NUMS

NATIONAL UNIVERSITY
OF MEDICAL SCIENCES

MBBS
Final Year Curriculum
Medicine & Allied
(2023)

National University of Medical Sciences

Pakistan

1. Introduction

Medicine is a broad based specialty dedicated to providing primary and specialized care to adults. Therefore, it forms a key component of the undergraduate curriculum and is taught throughout the five years with increased emphasis in last three years. Its primary focus is on building knowledge, skills and attitudes of the students for the practice of medicine not only at the primary care level but to advance to postgraduate studies for clinical practice, medical education and research.

2. Mission

Our mission is to prepare future doctors for independent practice after graduation as a general practitioner who can provide patient centered medical care with highest standards of professionalism

3. The objectives of the program

The program objective is to establish a foundation for independent practice after graduation as a general practitioner and involves the principal aspects of health improvement, preventive medicine, and acute and chronic care in the domain of medical disorders.

a) Knowledge

1) Acquisition of the knowledge and the ability to apply it in approach to the common complaints and symptoms in medical diseases.
2) Knowledge of common medical diseases and the ability to apply it to primary medical care of the patients within the limits of general practitioner's duties.
3) Acquisition of the knowledge of simple procedures in outpatient setting that the general practitioner must be able to do.

b) Skill

1) Ability to take clinical history and perform clinical examination in patients with medical disorders.
2) Ability to construct and execute a management plan for common medical diseases including emergencies.
3) Ability to do basic procedures required in the practice of medicine.
4) Ability to interpret results of common laboratory tests and imaging techniques in medicine.

4. Competencies

a) Communication skills
b) Critical thinking
c) Problem solving
d) Clinical skills
e) Examination skills
f) Procedural skills

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5. Learning Outcome

At the end of final year, student will be able to:

a) Diagnose common Medical problems, suggest and interpret appropriate investigation, rationalize treatment plan and if appropriate, refer patient for specialist opinion/ management.
b) Suggest preventive measure for the common Public Health Problem in the community.
c) Perform relevant procedures.
d) Convey relevant information and explanations accurately to patients, families, colleagues and other professionals.
e) Understand medical ethics and its application pertaining to medicine and maintain the confidentiality of the patient.
f) Adapt research findings appropriately to the individual patient situation or relevant patient population.

6. Teaching hours – Medicine

Sessions	YEARS	CONTACT HOURS
2018-2019	V	420
2019-2020	IV	95
2020-2021	III	130
2021-2022	II	30
2022-2023	I	30

7. Learning Strategies & Situations

A variety of pedagogies are used in this course, including didactic teaching, team-based and evidence-based learning in class rooms and patient side environment. Students are encouraged to adopt and inculcate self-learning strategies during the course.

8. Learning Opportunities

a) Interactive lectures
b) Teaching Ward Rounds
c) Case presentations
d) Case based Discussion
e) Short cases in OPD
f) Bedside Discussion
g) Small Group Discussion
h) Workshops
i) Self-learning Activities
j) Skill Lab Activity

9. Venues for learning opportunities

a) Outpatient clinic

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b) Emergency room
c) Inpatient ward
d) Tutorial room
e) Libraries including audio-visuals

10. Specific Learning Outcomes

Learning outcomes specific to the medicine course have been tabulated below in the table of specification and matched with educational strategies.

a. Implementation of curriculum

*The university will give details of all content including learning outcomes and table of specifications, distribution of which across the five years and rotations is upon the discretion of the medical college/institute.

b. Attendance & Discipline:

a) A record of attendance of medical students, /test results, end of module/rotation test result, workshop marks should be updated regularly.
b) Each Head of unit would keep a log of all clinical activities
c) Attendance of each student would be endorsed in his logbook as well.
d) Overall 75% attendance is mandatory to appear in final professional exam.

c. Assessment

Assessment is an important aspect of any training program which not only includes assessment of students but also of the training program itself. The performance of each student would be marked and counted towards final internal assessment. The following tools/ methods would be used for this purpose:

a) Theory

1) Periodical class tests

2) End of block/Rotation Exams: At the end of each block/clinical rotation, a theory exam would be held concurrently for the entire class from the syllabus covered during this period.

b) Practical

1) **Log Book:** Each student would complete his log book and get it countersigned from HOD at the end of each rotation. Log book is maintained during the rotation.
2) **End of Rotation Exams:** At the end of each clinical rotation, the whole group would have a clinical exam.
3) 4x scheduled workshops including BLS/ACLS **(only attendance is required to get marks).**

c) Internal assessment. There will be 10% internal assessment for session 2018-19

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d) **Professional exam**. Professional exam of Medicine will be held in final year. There will be 300 marks theory paper and 300 marks of practical. Student has to pass theory and practical separately with minimum 50 % marks. However, in clinical subjects, student should pass in clinical exams / OSCE (with 50% marks) and unobserved stations (with 50% marks) separately

d. Evaluation of the Course

a) Student portfolio should be maintained in the department in which students should give their feedback either by name or anonymously.
b) Faculty suggestions for improvement of training may be incorporated in the next rotation.

e. Recommended Readings

a) Davidson's Principles and Practice of Medicine
b) Current Medical Diagnosis and Treatment
c) Oxford Handbook of Clinical Medicine
d) Macleod Clinical Methods
e) Hutchinson Clinical Methods

f. Reference Book

a) Harrison Clinical Methods

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The table below gives details of all content, distribution of which across the three years and rotations is upon the discretion of the medical College/Institute:

Theme/ Topic	Course Content	Learning Outcomes		Instructional Strategies	Assessment
		At the end of each module, student will be able to:			
		Knowledge	Skill/ Attitude		
➢ **INTRODUCTION TO MEDICINE**					
Symptomatology	Symptomatology of following: • CVS disease • Respiratory diseases • GI diseases • CNS diseases • Locomotor diseases • Renal diseases • common endocrine diseases	• Correlate clinical findings to anatomical structures • Correlate clinical features to etiology in terms of congenital, traumatic, inflammatory, neoplastic or miscellaneous. • Discuss basic pharmacology of drugs being used in a medical unit • list the investigations • Outline management plan	• Take the relevant history • Perform general physical examination • Perform systemic examination of different systems • Show empathy and sympathy while examining the patient • Recognise the right to consent and privacy of the patient • Present findings of the history and examination in logical order verbally as well as in written form	CBL/ Bed side training/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Common clinical presentations	Approach to patient with: • Fever • Headache • Cyanosis • Jaundice • chest pain • Unconsciousness • Dyspnea • Dyspepsia • Hematemesis • Bleeding per rectum • Malena • Vomiting • Diarrhoea • Fits • Anorexia and weight loss • Oedema • Acute Poisoning • Ascites				

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	• Anemia • Critically ill patient • **PUO**				
➢ **NUTRITION/OBESITY/ CHOLESTEROL RELATED & GENETIC DISORDERS**					
Nutrition	Vit B12 deficiency Folate deficiency Metabolic syndromes	• Assess the patient with nutrition disorders • Propose investigation modalities Treatment options for nutritional deficiencies	• Take the relevant history • Perform general and relevant clinical examinatio	CBL/ Bed side training/DL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Obesity		• Assess the patient with nutrition disorders • Discuss the investigation modalities and Treatment options		CBL/ Bed side training/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Cholesterol Related Disorders	Dyslipidemia	• Assess the patient with nutrition disorders • Discuss the investigation modalities for diagnosis • Discuss the Treatment options available		CBL/ Bed side training/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Genetic Disorders	Hemoglobinopathies • Sickle cell syndromes • Thalassaemias	• Classify hemoglobinopathies on the basis of defects in basic structure and formation • Identify characteristic		Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		features of each type of hemoglobinopathy • Establish clinical basis of diagnosis of various hemoglobinopathies and them • treatment modalities			
➢ **POISONING/ANIMAL BITES**					
Animal Bites	Snake Bite- Diagnosis and management	• Classify Snake bite, based on animal and time duration and type of wound. • List the immediate management and long term management • Discuss the antivenom type and dosing and the criteria of administering antivenom • Enumerate the various complications	• Take history of a patient • Perform clinical examination of a patient with snake bite • Counsel the patients and relatives regarding the correct response at home of the management of snake bite and regarding the immediate presentation of the patient to hospital	CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Poisoning	Paracetamol Poisoning- Diagnosis and management	• Discuss the pharmacological effects of Paractamol. • Diagnose paracetamol poisoning on the basis of clinical presentation • Apply the concepts of mode of reversal to the dosage and route of	• Take history of a patient • Perform clinical examination of a patient with poisoning • Counsel the patient to prevent self-harm	CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		reversal medication • Enumerate the complication			
➢ **DERMATOLOGY**					
Basic Dermatology	• Anatomy and Physiology of Skin related to Clinical Dermatology • skin lesions	• Apply concepts of anatomy and physiology of skin to clinical dermatology • give pathologic basis of skin lesions • Identify different types of skin lesions • characteristic differentiating features of various skin lesions	• Take history of a patient • Perform clinical examination of a patient with skin lesions	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Allergy	Pruritis • Differential diagnosis • Management	• Classify types of pruritis • Identify its characteristic lesions • Advise specific lab investigations • Discuss the steps of management	• Take history of a patient • Perform clinical examination of a patient with pruritis	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	• Urticaria • Anaphylaxis	• Define urticaria • Diagnose urticarial illness on the basis of clinical features • Give causes of anaphylaxis • Advise specific lab investigations • Describe immediate management of urticaria.	• Take history of a patient • Perform clinical examination of a patient with urticaria	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Dermatitis	Eczema	• Classify eczema • Apply diagnostic criteria to clinical assessment of eczema • Develop management plan of eczema	• Take history of a patient • Perform clinical examination of a patient with eczema	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Viral infections of skin	• list common types of viral infections of skin • Establish diagnosis of viral skin infections based on clinical features and investigations. • Elaborate various management modalities of viarl skin infections	• Take history of a patient • Perform clinical examination of a patient with viral infections of skin	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Bacterial and Mycobacterial infections of skin	• list the types of Bacterial and Mycobacterial Infections • Give clinical features and symptoms of bacterial and Mycobacterial infections • Develop management plan to establish diagnosis and treat different infections	• Take history of a patient • Perform clinical examination of a patient with bacterial infections	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Acne vulgaris	• Clinically assess Acne vulgaris • Diagnose acne vulgaris based on clinical features	• Take history of a patient • Perform clinical examination of a patient	CBL/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		and investigations • Suggest treatment options for Acne vulgaris			
	Fungal infections of skin	• Differentiate between different fungal infections of the skin based on their clinical features and management plan	• Take history of a patient • Perform clinical examination of a patient with fungal infections of skin	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Infestations	• Scabies • Pediculosis	• Diagnose scabies and pediculosis based on clinical features and investigations • Recommend specific treatment options for scabies and pediculosis	• Take history of a patient • Perform clinical examination of a patient with infestations	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Other disorders	• Psoriasis and Lichen planus • **Nodular ulcerative cutaneous lesions** • Cutaneous signs of systematic disease	• Explain the etiology and precipitating factors • Discuss general and specific treatment of psoriasis and Lichen planus • Describe the role of ultraviolet and PUVA therapy and its uses in Psoriasis • Propose systemic treatment of psoriasis and Lichen planus	• Take history of a patient • Perform clinical examination of a patient with psoriasis and Lichen planus	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Disorders of hairs.	Alopecia	• Classify alopecia • Make clinical diagnosis by assessing symptoms. • list necessary investigations • Discuss management of the condition.	• Take history of a patient • Perform clinical examination of a patient with alopecia	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Sexually transmitted diseases	Syphilis Gonorrhea Chlamydia	• Make clinical diagnosis by assessing symptoms. • list necessary investigations • Discuss management of the condition.	• Take history of a patient • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation) /CBL/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
➢ **NEUROLOGY/MUSCLE DISORDERS**					
Headache	• Differential diagnosis of headache, Migraine, cluster, tension, analgesia-overuse, neuralgias, idiopathic intracranial hypertension, temporal arteritis • Presentations and clinical features of various types of headache especially migraine • Etiologies & Pathogenesis	• Assess the patient with headache. • Discuss the investigation modalities for diagnosis • Elaborate pharmacologic treatment for Acute condition and Prophylaxis • Migraine. • Suggest primary drugs used to prevent nausea related to migraine. • Develop management plan for complications of migraine including life	• Take history of a patient • Perform clinical examination of patient with headache	Lecture and bed side teaching/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		style modifications			
Unconsciousness	Approach to an Unconscious Patient	• Generate differential diagnosis of the unconscious patient • Identify signs and investigations to determine the cause • Justify the utility of Glasgow Coma Scale (GCS) • Outline the emergency management of patient	• Take history of a patient • Perform clinical examination of unconscious patient • Manage an unconscious patient	Lecture and bed side teaching/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Gait/movements Disorders	• Parkinson's disease, essential tremor, Huntington's disease, tics, medication-induced dyskinesia • Distinguishing features of essential tremor from dystonic tremor, cerebellar tremor, parkinsonian tremor, and other tremor disorders • Pharmacological treatment for relief of symptoms and its complications	• Review the gait cycle • Classify gait disorders • Recognize common clinical features of gait disorders • Differentiate between clinical and laboratory features of essential tremor dystonic tremor, cerebellar tremor, parkinsonian tremor, and other tremor disorders • Recognize the spectrum of movement disorders, both hypo- and hyperkinetic	• Take history of a patient • Perform clinical examination of patient with gait disorders	Lecture and bed side teaching/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	• Non Pharmacological treatment including surgery and rehabilitation	• Generate differential diagnosis of PD • Describe the prevalence and etiology of Parkinson's disease • Recognize the clinical features and presentations of movement disorders • Outline the workup and management of patients with gait disorders			
	• Myasthenia Gravis • Muscle Dystrophy	• Provide pathophysiologic al basis of Myasthenia gravis. • Differentiate between Myasthenia and Dystrophy. • Give genetic basis of muscular dystrophy • Identify clinical features of Myasthenia Gravis • Diagnose various stages on time based characteristic features. • Develop management plan for Myasthenia Gravis	• Take history of a patient • Perform clinical examination of a patient with Myasthenia and Dystrophy.	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Spinal cord disorders.	Myelitis	• Assess the patient with Myelitis • Suggest investigation modalities for diagnosis • Evaluate treatment options for Myelitis	• Take history of a patient • Perform clinical examination of patient	Lecture & bedside teaching (Case presentation) /CBL/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Cerebrovascular accident	• Stroke • Transient ischemic attack (TIA)	• Classify stroke • Correlate pathophysiology of stroke to its causes and risk factors • Outline early evaluation and management of stroke patients • Emphasize the importance of early symptom recognition and prompt reaction • Justify the role of thrombolytic therapy and administration of tPA • Explain the pathophysiological basis of Transient Ischemic Attack (TIA) • Evaluate stroke risk after transient ischemic attack (TIA) • Order Investigations	• Take history of a patient • Perform clinical examination of patient with stroke • Counsel the patient with stroke about physiotherapy	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		for diagnosis of stroke • List the complications of stroke • Identify various prevention strategies pertaining to stroke • Outline management of ischemic and hemorrhagic stroke			
Seizures	• Epilepsy • various seizure types including adult vs pediatric seizures • Status Epilepticus • Epilepsy Management Issues • Medically refractory epilepsy and immunotherapy • Anticonvulsants in Specific Patient Populations such as Neonates, Children, Elderly, Women on contraceptive agents, Pregnant women, Patients with	• Differentiate between different types of seizures including epilepsy • Explain pathophysiological basis of epilepsy • Identify the cause and trigger factors associated • Recognize the clinical features of seizures • Outline the management of Status Epilepticus • List the investigation of a patient with suspected epilepsy • Outline the acute and long term management of seizures, both medical and surgical	• Take history of a patient • Perform clinical examination of patient with seizures	Lecture and bed side teaching/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	hepatic or renal insufficiency, (HIV)–infected patients • Seizure relapse after discontinuation of drug therapy	• Evaluate the considerations in special populations such as pregnancy and old age • illustrate the Goals of management of epilepsy			
Infections of CNS	Meningitis/ Encephalitis/ Brain Abscess	• Differentiate among the various infections of CNS based on • etiologies and clinical features and presentations • Outline the modalities for investigation and medical management of CNS infections • Identify Complications their treatment • Advocate preventive strategies for complications	• Take history of a patient • Perform clinical examination of patient with infections of CNS	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Other diseases	Multiple Sclerosis	• Provide pathophysiologic basis of the effects of Multiple Sclerosis (MS) on the body. • Diagnose MS on the basis of to Clinical features • Develop plan for the workup and management including	• Take history of a patient • Perform clinical examination of patient with MS • Counsel the patient about prognosis of MS	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		therapeutic options, of a patient with MS • Propose plan for treatment of acute relapse, prevention of future relapses, treatment of complications and management of disability. • Provide pathophysiologic basis of the poor prognosis of MS			
Motor Neuron Disease/ Polyneuropathies	• Amyotrophic Lateral Sclerosis (ALS), Guillain–Barré Syndrome (GBS), Post-polio Syndrome (PPS), neuropathies, and brachial plexus injuries • lower motor neuron disease • upper motor neuron disease • Investigations and general management of these patient • Role of Plasma exchange or IV immunoglobulin therapy	• Correlate the phenomenon of degeneration and regeneration nerve and muscle and patterns of involvement in motor neuron disease • Describe the demographic, risk factors, etiology, pathophysiology, diagnosis, general progression and prognosis of Amyotrophic Lateral Sclerosis (ALS), Guillain–Barré Syndrome (GBS), Post-polio Syndrome (PPS), neuropathies, and brachial plexus injuries • Elaborate the pathophysiology,	• Take history of a patient • Perform clinical examination of patient with motor neuron diseases	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		incidence, signs and symptoms, and typical progression of Guillain-Barre syndrome • Differentiate among lower motor neuron and upper motor neuron disease based on signs and symptoms and pathology • Describe the general investigations and interpretation of nerve conduction studies, including motor and sensory studies of peripheral nerves and clinical electromyography • Discuss the differential diagnosis, management and prognosis of these diseases			
Dementia	Neurodegenerative cognitive impairment, Alzheimer's disease (AD) and related dementias	• Distinguish neurodegenerative cognitive impairment, Alzheimer's disease (AD) and related dementias from age-related normal cognitive changes.	• Take history of a patient • Perform clinical examination of patient with dementia	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Apply standard diagnostic criteria for mild cognitive impairment, dementia, and Alzheimer's disease • Apply standard guidelines for the laboratory investigation of patients with dementia or suspected dementia. • Relate the etiology and risk factors of conditions leading to dementia to its pathophysiology and progression • Discuss the short and long term management of disease. • Review the standard pharmacotherapy for cognitive deficits experienced by patients with mild cognitive impairment & dementia. • Describe non-pharmacological interventions for management of behavioral disturbances ensuring			

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		Compassionate Palliative & End-of-Life Care for People with Dementia			
➢ **GASTROENTEROLOGY**					
Dyspepsia/ Indigestion	Dyspepsia/ GERD/ Peptic Ulcer	• Identify the causes of Dyspepsia, GERD and Peptic Ulcer • Generate differential diagnosis of Dyspepsia, GERD and Peptic Ulcer • Establish definitive diagnosis based on laboratory investigations Develop treatment plan for Dyspepsia, GERD and Peptic Ulcer • Evaluate prognosis of the patient of Dyspepsia, GERD and Peptic Ulcer	• Take history of a patient • Perform clinical examination of patient with dyspepsia • Counseling of patients with GERD & Peptic ulcer about the outcomes of diseases and how to prevent them	Lecture & bedside teaching (case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Gastrointestinal Bleeding	Differential diagnosis of • Upper GI Bleeding • Lower GI Bleeding Clinical assessment, and signs and symptoms Management Risk factors for death in Upper GI bleeding Prognosis	• Differentiate between upper and lower GI bleeding • Assess the patient on the basis of signs and symptoms • Outline the management plan • Outline the risk factors for death in Upper GI bleeding	• Take history of a patient • Perform clinical examination of patient.	Lecture & bedside teaching (Case presentation) /CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Assess the Prognosis			
Diarrhea	• Acute and chronic diarrhea • Inflammatory Bowel Disease • Ulcerative colitis Crohn's disease • Irritable Bowel Syndrome • Clinical features, signs and symptoms • Managemen t • Malabsorption • Sprue Tropical • Coeliac Disease	• Differentiate between Acute and Chronic Diarrhoea on the basis of its etiology • Outline the risk factors for Acute and Chronic Diarrhoea • Assess the patient on the basis of signs and symptoms • Outline the investigations and management plan • Discuss the Prognosis • Discuss the prognosis	• Take history of a patient • Perform clinical examination of patient with diarrhea	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Tumours	• Upper GI Malignancy • Lower GI Malignancy	• Classify Upper and lower GI tumours • Differentiate between benign and malignant tumours on the basis of its etiology and clinical features • List risk factors • Outline investigations and management of tumours	• Take history of a patient • Perform clinical examination of patient with GI tumours	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
• **LIVER & PANCREAS**					
Chronic Liver disease	Ascites and Management	• Elaborate the causes of Ascites • Outline the management and prognosis	• Take history of a patient • Perform clinical examination of patient with CLD	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	Cirrhosis of Liver	• Describe the causes, pathology and clinical features of Hepatic Cirrhosis • Explain the pathogenic mechanism of Hepatic Fibrosis • Discuss the Management and prognosis of the condition	• Counsel a cirrhotic patient		
	Portal Hypertension/ Sequalae • Aetiology and pathogenesis • Clinical features • Investigations and management Complications of Portal Hypertension	• ClassifiyPortal Hypertension according to site of vascular obstruction • Evaluate Management and prognosis of the condition			
	Hepatic Encephalopathy	• Correlate the causes and pathology of hepatic encephalopathy to its clinical features • Outline the management and prognosis			
Hepatitis	Hepatitis B and C Infections Other Forms of Hepatitis (A, D and E) **Autoimmune Hepatitis**	• Classify viral Hepatitis • Differentiate between different types of Hepatitis • Interpret investigations for diagnosis of Hepatitis B and C	• Take history of a patient • Perform clinical examination of patient with hepatitis	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Discuss their modes of transmission • Outline the treatment plan and prognosis • List the Complications			
Pancreatitis	Acute Pancreatitis Chronic Pancreatitis	• Elaborate the pathophysiology of Acute and Chronic Pancreatitis • Diagnose the patient on the basis of Signs, symptoms and investigations • Outline the Treatment plan • List its Complications	• Take history of a patient • Perform clinical examination of patient with pancreatitis	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Investigation & Imaging of GI, Liver and Pancreatic disorder		Interpret investigations for diagnosis of GI, Liver and Pancreatic disorder		Lecture & bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Other hepatobiliary/pancreatic disorders	• Hemochromatosis • Wilson Diseases • SBP/HRS • Metabolic Diseases of the liver • Liver abscess • HCC • CA pancreas/ Ampullary Carcinoma • Abdominal tuberculosis • Dysphagia and its evaluation	• Diagnose the patient on the basis of Signs, symptoms and investigations • Outline the Treatment plan	• Take history of a patient • Perform clinical examination of patient	• Lecture & bedside teaching • (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
➢ **RHEUMATOLOGY/BONES**					

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Inflammation of joints	**Rheumatoid arthritis**	• Discuss etiology, Symptoms and signs of the disease • Diagnose the patient on the basis of presenting complaints and clinical examination • Interpret relevant Investigations and laboratory findings. • Recognize complications and their management options	• Take history of a patient • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Osteoarthritis	• Diagnose the patient on the basis of presenting complaints and clinical examination • Determine causes of osteoarthritis established through Investigations and laboratory findings. • Manage complications of the disease	• Take history of a patient with joint disease • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation) /CBL/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Seronegative Poly Arthritis	• Define diagnostic criteria for Seronegative Poly Arthritis	• Take history of a patient • Perform clinical examination of a	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Correlate etiology of the disease to its presentation. • Diagnose the patient on the basis of presenting complaints and clinical examination • Propose appropriate Investigations and laboratory findings to establish diagnosis. • Manage complications of the disease	patient with Poly Arthritides	/CBL	
	Arthritis/ ankylosing spondylitis	• Diagnose the disease on the basis of clinical Presentation and investigations. • Correlate clinical signs with radiological findings. • Suggest appropriate diagnostic modalities and treatment options.	• Take history of a patient • Perform clinical examination of a patient with Arthritis/ ankylosing spondylitis	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Gout	• Give pathological basis of Gout • Differentiate between acute and chronic disease based on presentation, investigations	• Take history of a patient • Perform clinical examination of a patient with gout	Lecture & bedside teaching (Case presentation) /CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		and treatment options • Diagnose the disease based on clinical presentation and investigations. • Discuss the association of disease with other diseases • Manage the complications of disease			
	Polymalgia rheumatica	• Define Polymalgia rheumatica • Develop therapeutic plan for the disease after diagnosing based on clinical presentation of various stages, and investigations diagnosing	• Take history of a patient • Perform clinical examination of a patient with Polymalgiar heumatica	Lecture & bedside teaching (Case presentation) /CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Systemic disorders involving joints	SLE	• Define diagnostic criteria Seronegative SLE • Suggest therapeutic options and investigations after establishing diagnosis based on etiology, clinical Presentation andinvestigations Manage complications.	• Take history of a patient • Perform clinical examination of a patient with SLE	Lecture & bedside teaching (Case presentation) /CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	• MCTD	• Suggest therapeutic options and	• Take history of a patient	Lecture & bedside teaching	MCQ/SEQ/ SAQ/OSPE/

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	• Vasculitis (Small, Medium and Large) • Dermatomycosis/Polymyosities • Scleroderma/Raynaud Phenomenon and Syndrome • Systemic Sclerosis • Sjorgen syndrome/Keratoconjuncitives Sicca	investigations after establishing diagnosis based on etiology, clinical Presentation and investigations	• Perform clinical examination of a patient	(Case presentation) /CBL	Long case/ short case case
➢ **ENDOCRINOLOGY**					
Disorders of Pituitary gland and Hypothalamus	Acromegaly/Growth hormone deficiency.	• Define criteria for diagnosing acromegaly, clinical presentation of acromegaly/ growth hormone deficiency. • Identify pathophysiology of central precocious puberty, acromegaly and growth hormone deficiency. • Discuss functions of anterior and posterior pituitary hormones and hypothalamic hormones. • Suggest investigations for diagnosis by oral glucose tolerance	• Take history of a patient • Perform clinical examination of a patient with acromegaly	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		test and GH levels. • Propose surgical ,medical and radiotherapy management .			
	Diabetes insipidus/SIADH	• Correlate pathophysiology of diabetes insipidus/SIADH to its clinical manifestations and • Relate the effects Devise plan for diagnosis and clinical management of SIADH/diabetes insipidus.	• Take history of a patient • Perform clinical examination of a patient with diabetes insipidus	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Hypopituitrism/Addison's disease.	• Correlate pathophysiological basis of various etiological factors in to clinical manifestations of the disease • Determine diagnostic criteria for hypopituitarism/ acromegaly. • Outline the management of the disease.	• Take history of a patient • Perform clinical examination of a patient with Addison's disease	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Acute Addisonian crisis	• Outline the management of the disease	• Take history of a patient • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Disorders of thyroid gland	Hyperthyroidism	• Correlate pathophysiological basis of various	• Take history of a patient	Lecture & bedside teaching	MCQ/SEQ/ SAQ/OSPE/

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		etiological factors to clinical manifestations of hypothyroidism • Devise plan for diagnosis, drug therapy, radioactive iodine and surgeryical management of hyperthyroidism	• Perform clinical examination of a patient with hyperthyroidism	(Case presentation)	Long case/ short case
	Hypothyroidism.	• Correlate pathophysiological basis of various etiological factors to clinical manifestations of hypothyroidism. • Classify hypothyroidism. • Interpret investigations for diagnosis including thyroid function tests. • Outline management including drug therapy and regular follow up.	• Take history of a patient • Perform clinical examination of a patient with hypothyroidism	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Disorders of Parathyroid gland	Parathyroid disorders.	• Identify the hormones produced by the parathyroid and their functions. • Correlate pathophysiological basis of various etiological	• Take history of a patient • Perform clinical examination of a patient with parathyroid disorder	Lecture & bedside teaching (Case presentation)	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		factors to clinical manifestations of parathyroid endocrine disorder. • Devise plan for diagnosis and clinical management of each parathyroid disorder.			
Disorders of Adrenal Gland	• Cushing Syndrome • Pheochromocytoma • Aldosterone & related conditions	• Justify abnormalities in the hormones produced by the adrenal glands and their functions resulting in Cushing Syndrome / Pheochromocytoma Aldosterone & related conditions • Propose management of Cushing Syndrome after establishing clinical diagnosis.	• Take history of a patient • Perform clinical examination of a patient with Cushing Syndrome	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
MEN-I and II	**MEN-I and II**	• Outline management plan of MEN-I and II	• Take history of a patient • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
➢ **DIABETES MELLITUS**					
Diabetes mellitus	• Diabetes mellitus type -1 • Diabetes mellitus type-2 • **Acute Complication of**	• Differentiate between type 1 and type 2 diabetes on the basis of	• Take history of a patient • Perform clinical examination of a patient with diabetes mellitus	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	Diabetes Mellitus-DKA/HHS/Hypoglycemia • Chronic complications of diabetes mellitus	pathophysiology, etiology, • Prevalence and incidence, risk factors, manifestations and complications. • Identify abnormalities in investigations for blood sugar levels including HbA1c. • Propose diagnostic tests used for screening, diagnosis and monitoring of diabetes mellitus. • Emphasize implications of insulin and oral hypoglycemic agents used to treat patients of DM-1& II. • Identify maternal and fetal risks or complications associated with diabetes in pregnancy. • Identify the warning signs of insulin-dependent and non-insulin-dependent diabetes mellitus. • Compare prevalence of diabetes mellitus	• Advise best practices of self-care management of diabetes related to diet planning, sick day management and exercise.		

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		among different ethnic groups. • Identify risk factors for developing diabetes and its complications. • Devise Management plan for acute Complication of Diabetes Mellitus-DKA/HHS/Hypoglycemia Describe the major microvascular, macrovascular and neuropathic complications of diabetes and self-care behavior that are important in their prevention.			
➢ **PSYCHIATRY & MENTAL HEALTH**					
Introduction to Psychiatry	Phenomenology	• Give overview regarding Phenomenology and Psychiatry disorders • Classify Psychiatry disorders • Elaborate epidemiological and etiological basis of psychiatric disorders • Outline diagnostic plan for Psychiatry disorders		Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Anxiety Disorders	• Acute anxiety states • Panic disorders • Generalized anxiety disorders • Psychic Traumatic disorders • Obsessive-compulsive disorders • Phobic disorders	• Classify Anxiety Disorders • Discuss the Management of Anxiety Disorders	• Take history of a patient • Perform clinical examination of a patient with anxiety disorders	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Mood Disorders	• Major depressive episodes • Stress Related Disorders • Unipolar • Bipolar • Dysthymic • Atypical • Manic episodes	• Diagnose mood Disorder on the basis of etiology • Discuss its Management and prognosis	• Take history of a patient • Perform clinical examination of a patient with mood Disorder	Lecture & bedside teaching (Case presentation) /SDL/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Schizophrenia	• Diagnose Schizophrenia based on signs and symptoms • Devise a plan for treatment of disease, side effects of the treatment and its withdrawal. • Assess prognosis of the disease	• Take history of a patient • Perform clinical examination of a patient with Bipolar Disorder	Lecture & bedside teaching (Case presentation) /SDL/ CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Other disorders	Dissociative Disorders	• Give an overview of dissociative disorders • Discuss common presentation • Give management options for these disorders	• Take history of a patient • Perform clinical examination of a patient with dissociative disorders	Lecture & bedside teaching (Case presentation) /SDL/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	Mental and Behavioural Disorder due to General Medical Condition	• Classify different medical conditions and its related psychological disorders • Diagnose the patient on history and signs and symptoms • Outline treatment options for these disorders	• Take history of a patient • Perform clinical examination of a patient with different medical conditions and its related psychological disorders	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Psychopharmacology	overview of drugs used to treat psychiatric disorders and classification of drugs	• Classify drugs used to treat psychiatric disorders • Elaborate mode of action of drugs used in psychiatry • and their side effects		CBL/Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Drug Abuse	Substance Misuse and Abuse	• Elaborate the different groups of drugs of abuse and misuse • Suggest the laboratory investigations needed for Management • Evaluate the prognosis of substance abuse	• Take history of a patient • Perform clinical examination of a patient with substance abuse	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
➢ **HAEMATOLOGY AND TRANSFUSION MEDICINE**					
Anemias Pancytopenia clinical approach	• Iron deficiency • Megaloblastic B-12 deficiency • Folic acid deficiency • Anaemia of chronic disorder	• Differentiate between various types of anemia based on etiology, underlying pathology,	• Take history of a patient • Perform clinical examination of a patient with anemia	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	• Haemolytic anaemia • Hereditary Acquired • Aplastic anemia • Aetiology and presentation Causes & Management	symptoms and signs • Evaluate the patient on the basis of signs and symptoms and differential diagnosis • Interpret appropriately ordered laboratory investigation to reach a final diagnosis • Devise plan for treatment of disease • and complications of the condition if it remains untreated • Monitor treatment of anemia			
Transfusion	Transfusion – Blood groups and blood transfusion. Reactions & Management	• Elaborate the generic prerequisites and modes of transfusion. • Correlate the pathophysiology of blood reactions to the Requirement & safety protocol • Follow through step by step management of different types of transfusion reactions	• Follow the protocol of blood transfusion	CBL/Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Generalized Lymphadenopathy	Differential diagnosis of Generalized Lymphadenopathy	• Outline the approach to a patient with generalized lymphadenopathy to identify its cause. • Establish final Diagnosis, after generating differential diagnosis, based on clinical presentation and investigations • Suggest different treatment modalities to treat the condition	• Take history of a patient • Perform clinical examination of a patient with lymphadenopathy	CBL/Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
***Haemoglobinopathies**. *Also included in genetic disorders	• Sickle cell syndromes • Thalassaemias	• Classify hemoglobinopathies based on abnormalities in structure and formation of Hb. • Differentiate between different hemoglobinopathies based on characteristic features, signs and symptoms treatment modalities, and diagnostic approach.	• Take history of a patient • Perform clinical examination of a patient with hemoglobinopathies	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Bleeding Disorders	ITP/ Bleeding Disorders/ DIC	• Correlate abnormalities inphysiology of coagulation with. • etiology, Symptoms and signs of ITP/	• Take history of a patient • Perform clinical examination of a patient with Bleeding Disorders	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		Bleeding Disorders/ DIC • Devise plan for investigating, diagnosing and treating Bleeding disorders and their complications.			
➢ **CARDIOVASCULAR SYSTEM**					
Hypertension	Hypertension: Causes, Types, Diagnosis and Management.	• Define diagnostic criteria for hypertension. • Provide pathophysiological basis of hypertension. • Propose Life style modifications and non-pharmacological options for patients with hypertension. • Diagnose primary hypertension from secondary hypertension • Rationalize the need for achieving recommended BP goals in treatment of hypertension. • Classify antihypertensive drugs • Choose appropriate antihypertensive drug cosiderign their indications for use.	• Take history of a patient with hypertension. • Perform clinical examination of a patient with hypertension.	Lecture & bedside teaching/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Recognize types of hypertension, hypertensive urgency and emergency.			
Ischaemic heart disease	ACS/MI: Diagnosis, complications and Management	• Define • Acute coronary syndrome (ACS) • Angina • Unstable angina pectoris (UA) • Non-ST segment elevation myocardial infarction(NSTEMI) • ST segment elevation myocardial infarction • Provide pathophysiological basis of cardiac ischemia. • Diagnose ACS and MI. • List complications of MI • Analyze the pharmacological management in the treatment of ACS. • Differentiate between male and female signs and symptoms of ACS. • Examine ACS modifiable and non-modifiable risk factors. • Discuss coronary revascularization	• Take history of a patient with ACS/MI • Perform clinical examination of a patient with ACS/MI	Lecture/CBL/SDL/ Bedside training	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		procedures and nursing care.			
Heart failure	LVF CCF Cor-pulmonale	• Define Heart failure • Provide pathophysiological basis of Heart failure. • Diagnose Heart failure. • List complications of Heart failure • Analyze the pharmacological management in the treatment of Heart failure	• Take history of a patient • Perform clinical examination of a patient with Heart failure	Lecture/SDL/ Bedside training	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Endocardial diseases	Infective endocarditis.	• Identify signs/symptoms of infective endocarditis. • Differentiate between types of IE in relation to its pathophysiology • Diagnose suspected and confirmed IE on the basis of criteria used • Manage infective endocarditis • List its complications	• Take history of a patient with infective endocarditis. • Perform clinical examination of a patient with infective endocarditis.	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Pericardial diseases	Constrictive pericarditis Pericardial effusion	• Differentiate between types of Pericarditis on the basis of its etiology and pathophysiology • Identity acute and chronic complications of Pericarditis	• Take history of a patient with Pericarditis/Pericardial effusion • Perform clinical examination of a patient with Pericarditis/Pericardial effusion	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Identify the clinical manifestation of Pericarditis with diagnostic approach of Pericarditis. • State principles of management of Pericarditis. • List common causes and understand mechanism of pericardial effusion • Recognize early signs of pericardial tamponade • Justify the role of echocardiography in the diagnosis of pericardial effusion			
Cyanotic heart disease.	Congenital heart diseases (brief). Atrial Septal Defect Ventricular Septal Defect Patent Ductus Arteriosus Fallot's tetralogy Other causes of cyanosis	• Identify common etiologies and risk factors for cyanotic heart defects. • Diagnose cyanotic heart defects based on clinical manifestations and appropriate diagnostic methods • Explain the pathophysiology, manifestations, diagnosis and management of acyanotic congenital	• Take history of a patient with cyanotic heart defects • Perform clinical examination of a patient with cyanotic heart defects	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		cardiac anomalies. • Elaborate the pathophysiology, manifestations, diagnosis and management of obstructive congenital anomalies. • Explain the pathophysiology, manifestations, diagnosis and management of cyanotic heart disease. • Identify the implications of cardiac anomalies for respiratory care.			
Valvular Heart Disease	Mitral valve. disease Aortic valve disease • Causes of Valvular Heart Disease • Etiology, pathogenesis and hemodynamics of **Valvular Heart Disease** • Clinical finding, treatment of **Valvular Heart Disease** • Assessment, diagnosis and management of the patient with **Valvular Heart Disease**	• list causes of Valvular Heart Disease • Describe Etiology, pathogenesis and hemodynamics of mitral/aortic valve disease. • **Outline management plan**	• Take history of a patient with valvular disease. • Perform clinical examination of a patient with valvular disease.	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	Rheumatic fever- Diagnosis and treatment.	• Illustrate clinical features of rheumatic fever • Diagnose Rheumatic fever on the basis of its Pathogenesis • Devise the prevention and treatment plan of rheumatic fever.	• Take history of a patient with rheumatic fever • Perform clinical examination of a patient with rheumatic fever	Lecture & bedside teaching (Case presentation) /SDL	
Cardiomyopathies	Cardiomyopathies- Brief review	• Identify signs/symptoms of **Cardiomyopathies**. • List its relevant investigations, treatment plan and its complications	• Take history of a patient • Perform clinical examination.	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Investigations	ECG.	• Review the electrophysiology of the heart as it relates to the ECG • Interpret normal ECGs. • Identify common errors in ECG recording. • Recognize common characteristics of abnormal heart rhythms. • Identify abnormal heart rhythms. • Differentiate between life threatening and non-life-	Perform ECG	Lecture/ CBL and bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		threatening EKG rhythms • Identify components of the ECG waveform. • Employ a systematic process to evaluate and analyze ECG rhythm strips. • Recognize common ECG dysrhythmias. • List the common causes, consequences and patient management strategies for ECG dysrhythmias. • Provide physiological basis of the rate, rhythm and axis of ECG.			
	ETT, ECHO, CT-Angiography and cardiac catheterization-Overview	• Plan patient preparation for ECG • Select clinical protocol • Explain the role of a pre-contrast scan • Outline a contrast administration protocol • Identify access site anatomy, including femoral artery and vein,		CBL & bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		internal jugular vein, and brachial artery • List disease conditions (and surgical correction) involving these anatomic structures • Appreciate atherosclerotic disease of the ileo-femoral system and knowledge of surgical revascularizatio n anatomy, including Aorto-bifemoral graft, Fem-fem bypass, and Fem-pop bypass. • Demonstrate understanding of basic aspects of cardiac ultrasound, including physical principles, instrumentation, cardiovascular anatomy, cardiovascular physiology, and cardiovascular pathophysiology . • Give an overview of cardiac CT			

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		angiography acquisition. • List the indications and C/I of cardiac investigations			
➢ **PULMONOLOGY**					
Allergic Disorders of respiratory system	Bronchial Asthma	• Relate l abnormalities of physiology of ventilation & respiration to obstructive pulmonary diseases • Discuss the incidence, etiology, risk factors associated with asthma, pathophysiology and progression of asthma • Debate the short and long term complications of obstructive diseases • Evaluate the prognosis of disease • Establish diagnosis of asthma through a focused history and physical exam • Advise investigations	• Take history of a patient with bronchial asthma • Perform clinical examination to pick up the signs of bronchial asthma • Explain the methods to use inhaler/spacer • Teach the patient how to use a nebulizer	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		and workup of patient • Describe the procedure of pulmonary function tests and enlist criteria for diagnosing asthma and grading severity • Advise medication keeping in mind their mechanism of drug action, particularly SABA and ICS, Benefits, risks, limitations, Use patterns, compliance, device use • Evaluate the different medication delivery methods (and relevant compliance / educational issues) • Advise management plan for patients with acute exacerbations • Justify Non-pharmacological treatment • List Complications of drug therapy			

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Interstitial lung diseases	ILD/ DPLD/EAA/IPF • Definition of ILD/DPLD/EAA/IPF • Etiology and Pathophysiology of parenchymal and interstitial lung diseases • Classification of diffuse parenchymal lung disease • Diagnosis and management • Nonpharmacologic therapies, including lifestyle changes and multidisciplinary care interventions	• Determine the evaluation plan of patients with DPLD including exposure history, signs and symptoms, and results of diagnostic tests. • Critique current treatment of the DPLDs and their side effects	• Take history of a patient • Perform clinical examination of patient with ILD/DPLD	Lecture& bed side teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Sarcoidosis	• Review the epidemiology of sarcoidosis. • Recognize diverse clinical presentations of sarcoidosis on the basis of its pathophysiology • Describe the clinical predictors for disease progression and outcomes. • Devise a diagnostic pathway from a differential diagnosis.	• Take history of a patient • Perform clinical examination of patient	Lecture & bedside teaching (Case presentation) /SDL	

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		• Propose plan for drug therapy and investigating the disease.			
Inflammatory diseases	Tuberculosis- Diagnosis, Treatment 9DS- TB, MDR- TB, XDR- TB	• Review etiology, pathogenesis, risk factors and clinical features of TB • Identify the components of a clinical evaluation of a patient with TB • Advise lab investigations like Chest X-ray, Monteux test • Prioritize the objectives of TB case management • Outline control and prevention modalities • List drug therapy and side effects of first and 2nd line anti tuberculoses drugs • List DOTS • Define diagnostic criteria of MDR TB • Devise treatment of multidrug resistant (MDR) and extensively drug-resistant tuberculosis (XDR TB)	• Identify the signs and symptoms of the pt with TB • Take history of a patient • Perform clinical examination of patient with TB	Lecture and bed side teaching/ CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Evaluate the prognosis of TB and treatment of opportunistic infections • List the aims of treatment of recommended doses of first-line anti-TB drugs for adults; • Develop treatment regimens for new and previously treated patients taking into consideration • Significance of standard regimens for defined patient groups, including • Special populations like pregnant women, children, and HIV infected patients. • Manage drug therapy and its complications.			
	Pneumonia • Definition, Etiological classification and risk factors predisposing to pneumonia	• Diagnose Pneumonia on the basis of its clinical features and presentation relating to its etiology and pathophysiology	• Take history of a patient • Perform clinical examination of patient with pneumonia	Lecture &bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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	• Pathophysiology and progression of disease • Clinical features and presentation of disease • Clinical evaluation and Investigations for diagnosis • Assessment of disease severity- CURB65 • List of differential diagnosis • Management of disease and its complications • Antibiotic therapy and Supportive treatment • Pneumonias in specific populations: Immunocompromised and hospital acquired pneumonias	• Advise relevant investigations • Devise management plan • Propose plan for prevention and follow up			
	Lung Abscess	• Provide pathophysiological basis of lung abscess due to various etiological factors. • Diagnose lung abscesss based on clinical presentation • Generate differential	• Take history of a patient • Perform clinical examination of patient with lung abscess	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		diagnosis based on clinical assessment of patient • Suggest appropriate lab investigations including chest X ray, sputum examination and hematological studies. • Devise plan for drug therapy, drainage and surgical intervention for management of lung abscess.			
Obstructive airway diseases	COPD	• Provide pathophysiological basis of COPD due to various etiological factors. • Diagnose lung abscesss based on clinical presentation • Generate differential diagnosis based on clinical assessment of patient • Suggest appropriate lab investigations including chest X ray, sputum examination and hematological studies.	• Take history of a patient • Perform clinical examination of patient with lung abscess	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Respiratory Emergencies	Adult respiratory distress syndrome. Pulmonary thromboembolism/ Acute corpulmonale.	• Diagnose the patient on the basis of its clinical features and presentation relating to its etiology and pathophysiology • Advise relevant investigations • Devise management plan • Propose preventive measures and follow up	• Take history of a patient • Perform clinical examination of patient with pneumonia • Provide emergency treatment	Lecture &bedside teaching/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Respiratory Failure	• Define diagnostic criteria of respiratory failure of varied etiology. • Differentiate between acute, chronic, and postoperative respiratory failure on the basis of • pathophysiology • Recognize the signs and symptoms of respiratory failure. • Apply alveolar gas equation to evaluate respiratory failure. • Recognize the changes in blood gases that	• Take history of a patient • Perform clinical examination of patient with respiratory failure	Lecture & bedside teaching (Case presentation) /SDL/CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		accompany respiratory failure and other investigations • Review major treatment strategies for respiratory failure and their monitoring.			
Tumours	Carcinoma Lung • Etiology and risk factors for development of ca lung • Pathophysiology and classification of lung cancers • alternate treatment modalities like stenting and laser therapy	• Elaborate plan for diagnosis of common types of lung cancers • based on clinical presentations and • Radiological appearance. • Describe the grading and staging systems for lung Carcinomas • Propose plan for chemotherapy, surgical interventions and radiotherapy for management of lung carcinomas • Suggest alternate treatment modalities like stenting and laser therapy • Evaluate prognosis and need for palliative care and	• Take history of a patient • Perform clinical examination of patient with Ca lung	Lecture and bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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Miscellaneous	Pneumothorax: Causes/ Diagnosis/ Management	• Classify pneumothorax based on etiological factors • Provide Pathophysiological basis of clinical manifestations and differential diagnosis of pneumothorax. • Develop plan for diagnosing and managing a patient of pneumothorax, including emergency treatment • Identify measures for prevention of recurrence	• Take history of a patient • Perform clinical examination of patient with • pneumothorax	Lecture & bedside teaching (Case presentation) /SDL	
	Bronchiectasis	• Analyze the etiology and pathogenesis of bronchiectasis • Diagnose bronchiectasis based on clinical features radiological and lab investigations • Generate Differential diagnosis of bronchiectasis • Develop plan for diagnosing and managing a patient of bronchiectasis, including drug therapy, surgical	• Take history of a patient • Perform clinical examination of patient with bronchiectasis	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		intervention and physiotherapy • Assess prognosis required measures for prevention			
	Pulmonary Embolism	• Elaborate, epidemiology and risk factors and preventive measures for pulmonary embolism • Recognize the clinical features and presenting symptoms of pulmonary embolism • Evaluate various modalities of investigations for diagnosis and differential diagnosis • Develop plan for pharmacological and surgical management of a patient with pulmonary embolism	• Take history of a patient • Perform clinical examination of patient with pulmonary embolism	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Pleural effusion types & causes	• Apply basic concepts of important anatomic features and physiologic function of the visceral and parietal pleural membranes to explain occurrence of pleural effusions	• Take history of a patient • Perform clinical examination of patient with pleural effusion.	CBL & bedside teaching	

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		• Differentiate between transudative and exudative effusio ns based on etiology, pathophysiology and risk factors. • Diagnose effusion based on clinical features and investigations. • Manage effusion appropriate to the underlying cause			
Examination of Chest	Chest Auscultation	• Justify Significance of chest auscultation in clinical examination • Apply basic concepts of anatomy and physiology of heart and lungs and related structures in relation to auscultation • Correlate biological changes of the aging process to the altered physical findings on chest and lung examina tion	• Perform the correct procedure for carrying out chest auscultation • recognize normal breath sounds • identify Adventitious lung sounds: Wheezes, Crackles, Squeak, Pleural rub and Stridor.	Lecture and bed side teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Investigations	Chest X- ray Arterial blood Gases	• Identify anatomical features of heart	• Appreciate the appearance of pulmonary edema and the	Lecture & bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		and lungs on a chest x-ray • interpret Arterial Blood Gases findings • Learn the concept of atelectasis and the ability to recognize it on a chest x-ray • justify reasons that make lung cancer unresectable	differences between cardiogenic and noncardiogenic causes • Recognize atelectasis on a chest x-ray • Appreciate the difference findings of atelectasis and pneumonia • Recognize pleural effusions and pneumothorax appear on CXR • Recognize the signs of COPD • Recognize the signs of a benign pulmonary nodule • Recognize the signs of COPD • Recognize the signs of a benign pulmonary nodule	(Case presentation) /SDL	
Therapy	Oxygen Therapy: Various means & implications	• Differentiate between ventilation, internal respiration, and external respiration. • Identify the major muscles of respiration. • Identify factors affecting external and internal respiration.		CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		• Define hypoxemia and hypoxia. • Identify the indications dangers, problems and contraindications for oxygen therapy • elaborate preventive measures for injury when working with oxygen. • Differentiate between low flow and high flow oxygen delivery systems. • Identify different oxygen delivery devices. • EValuate physiological basis of pulse oximetry, its. • indications and limitations			
	Ventilator Techniques different modes and terms used in mechanical ventilation such as IPPV, PCV, PEEP, CPAP, BIPAP, NIPPV etc	• Emphasize primary objective of airway maintenance • list the indications for mechanical ventilation(MV) • Identify ventilation strategies. • alternative modes of MV and the basic principles of non-		CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		invasive ventilation			
➢ **NEPHROLOGY, DIALYSIS & TRANSPLANT**					
Inflammatory Diseases	Urinary tract infections Glomerulonephritis Nephrotic syndrome Nephritic syndrome Renal TB	• Diagnose the patient on the basis of its clinical features and presentation relating to its etiology and pathophysiology • Advise relevant investigations • Devise management plan • Propose preventive measures and follow up	• Take history of a patient • Perform clinical examination of patient • Counsel the patient with renal failure	Lecture &bedside teaching/SDL /CBL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Miscellaneous	Renal artery stenosis Renal tubular Acidosis Nephrolithiasis	• Diagnose the patient on the basis of its clinical features and presentation relating to its etiology and pathophysiology • Advise relevant investigations • Devise management plan • Propose preventive measures and follow up			
Renal failure	AKI (Acute renal failure) CKD(Chronic renal failure)	• Diagnose the patient on the basis of its clinical features and presentation relating to its			

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		etiology and pathophysiology • Advise relevant investigations • Devise management plan and follow up			
Treatment	Dialysis	• List the different causes requiring dialysis • Enumerate steps of dialysis and its preparation			
	Renal Transplant	• List the different causes requiring renal transplant			
➢ **INFECTIONS**					
Diagnosis and management of common infectious diseases	Typhoid/ Paratyphoid Fevers- Diagnosis and management Dengue Hemorrhagic Fever – Diagnosis and management Malaria- Diagnosis and management	• Discuss the etiology and Enumerate the Symptoms and signs of the disease • Elaborate Modes of transmission and the causative organism • Identify Susceptible individuals • Diagnose various stages of disease based on clinical and characteristic features. • Suggest Diagnostic modalities and treatment options. • Propose prevention	• Take history of a patient • Perform clinical examination • Establish diagnosis through a focused history and physical exam • Counsel the patients about importance of hygiene and how to prevent contamination of food and by limiting vector and its breeding places	Lecture & bedside teaching	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		options including vaccination.			
Septicemia	Sepsis/ Septicemia Meningococcaemia – Diagnosis and management	• Define Sepsis • Classify sepsis according to criteria • identify the organ involved and stage of the disease based on Clinical Presentation • Evaluate Diagnostic modalities, treatment options and. • complications of the disease • Propose drug treatment of sepsis and measures to prevent its progression	• Take history of a patient • Perform clinical examination of a patient with sepsis	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
HIV/AIDS	Acquired immune deficiency syndrome	• Relate the etiology of AIDS to its Symptoms and signs • identify the modes of transmission • identify individuals susceptible to the disease • Diagnose the disease and its stage on the basis of clinical presentation, • and laboratory findings • Evaluate various diagnostic	• Take history of a patient • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation) /CBL/SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		modalities and treatment options.			
***Common disease syndromes caused by different bacteria and their drug therapy.**	• Pneumococci • Staphylococci. • Streptococci. • Hemophilis influenzae. • Shigella. • Gonococci. • Pseudomonas. • Cholera. • Amoebiasis/Giardiasis	*Already taught in different modules with respective system	• Take history of a patient • Perform clinical examination of a patient	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
➢ **ONCOLOGY , DISEASES OF LYMPH NODES &BONE MARROW**					
White blood cells tumours	Lymphoma	• Corelate abnormalities in the immune system and its processes to occurrence of lymphoma and its associated clinical presentation. • Identify organs associated with Lymphoma. • Delineate the diagnostic criteria of various stages on time based Characteristic features. • Propose diagnostic modalities and treatment options.	• Take history of a patient • Perform clinical examination of a patient with Lymphoma	Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
Bone marrow tumors	• Acute Leukemia • Chronic Leukemia	• Classify various forms of acute	• Take history of a patient	Lecture & bedside teaching	MCQ/SEQ/ SAQ/OSPE/

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		and chronic Leukemia. • Differentiate between Symptoms and signs, and characteristic features of acute and chronic Leukemia • Diagnose various stages of leukemia • Propose appropriates Investigations, diagnostic modalities and treatment options.	• Perform clinical examination of a patient with bone marrow tumors	(Case presentation) /SDL	Long case/ short case
	Multiple Myeloma	• Define the pathological basis of Multiple myeloma • Classify various stages based on clinical presentation • Justify the role of laboratory investigations and various treatment options		Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case
	Myeloproliferative Disorders	• Classify various forms of Myeloproliferative disorders based on Clinical Presentation. • Diagnoses various stages of the disease. • Propose appropriate		Lecture & bedside teaching (Case presentation) /SDL	MCQ/SEQ/ SAQ/OSPE/ Long case/ short case

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		Investigations diagnostic modalities and treatment options.			
➢ **CRITICAL CARE & EMERGENCY***					
➢ **PHARMACOTHERAPEUTICS***					
<u>*Both modules XVIII and XIX are vertically integrated throughout the curriculum and taught as a part of each module where required</u>					

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Anx-A

PROCEDURE

a) Perform:

1) Injection I/V, I/M, S/C, intradermal
2) Oxygen therapy
3) Urinary catheterisation – collection and samples of blood

b) Observe:

1) Observe I/V lines/Fluids/Blood/Blood products, direct, branula, cut down, CVP
2) N/G passing and feeding
3) Foley's catheter/Red rubber catheter, IOP record maintenance
4) Endotracheal tube placement
5) Endotracheal suction/maintenance of airway/nursing on side etc.
6) Aspiration of fluids (Pleural, Pericardial, Peritoneal, Knee)
7) Lumbar puncture
8) O_2 therapy
9) Nebulisation
10) ECG taking/reading basics
11) X-ray chest reading
12) Barium series
13) I/V urograms
14) Bone and joint X-ray reading for medical problems (Rheumatoid arthritis, Osteoarthritis, Collapse vertebra, Caries spine, Multiple myeloma, Cervical rib etc.)
15) Preparing a patient for endoscopies, upper and lower GIT
16) Bone marrow aspiration/Terph

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