM – 04:00 PM
Monday 10/04/2024	ENT – L3 Oropharyngeal cancer	Patho – L8 Mechanisms of liver injury and repair, acute liver failure	C. M – L5 District health system & HMIS	HOSPITAL WORK
Tuesday 11/04/2024	C. M – L6 Health Education	Med – L4 Cardia achalasia, GERD	Patho – L9 Viral Hepatitis B	
Wednesday 12/04/2024	Paed – L1 Hereditary Hyperbilirubinemias	F. M – L5 Corrosive/ vegetable acid and cyanides	Surgery – L3 Gastric outlet obstruction	
Thursday 13/04/2024	EYE – L4 Differential Diagnosis Of Lid Bumps	Prime – L1 Social accountability	Patho – L10 Chronic liver disease	
Friday 14/04/2024	Pharma – L5 Drugs used in the treatment of peptic ulcer disease and gastritis – II	EYE – L5 Chalazion, Styce	Patho – L11 Viral Hepatitis C	

Week – 4
Theme-4: Pain right upper abdomen

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 11:00AM	11:00AM – 04:00 PM
Monday 17/04/2024	ENT – L4 Salivary glands	Med – L5 Gastritis	Patho – L12 Autoimmune hepatitis	HOSPITAL WORK
Tuesday 18/04/2024	F. M – L6 Irritants (Lead) Arsenic	Patho – L13 Metabolic liver disease	C. M – L7 Health Education	
Wednesday 19/04/2024	Patho – L14 Viral Hepatitis A and E	Pharma – L6 Drugs used in the treatment of hepatitis B & C - I	Surgery – L4 Gall bladder and pancreas – I	
Thursday 20/04/2024	EID HOLIDAY			
Friday 21/04/2024	EID HOLIDAY			

Week – 5
Theme-5: Diarrhea and constipation

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM - 12:00PM	12:15PM – 01:15 PM	01:15PM - 03:00PM
Monday 01/05/2024	LABOUR DAY				
Tuesday 02/05/2024	ENT – L5 Chronic Tonsillitis	C. M – L6 Hospital Administration	HOSPITAL WORK	Patho – L15 Gall Bladder pathology	Practical
Wednesday 03/05/2024	F. M – L7 Nonmetallic poisons - I	CPC		Patho – L16 Peptic ulcers - II	Practical
Thursday 04/05/2024	EYE – L6 Tumors of Eyelids	C. M – L7 Health Education		ENT – L6 Dysphagia	Research – L1
Friday 05/05/2024	Pharma – L7 Drugs used in the treatment of hepatitis B & C - II	EYE – L7 Management of Lid Bumps – I		PRAYER BREAK	Research – L1

Week – 6
Theme-6: Diarrhea and constipation

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 12:00PM	12:15PM – 01:15 PM	01:15PM 03:00PM
Monday 08/05/2024	PREPARATORY LEAVE				
Tuesday 09/05/2024	BLCOK – J THEORY EXAM				
Wednesday 10/05/2024	PREPARATORY LEAVE				
Thursday 11/05/2024	BLOCK – J OSPE EXAM				
Friday 12/05/2024	Patho – L17 Pancreas – I	EYE – L8 Ptosis	HOSPITAL WORK	PRAYER BREAK	Research – L1

Week – 7
Theme-7: Diarrhea and constipation

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 12:00PM	12:15PM – 01:15 PM	01:30PM 03:00PM
Monday 15/05/2024	F. M – L8 Nonmetallic poisons - II	Med – L6 Peptic ulcer disease – I	HOSPITAL WORK	Patho – L18 Pancreas – I	Practical
Tuesday 16/05/2024	F. M – L9 Abdominal injuries	Patho – L19 Pancreas – II		C. M – L8 Health plans longitudinal horizontal, ADP, SAP	Practical
Wednesday 17/05/2024	Med – L7 Peptic ulcer disease – II	Paed – L2 Acute hepatitis A		C. M – L9 Health plan MDGs	Practical
Thursday 18/05/2024	EYE – L8 Trichiasis, Entropion and Ectropion	Patho – L20 Liver Abscess		Surgery – L5 Carcinoma gall bladder	Practical
Friday 19/05/2024	ENT – L7 Oral ulceration	EYE – L9 Ptosis		PRAYER BREAK	Patho – L21 Parasitic enterocolitis

Week – 8
Theme-8: Bleeding Per Rectum

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM - 12:00PM	12:15PM – 01:15 PM	01:30PM - 03:00PM
Monday 22/05/2024	Pharma – L8 Laxatives	Med – L8 Upper GI Bleeding	HOSPITAL WORK	Pharma – L9 Anthelmintic	Practical
Tuesday 23/05/2024	Paed – L3 Lactase deficiency and infectious diarrhea	F. M – L10 Vegetable poisons - I		Surgery – L6 Pancreatitis	Practical
Wednesday 24/05/2024	ENT – L8 Trauma to the palate and Oropharynx	C. M – L10 Health plans – SDGs		F. M – L11 Vegetable poisons - II	Practical
Thursday 25/05/2024	EYE – L10 Proptosis – Basics	C. M – L11 Health Planning		Patho – L22 Tumors of the liver	Prime – L1 Dealing with patients Miss Afroz
Friday 26/05/2023	Patho – L23 Gall bladder cancer	Pharma – L10 Anti-amoebic drugs		Pharma – L9 Anthelmintic	Patho – L24 Diphyllobothrium latum

Week – 9
Theme-8: Bleeding Per Rectum

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 12:00PM	12:15PM – 01:15 PM	01:30PM 03:00PM
Monday 29/05/2024	Paed – L4 Celiac disease	Patho – L25 Inflammatory bowel disease (IBD)	HOSPITAL WORK	Med – L9 Hepatitis B virus infection	Research – L1
Tuesday 30/05/2024	F. M – L12 Snake poisons - I	C. M – L12 Health Policy		Pharma – L11 Drugs used in the treatment of IBS and IBD	Practical
Wednesday 31/05/2024	BLOCK – J OSPE EXAM				
Thursday 01/06/2024	Patho – L26 Intestinal obstruction, Ischemic bowel	C. M – L13 Health Economics	HOSPITAL WORK	Patho – L27 Bacterial enterocolitis	Practical
Friday 02/06/2024	ENT – L9 Carcinoma of oral cavity	Surgery – L7 Liver abscess		PRAYER BREAK	Practical

Week – 10
Theme-8: Bleeding Per Rectum

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	12:15PM – 01:15 PM	12:15PM – 01:15 PM	01:30PM 03:00PM
Monday 05/06/2024	OPENING CEREMONY (SPORTS WEEK)				
Tuesday 06/06/2024	F. M – L13 Snake poisons - II	Patho – L28 Diarrhea	HOSPITAL WORK	Surgery – L8 Acute appendicitis	SPORTS WEEK
Wednesday 07/06/2024	Family Medicine – L1 Acute and chronic hepatitis	CPC		C. M – L14 Role of international health agencies in public health	
Thursday 08/06/2024	Med – L10 Hepatitis C virus infection	Patho – L29 Schistosoma haematobium, mansoni and japonicum		C. M – L15 Overview of common intestinal worm infestation and their control	
Friday 09/06/2024	Patho – L30 Carcinoma Pancreas	Surgery – L9 Intestinal obstruction		PRAYER BREAK	

Week – 11

Theme-8: Bleeding Per Rectum

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	10:00AM 12:00PM	12:15PM – 01:15 PM
Monday 13/06/2024	CLOSING CEREMONY (SPORTS WEEK)			
Tuesday 13/06/2024	F. M – L14 Irritants poisons/ powder glass	Hospital Work	Patho – L31 Ascaris and Ankylostoma duodenale	Practical
Wednesday 14/06/2024	Family Medicine – L2 Enteric infections – I		Surgery – L11 Crohn`s disease	Practical
Thursday 15/06/2024	Family Medicine – L3 Enteric infections – II		C. M – L17 Food Hygiene	Practical
Friday 16/06/2024	C. M – L18 Control of Dysentery		PRAYER BREAK	Patho – L32 Colonic polyps hemorrhoids colorectal carcinoma

Week – 12
Theme-8: Bleeding Per Rectum

Day/Date	08:00AM - 09:00AM	09:00AM - 10:00AM	12:15PM – 01:15 PM	12:15PM – 01:15 PM	01:30PM 03:00PM
Monday 19/06/2024	Med – L13 Intestinal tuberculosis	Surgery – L12 Diverticular disease	HOSPITAL WORK	Med – L14 Irritable bowel syndrome	Research – L1
Tuesday 20/06/2024	Med – L15 Ulcerative colitis	Surgery – L13 Anal diseases Fistula fissures hemorrhoids		DSL/Pathology	Med – L16 Crohn's disease
Wednesday 21/06/2024	Surgery – L14 Colorectal cancers	Med – L17 Ano-rectal infections		Prime – L2 Power Dynamics	Surgery – L15 Ischemic Colitis
Thursday 22/06/2024	EYE – L11 Preseptal and Orbital Cellulitis	ENT – L10 Approach to a patient with sore throat		Prime – L3 Emotional intelligence	Research – L1
Friday 23/06/2024	ENT – L11 Anatomy & physiology of salivary glands	EYE – L12 Thyroid Eye disease (TED)		PRAYER BREAK	DSL/Pathology

12. For inquiry and troubleshooting



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13.Module Evaluation Form

This is an example of feedback form and real-time feedback will be obtained through an electronic link and/or your LMS.

MBBS Year: _____ Block: _____ Module: _____

Date: _____

1. (Unsatisfactory) 2 (Fair) 3 (Satisfactory) 4 (Good) 5
(Excellent)

Category: Course Contents

No.	Question	1	2	3	4	5
1	To what extent did the course contents align with the stated learning objectives of the module?					
2	How clear and comprehensive were the course materials provided in this module?					
3	Were the core topics adequately covered, ensuring a well-rounded understanding of the subject?					
4	How current and up-to-date were the course contents in reflecting recent advancements?					
5	Did the module incorporate real-world applications and case studies effectively?					
Category: Learning Resources						
6	Were the learning resources (e.g., textbooks, online materials, laboratory facilities) readily available and easily accessible?					
7	How helpful were additional learning resources such as supplementary readings or multimedia content?					
8	Did the module offer adequate support for research and independent study?					
9	Were digital resources and online platforms effectively utilized to enhance the learning experience?					
10	Were there sufficient opportunities for hands-on practice and practical application of knowledge?					
Category: Teaching Methods						
11	How well did instructors engage with students and create a supportive learning environment?					
12	Were diverse teaching methods (e.g., lectures, group discussions, simulations) effectively employed?					
13	How responsive were instructors to questions, concerns, and feedback from students?					
14	To what extent did instructors provide timely and constructive feedback on assignments and assessments?					
15	Were opportunities for collaborative learning and peer-to-peer interactions encouraged and facilitated?					
Category: Engagement and Motivation						
16	To what extent did the module use real-world examples and practical applications to engage students?					
17	How well were active learning techniques (e.g., problem-solving, case studies) integrated into the curriculum?					
18	Did the module provide opportunities for students to					

	pursue their individual interests within the subject matter?					
19	Were assessments designed to challenge and motivate students to excel in their studies?					
Category: Inclusivity and Diversity						
20	How well did the module accommodate different learning styles and preferences among students?					
21	Were efforts made to include diverse perspectives, cultures, and backgrounds in the curriculum?					
22	How effectively were accommodations provided for students with varying levels of prior knowledge?					
Category: Overall						
No.	Question	1 (Very Poor)	2 (Poor)	3 (Fair)	4 (Good)	5 (Excellent)
23	How would you rate the overall quality of this module?					

14.Students Diary/Notes

[illegible]

PROGRESS: _____

ACHIEVEMENT: